

Catalog 2014–2015



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866.Macomb1 (866.622.6621)
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College Catalog

2014-2015

General Information: 866.Macomb1 (866.622.6621)
website: www.macomb.edu



312.263.0456
Macomb Community College is Accredited by
The Higher Learning Commission
and is a member of the North Central Association.

While every effort is made to publish accurate information, the catalog cannot reflect changes made after its publication. Subsequent changes, to better meet the needs of students and the community, may become necessary. For the most current information, refer to the Macomb Community College website.

Center Campus

44575 Garfield Road
Clinton Township, Michigan 48038-1139

South Campus

14500 E. 12 Mile Road
Warren, Michigan 48088-3896

East Campus

21901 Dunham Road
Clinton Township, Michigan 48036-1025

University Center

44575 Garfield Road
Clinton Township, Michigan 48038-1139

Michigan Technical Education CenterSM (M-TECSM)

7900 Tank Avenue
Warren, Michigan 48092-3936

Welcome

Macomb offers more of the kinds of programs that will prepare you for life and work in the 21st century. Whether you're starting college, retooling your career, or want to learn for the sheer adventure, there's more for you to discover at Macomb. From the latest in technology to personal attention from first-rate professors, Macomb connects you to the advantages you need to succeed.

We are a commuter college with a campus life. There are student clubs to join, study trips to take, cultural programs to check out at the Performing Arts and Cultural Centers, and college athletic and other events at the Macomb Sports & Expo Center. Macomb creates opportunity and changes lives.

You can learn about our courses, programs, financial aid, counseling, tutoring, learning centers, libraries, and the bookstores through this catalog or on our website, but nothing beats one-on-one attention. College representatives are here to serve you so don't hesitate to ask for the help you need.

We are the college around the corner with a view of the world. Diversity in students and staff, courses and curriculums, and instructional delivery are among Macomb's greatest strengths.

We welcome you to Macomb and invite you to discover how Macomb Community College can make a difference in one life at a time—yours.

The Faculty and Staff of Macomb Community College

Macomb Community College

Mission Statement

Vision

Macomb will continue to be a leading edge community college and the community's preferred choice for lifelong learning, cultural enrichment, and community development opportunities.

Mission

As a publicly funded and community-based institution of higher education, Macomb Community College provides a comprehensive program of high-quality educational, enrichment, and economic development experiences designed to promote individual growth and social improvement.

Organizational Goals and Purposes

Macomb Community College endeavors to maintain open, affordable, and lifelong access to an integrated continuum of learner-centered educational opportunities, personal enrichment experiences, and community development programs, including:

- Transfer Education, designed to offer courses that parallel university curricula and prepare students successfully to pursue a baccalaureate degree.
- Career Preparation, designed to prepare and qualify students for immediate employment and ongoing success in the world of work.
- Learning Outreach, designed to provide alternative delivery systems, personalized options, and community-based learning opportunities.
- Advanced Studies, designed to enable students to complete baccalaureate degrees, graduate programs, and continuing professional education experiences through affiliations with colleges, universities, and professional associations.
- Student and Community Enrichment, designed to provide artistic, athletic, cultural, co-curricular and personal enrichment experiences, and related community development programs.
- Economic and Workforce Development, designed to deliver customized learning experiences, specialized business support services, and continuing education offerings that rapidly respond to business and community needs.
- Student Success Services, designed to improve academic achievement, persistence, and the attainment of educational goals.

Approved by the Board of Trustees

December 20, 2005

Board of Trustees

Macomb Community College Trustees are elected county-wide and serve six-year terms without pay. Their terms of office are alternated in a manner that guarantees continuity of membership of at least four trustees from year to year. Vacancies are filled, as they occur, by Board appointment from volunteers in the community. Board members elect their own officers.

The Board’s responsibilities include appointing a president, setting fiscal and operating policies, and making decisions that determine the long- and short-range direction of the College.



James F. Kelly
Chairperson



Christine Bonkowski
Vice Chairperson



Connie Bolanowski
Secretary



Roseanne DiMaria
Treasurer



Frank Cusumano
Trustee



Joseph DeSantis
Trustee



Nancy Falcone
Trustee

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Macomb Community College

General Information (listed alphabetically)

Admissions/Registration

Enrollment Services

Center Campus (CC)—Enrollment Office

Building G Room 110 (G110)

Phone: 586.445.7225

Email: enrollmentservices@macomb.edu

Website: www.macomb.edu

*Macomb Community College is an equal opportunity, equal access college with an open-door admission policy.**

** On the basis of its institutional philosophy and in compliance with Title IX of the Education Amendments of 1974 (PL 93-380), Macomb Community College does not discriminate in its programs or activities on the basis of sex, race, religion, nationality, age, or physical handicap.*

Who May Apply

Admission is open to any citizen or permanent resident of the United States. Students under 18 years of age must have a high school degree, GED, or be admitted to the College under the Dual Enrollment/Early Admit or Early College of Macomb (www.ecmacomb.org) programs. There are no admission requirements for non-credit students.

If you do not have a high school diploma or GED and are interested in obtaining one, please visit www.gedtestingservice.com.

How to Get Started:

Macomb *Easy Start 1–2–3

**PLEASE NOTE: Starting at Macomb is easy, but it will take more than one day to complete these steps*

1 Discover Online (At your own pace) You can always AskAnAdvisor (email/call/visit) if you have any questions during this step

Complete an Application

- Apply online at www.macomb.edu or complete an application for admission and submit to the Enrollment Office located in Building G at either campus.
 - Please request an official transcript from all Colleges previously attended be sent to the Enrollment Office at Macomb Community College.

Apply for Financial Aid

- Complete the online Free Application for Federal Student Aid at www.fafsa.gov. Macomb's School Code: 008906.
- The College participates in a variety of financial aid programs, including scholarships, grants, loans, and employment opportunities. For more information, please visit Macomb's Financial Aid website at www.mymacomb.edu/financialaid.

Activate My Macomb Account

- My Macomb is Macomb Community College's electronic student service site. Students may access My Macomb to register for classes, view their class schedule, access grades and transcripts, pay tuition, and access student information. The link to My Macomb is found in the top right corner of Macomb's website (www.macomb.edu). Select Activate My Macomb Account. Students must wait for their admission letter in order to activate My Macomb account.

Participate in New Student Orientation

- All students must complete online orientation and cannot do so until their My Macomb account is activated. It is self paced, and can be completed from any computer with Internet access. It will take approximately 30–45 minutes to complete. Click the New Student Orientation link under Applications on the My Macomb home page.
- Computers are available in the Student Services Labs located at Center Campus in Building H Room 108 and South Campus Building H Room 219.

Prepare for the Placement Test

- Students are strongly encouraged to prepare prior to placement testing.
- The Placement Test is not a pass/fail test, although results in writing, reading or math may impact the courses in which you can enroll.

2 Connect On-Campus (Approximately a half-day to complete the following) PLEASE NOTE: A valid driver's license/state ID is required

Meet with an Academic Advisor for "Starting at Macomb"

- Visit Counseling & Academic Advising located in Building H at either campus.

Obtain a Macomb OneCard

- Go to the Macomb OneCard Office to have your photo taken for your Macomb OneCard (student ID). Offices are located at Center Campus Building P Room 127 or South Campus Building K Room 251. Card will arrive by mail two weeks after you register for your first classes.

Take the Placement Test

- Testing is on campus and given on a walk-in basis. It will take approximately two hours to complete. Placement Testing is located at Center Campus Building H Room 113 or South Campus Building H Room 217.
- Results in writing, reading or math may impact the courses in which you can enroll.

Participate in a Course Planning Session

- Following placement testing, meet with a counselor to discuss your placement test results and determine your class options. Go to Center Campus Building H Room 103 or South Campus Building H Room 316.

3 Advance at Macomb Online or On-Campus (Could be completed directly after step 2)

Register for Classes

- Students can register online through My Macomb at www.macomb.edu. Click on "Current and Former Students" then click on "Registration."
- Be sure to carefully review the Terms & Conditions that you agree to at the time of registration.

Pay for Classes

- Tuition and fees must be paid at the time of registration or by the payment due date.
 - Pay online using check, MasterCard, Visa, or Discover.
 - Pay in person using cash, check, money order, MasterCard, Visa, or Discover at the Cashier's Office located at Center Campus Building G Room 131 or South Campus Building G Room 302.
 - Sponsored Billing authorizations can be submitted to Cashier's Offices, faxed to Financial Services Office at 586.445.7020, or e-mailed to sponsoredbilling@macomb.edu.

Acquire Books and Supplies

- Books, supplies, and other materials can be purchased or rented through the College bookstore or on our website. Bookstores are located at Center Campus Building P or South Campus Building K.
- Please bring picture ID and a WebAdvisor printout of your class schedule noted as "My Class Schedule/Registration Statement" with you to the bookstore.

Complete Online Learning Requirements

- ANGEL is Macomb's Learning Management System that provides Web access to your grades, course syllabus, and materials.
- Go directly to ANGEL at <https://macomb.angellearning.com>, or click ANGEL from My Macomb for access.
 - Complete the self-paced Introduction to ANGEL for on-ground classes.
 - Complete the self-paced Introduction to Online Learning for online and hybrid classes.

Former Macomb Students

If you have missed more than two years, you must complete a Student Update Form.

Contact the Enrollment Office to update your address and student record.

High School Early Admission Students

Admissions/Registration

Office of Admissions and Outreach

Center Campus (CC)—Enrollment Office

Building G Room 110 (G110)

Phone: 586.498.4008

Email: earlyadmit@macomb.edu

South Campus (SC)—Enrollment Office

Building G Room 301 (G301)

The High School Early Admission program allows high school students in grades 9-12 the opportunity to discover the college experience at Macomb Community College. Students in grades 9-10 and home-schooled students must meet with the Manager of Admissions, Outreach and Early Admit programs prior to applying. The Early Admission process begins with an agreement between the student, his or her parent, and the student's authorized high school official. High school students may be considered for college course offerings in which they meet any prerequisite and/or placement test requirements.

To apply, the following steps must be completed to enroll in courses as an Early Admission student:

1. Submit a completed Early Admission Application/Update Form to the Enrollment Services office. This application is valid for one semester. Returning Early Admit students must submit the Early Admission Application/Update Form for each additional semester they wish to attend as an Early Admit student.

**Students applying under the Postsecondary Enrollment Options Act (Dual Enrollment) must provide a Dual Enrollment Authorization letter from their school district each semester to Macomb's Financial Services office specifying semester and courses approved for payment under Public Act 160.*

2. As noted in the Macomb Easy Start 1-2-3, the applicant must participate in New Student Orientation, and take the Placement Test. Early Admission students are not required to see a counselor or academic advisor.

To schedule an appointment or for more information, contact the Office of Admissions & Outreach at 586.498.4008.

NOTE: Students classified as "Early Admit" are not eligible to receive financial aid funds to attend Macomb Community College, based on federal guidelines.

Guest Students

Enrollment Services

Center Campus (CC)—Enrollment Office

Building G Room 110 (G110)

Phone: 586.445.7225

Email: enrollmentservices@macomb.edu

Website: www.macomb.edu

South Campus (SC)—Enrollment Office

Building G Room 301 (G301)

Students who attend another college or who graduated from high school and are awaiting the start of the next term at their "home" institution may be admitted to Macomb Community College as a guest student.

Macomb's academic course policy requires the successful completion of prerequisite coursework for all students including guest students. Even though a counselor or academic advisor at your "home" institution

may have approved registration in certain courses, the prerequisite requirements for Macomb courses will be enforced. For more information regarding the specific prerequisites for any course, please refer to the College website or Catalog.

The following is required:

- Macomb’s Application for Admission indicating you will be a guest student or Michigan Uniform Guest Application Form. For students using the Michigan Uniform Undergraduate Guest Application form to attend Macomb Community College, certification with College seal by the student’s home institution is not required. The Guest Application Status is valid for one term only.
 - Proof of Residency—to be eligible for the resident tuition rate (refer to the Schedule of Classes for Residency Policy).
 - Mail or submit completed guest application to Enrollment Services.
 - New Student Orientation found on My Macomb.
1. Guest applications are available at the student’s home institution, Macomb’s Enrollment Offices (located in G-Building at either campus) or online at www.macomb.edu.
 2. Macomb reserves the right to cancel classes due to insufficient enrollment. Class cancellations are not determined until the end of on-campus registration. Every attempt will be made to contact students by telephone whose classes have been canceled. The telephone number indicated on the application form is the one used to contact you.
 3. Before registering, guest students should check with their advisor/counselor at their home institution to be certain that Macomb Community College course(s) will transfer to their home institution.
 4. Guest students are exempt from placement testing as part of the Guest Admissions process. If attempting a course that requires “placement” as the only prerequisite, this will be waived; however, to satisfy course prerequisites in some instances, completing placement testing may be required. This applies most often to mathematics and English courses. Course prerequisites will apply for guest students as follows:
 - If attempting a course that lists another “specific course” as prerequisite, that specific course must be completed with a grade of “C” or better prior to attempting the desired course.
 - If attempting a course that lists either “placement” or a “specific course” as prerequisite, then an option of providing documentation to validate that the specific course has been completed with a grade of “C” or better or attaining the required score on the placement test can be used to satisfy the prerequisite requirement. Acceptable documents include official transcripts issued to the student, unofficial transcripts or grade reports. If appropriate documentation is not available, the student may take the Macomb placement test to determine academic preparedness. Macomb reserves the right to determine if a particular course satisfies the prerequisite requirement.
 - The College encourages the guest student to work directly with staff in Counseling, Enrollment, or the appropriate instructional office prior to registration in sections of course(s) as the College is committed to insuring that the registration process is handled in a timely manner.

NOTE: Guest students have the option of mobility in mathematics and English courses.

5. Guest students are not registered in their course(s) until they complete the registration process (see the Schedule of Classes for dates and times).
6. Transcripts are not automatically sent to the guest student’s home institution. The guest student must submit a completed Transcript Request Form, or request a transcript through My Macomb WebAdvisor at the end of the semester if they wish to have their transcript sent.

NOTE: Students classified as “guest” are not eligible to receive financial aid funds to attend Macomb Community College, based on federal guidelines.

Foreign Students and F1 Visa International Students

South Campus (SC)—Enrollment Office

Building G Room 301 (G301)

Phone: 586.445.7225

Email: F1student@macomb.edu

Website: www.macomb.edu (keyword search: international student)

Foreign Students

Applicants who are in the United States on a non-immigrant visa (except B Visitor visas and F1 Student visas) need to only show that their visa is current and do not need additional paperwork for admission.

(B Visitor visa holders cannot register for credit classes. They may only take non-credit classes.)

All visa holders except those listed below will pay the Out-of-State/Foreign tuition rate.

The following visa holders may be entitled to Resident or In-State tuition:

- Refugees and Asylees (I-94 card must designate “Refugee” or “Asylee”)
- A, E (primary), G, and I visa holders.

Applicants who hold non-immigrant visas and wish to change their status to an F1 student visa must contact the South Campus Enrollment Office via email at F1student@macomb.edu. These applicants must take Macomb’s placement test and place into at least EAPP-1300 (English for Academic Purposes- Integrated Skills and Composition 3). See *English for Speakers of Other Languages* in this catalog for more information.

F1 Visa International Students

Applicants who currently reside in their home country and wish to attend Macomb Community College on an F1 student visa must meet the College’s minimum English language proficiency requirement to be considered for admission. Prospective students must supply certification of English language proficiency by taking the TOEFL test in their home country and having test scores sent to Macomb. Go to www.ets.org/toefl for further information. The College accepts a TOEFL score of 61 or higher on the Internet-based test.

Prospective students must also be prepared to submit:

- An official statement of financial solvency for the student and sponsor while in the United States, an Affidavit of Support, and official bank statements, translated in US dollars, from the sponsor.
- Additional legal documents for a spouse and/or dependents that will be traveling with the applicant including a marriage license and birth certificate translated in English.

For additional requirements and forms contact the Enrollment Office at South Campus via email at f1student@macomb.edu or online www.macomb.edu (keyword search: international student).

Students who are already F1 visa holders wishing to transfer to Macomb from another school in the United States must also meet the College’s English language requirement by taking the placement test and placing into at least EAPP 1300 or provide current TOEFL scores with the minimum requirement of 61 on the Internet-based test.

All students on F1 Student visas will pay the Out of State/Foreign tuition rate.

College employees are not qualified or permitted by law to provide advice with respect to any legal matter including immigration and naturalization procedure. Please consult your attorney.

Military Service-Early Release

Military personnel who are considering an early release from service should complete an Application for Admission before requesting a Letter of Early Release.

Selective Admission Applicants

Center Campus (CC) Enrollment Office
Building G Room 110 (G110)

DEADLINE: February 15

To be considered for admission to complete the Associate of Applied Science degree in Health Information Technology, Nursing, Occupational Therapy Assistant, Physical Therapist Assistant, Respiratory Therapy, Surgical Technology and/or Veterinary Technician programs, applicants need to apply and be accepted into the program. Applicants are required to complete all application requirements. All appropriate documentation must be on file at the Center Campus Enrollment Office, G110, by the February 15 application deadline. In some instances, required testing must occur well in advance of the application deadline. The Selective Admission Application form and supporting documentation are accepted up to one year in advance of the application deadline. For additional information, contact the Enrollment Office.

Academic Mobility

All students taking courses in English composition, Mathematics, Reading and English for Academic Purposes (EAPP) are required to meet the established course prerequisites. Students often meet prerequisites by taking a placement test.

In order to ensure that students are properly placed for success, the College has a “mobility period” in place. Mobility occurs most often in, but is not limited to, English and Math. Please see below specific information regarding these courses.

Mathematics: There is no upward mobility in mathematics. Downward mobility within mathematics is a student decision that does not require evaluation or approval by an instructor. Students who elect to move to a class that is a lower level must drop their original class, find an open section of the lower level class and enroll. If room is not available or if the “last add” date of the new class has passed, the student must contact the math department to obtain permission to execute downward mobility.

Students who find themselves enrolled in a class that proves to be too difficult for their skills may move to another course within 10 business days from the start of class including the first day.

English: A student may initiate a mobility move to a lower level class during the mobility period. The instructor may recommend a mobility move to a lower level class during the same period. If such a recommendation is made, and approved by the Associate Dean, this recommendation becomes a requirement. If a suitable lower level class cannot be found, the English Department will request a payment voucher for the student. Only the instructor can initiate a mobility move to an upper level English class for a student.

Students taking English who find themselves enrolled in a class that proves to be too difficult or too basic for their skills may move to another course within 15 business days.

ANGEL

ANGEL Login: <https://macomb.angelllearning.com>

ANGEL provides a range of interactive tools to facilitate communication, collaborative learning, assessment and feedback for students. ANGEL may also be used to enhance classroom activities.

Online Sections

Online learning delivers quality education that is flexible, convenient and accessible. Students access course information and turn in assignments from any computer with an Internet connection.

Athletics

South Campus (SC)

Sports & Expo Center (Building P)

Phone: 586.445.7512

Website: www.macomb.edu (keyword search: Athletics)

The goal of the Macomb Community College Department of Athletics is to instill in all of its student athletes the drive toward commitment, excellence, dedication and perseverance both on and off the field. Macomb Community College is a member of the National Junior College Athletic Association (NJCAA Region XII) and the Michigan Community College Athletic Association (MCCAA). Through these organizations, Macomb competes in men's baseball, basketball, cross country, women's basketball, softball, cross country and volleyball. In Macomb's 48 years of athletic heritage, the Monarchs have won NJCAA national championships, regional titles, MCCAA titles, and conference titles in a variety of intercollegiate sports, instilling a sense of pride and tradition in each of its over 5,000 athletic alumni.

Bookstore

Center Campus (CC)

Building P Room 117 (P117)

Phone: 586.286.2093

Email: mcccenter@bkstr.com

Website: www.macomb.edu (keyword search: bookstore)

South Campus (SC)

Building K Room 240 (K240)

Phone: 586.445.7385

Email: mccsouth@bkstr.com

The College bookstores are located in the Student Community Centers at both Center and South Campus. The bookstores stock required and recommended textbooks, reference materials, supplies, and College sportswear. Special orders for books are made upon request. Textbooks may be ordered online. Rental of many textbooks is also available.

Book Buyback

The Bookstore buys back books daily during regular business hours. During the last week of the fall and winter semesters, the bookstores are open extended hours for textbook buyback and rental returns. Textbooks not needed by the bookstores may be bought back depending on national market value.

Campus Accessibility

The College buildings are equipped with special runways, elevators, handrails, and specially constructed facilities to make student movement and use easier. For access to handicapped parking, please visit your local Secretary of State to obtain a handicapped parking placard.

Career Services

Center Campus (CC)

Building H Room 109 (H109)

Phone: 586.445.7321

Email: careerservices@macomb.edu

Website: www.macomb.edu (keyword search: Career Services)

South Campus (SC)

Building S Room 147 (S147)

Macomb Community College Career Services offers current and former students, alumni and employers valuable resources, all in an accessible and customer-friendly environment. Resources available include career and college information, informational workshops, job seeker preparation, and career exploration events. Career Services provides a variety of job-seeker services, including a comprehensive employment database, MacombCareerLink (<http://macombcareerlink.experience.com>), as well as one-on-one resume

critiquing, interview preparation and professional networking guidance. Career Services provides assistance with the enhancement of career goals including: job shadowing, career mentoring, informational interviews, internships and cooperative education experiences.

Cashier's Office & Financial Services

Center Campus (CC)

South Campus (SC)

Building G Room 131 (G131)

Building G Room 302 (G302)

Phone: 586.445.7336

Email: regpay@macomb.edu

The Office of Financial Services is the accounting office for the College. Student services provided through the Cashier's Offices, Financial Services Office, or via My Macomb WebAdvisor include:

- Billing of Tuition and Fees
- Receipt of Payments
- Student Refunds
- 1098-T Tuition Tax Statements

All students are billed for their classes upon registration and receive notification of the amount due and the payment due date on their My Macomb WebAdvisor My Class Schedule / Registration Statement. Tuition and fees are due by the published payment due date for that term or on the day of registration thereafter. The College reserves the right to drop students for non-payment. For full terms and conditions, see <https://my.macomb.edu/payment/Pages/Tuition%20and%20Payment.aspx>. Macomb accepts cash, checks, money orders, MasterCard, Visa, Discover, and Sponsored Billing authorizations in person at the Cashier's Offices. Payments can be made online using My Macomb WebAdvisor with MasterCard, Visa and Discover, or check. Cashier's Offices are located at both campuses in G-Building. Drop boxes for checks are located at the Cashier's Offices during regular business hours.

Delinquent Accounts

Students account balances, dishonored checks, unreturned materials, library fines, etc. must be paid in full by the due date on the invoice or statement. Failure to pay will result in a "HOLD" on all records and future registrations. Delinquent accounts are turned over to a collection agency and will be assessed a delinquent account fee and reported to credit bureaus. Any type of refund may be applied as payment to reduce or pay off the debt.

Computing Resources for Learning

Acceptable Use Policy

The Board of Trustees of Macomb Community College have adopted a policy designed to guide students, faculty and staff in the acceptable use of computer systems, networks, and other information technology resources at Macomb Community College. It is suggested that all students, faculty and staff familiarize themselves with this policy, which is available on the College's website at www.macomb.edu, keyword "Acceptable Use."

Over 2,000 computers are available for student use in the various computer labs at Macomb. These computers are used by students in a variety of courses as well as for other student purposes. Classroom labs are used primarily for classroom instruction and are located in most buildings on all campuses. Open labs are provided so that students can complete their assignments around their personal and class schedules. Students must have an access card to use the open labs. Lab assistants are available to assist students with equipment operation.

Open Computer Labs are located at:

Center Campus (CC)

South Campus (SC)

Building E Room 102 (E102)

Building J Room 127 (J127)

Website: www.macomb.edu (keyword search: computer labs)

On-Campus Wireless Resources

Free wireless Internet service is available on all campuses.

Academic Assistance/Learning Center Computer Labs

The Academic Assistance/Learning Centers provide computer labs for students to use for schoolwork. There is course related software; tutorials in reading, writing, and mathematics; and word processing programs to assist in writing papers.

Academic Assistance/Learning Center Computer Labs are located in each of the campus libraries:

Center Campus (CC)

South Campus (SC)

Building C Room 116 (C116)

Building J Room 305 (J305)

Locations, hours, and procedures are posted online at www.macomb.edu (keyword search: computer labs)

Confidentiality of Student Records

I. INTRODUCTION

Macomb Community College recognizes the importance of maintaining records for each individual student, which present authentic evidence of the events and actions, which both contribute to and confirm the student's educational progress; and to facilitate the intelligent and purposeful direction necessary to the achievement of the educational goals of the student in a college setting.

State and federal laws govern the release and disclosure of student records maintained by the College. It is the purpose of these guidelines to provide reasonable interpretations of the laws as presently stated and to protect the student's right of privacy. These guidelines have a two-fold purpose:

- A. To protect a student's right to the privacy of information the College has concerning the student, and
- B. To provide guidelines for release or disclosure of such information within the meaning of federal and state law and as may be necessary for the effective functioning of the College.

II. Notification to Students of Rights Under the Family Educational Rights and Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) afford students certain rights related to their educational records. They are:

- A. The right to inspect and review the education records within 45 days of the day the College receives a request for access. The student must submit to the Director of Enrollment Services/Registrar a written request that identifies the record(s) to be inspected. The College will make arrangements for access and notify the student of the time and place where the record(s) may be inspected. If the College official to whom the request was submitted does not maintain the record(s), that official shall advise the student of the correct official to whom the request should be addressed.

- B. The right to request an amendment to the student’s education record(s) the student believes is inaccurate or misleading. The student may ask the College to amend a record believed to be inaccurate or misleading. The student should write the College official responsible for the record, clearly identifying the part of the record to be changed, and specify why it is inaccurate or misleading. If the College decides not to amend the record as requested by the student, the College will notify the student of the decision and advise the student of the right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures are outlined below under Section VII, Requests to Amend an Educational Record - Hearing Procedures, will be provided to the student when notified of the right to a hearing.
- C. The right to consent to disclosures of personally identifiable information contained in the student’s education record, except to the extent that FERPA authorizes disclosure without consent. One exception, which permits disclosure without consent, is disclosure to school officials with legitimate educational interests. A school official is a person employed by the College in an administrative, supervisory, academic, or support staff position (including law enforcement unit and health staff); a person or company with whom the College has contracted (such as an attorney, auditor, or collection agency); a person serving on the Board of Trustees; or a student serving on an official committee, such as disciplinary or grievance committee, or assisting another school official in performing his/her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill her/his professional responsibility. Upon request, the College discloses education records without consent to officials of another school to facilitate the student’s transfer and enrollment.
- D. The right to file a complaint with the United States Department of Education concerning alleged failures by Macomb Community College to comply with the requirements of FERPA. The complaint can be sent to the following office that administers FERPA:

*Family Policy Compliance Office
U.S. Department of Education
600 Independence Avenue, SW
Washington, DC 20202-4605*

III. Directory Information as Defined by Macomb Community College

Macomb Community College defines “directory information” as:

- A. A student’s name,
- B. Major field of study,
- C. Participation in officially recognized activities and sports,
- D. Weight and height of members of athletic teams,
- E. Dates of attendance,
- F. Degrees and awards received,
- G. Most recent education agency or institution attended.

The College may include a student’s directory information in College publications or otherwise release such information to the public without a student’s consent unless a student has informed the College in writing that his or her directory information is confidential. This notice must be sent or delivered in person to the Office of Enrollment Services/Registrar, Macomb Community College, 14500 E. 12 Mile Road, Warren, MI 48088-3896.

An oral or written request for a student’s directory must be directed to the Office of Enrollment Services. Enrollment Services will respond as time permits. Enrollment Services reserves the right to deny any request for directory information or to charge a fee for information provided in response to a request.

IV. Solomon Amendment Directory Information

Effective March 29, 1997, schools are required to provide the Department of Defense access to directory information upon request. A student may request in writing to withhold the release of any or all of this information to the Department of Defense. Such a request should be sent to the Office of Enrollment Services/Registrar, Macomb Community College, 14500 E. 12 Mile Road, Warren, MI 48088-3896.

Under the Solomon Amendment, the Department of Defense is entitled to “Student Recruitment Information” or “Solomon Information” that consists of the following, even if that info is broader than our “directory information:”

1. Name
2. Address
3. Telephone Number
4. Age
5. Place of Birth
6. Level of Education
7. Academic Major
8. Degrees Received
9. Educational institution in which the student was most recently enrolled

V. Privacy Act Notice

Pursuant to the Privacy Act of 1974, students are hereby notified that disclosure of their social security numbers is mandatory for registration at Macomb Community College. Social security numbers are used: (1) to verify the identity of students, (2) to keep, maintain and access the records of students, and (3) for purposes of student financial aid and other benefits available under law. The College is required to report the social security numbers of its students to the Internal Revenue Service pursuant to the Taxpayer Relief Act of 1997.

As part of Macomb Community College’s instructional program improvement efforts, and to meet the requirements of the Carl D. Perkins Vocational and Technical Education Act, Sect 113 and the Workforce Investment Act of 1998, Section 122, Macomb Community College will use the social security numbers of its students to compile certain data for the purpose of instructional program improvement and reporting requirements for the Carl D. Perkins Vocational and Technical Education Act, Section 113 and the Workforce Investment Act of 1998, Section 122.

VI. Family Educational Rights and Privacy Act Regulations Governing Disclosure of Confidential Records

A. Disclosure of Confidential Information to the Student

A student may inspect, review or obtain a photocopy of his or her educational record by submitting a written request, signed by the student, to the Director of Enrollment Services/Registrar. The Director of Enrollment Services/Registrar will arrange a time and date for the student to view the record, or provide the student with a photocopy of the record requested within 45 days after receiving the request. The College may permit a student to inspect, review, or obtain a photocopy of his or her educational record upon receipt of that student’s in-person, oral request. However, a student must, if requested, provide photo identification, which may be photocopied and kept in the student’s file, before reviewing or receiving a copy of his or her educational record.

Students may request photocopies of their records at a cost of \$5.00 for transcripts and 25 cents a page for other documents.

B. Disclosure of Confidential Information to Third Parties

Except to the extent FERPA authorizes disclosure without consent, personally identifiable information contained in a student's educational record will be disclosed to third parties only with prior written consent of the student. The consent must (1) identify the individual, agency, or classes of individuals or agencies to whom the information is to be made available; and (2) specify the records to be released.

FERPA authorizes the disclosure of personally identifiable information contained in a student educational record without the consent of the student under various circumstances. The College may disclose such information: (1) to other Macomb Community College officials, including teachers, whom the College has determined to have legitimate educational interests; (2) to officials of another school where a student seeks or intends to enroll; (3) to the Comptroller General of the United States, the Secretary of Education, or state and local educational authorities; (4) in connection with financial aid for which the student has applied or which the student has received; (5) to organizations conducting studies for, or on behalf of, educational agencies or institutions to develop, validate, or administer predictive tests; administer student aid programs; or improve instruction; (6) to accrediting organizations to carry out their accrediting functions; (7) to parents of a dependent student, as defined in Section 152 of the Internal Revenue Code of 1954; (8) to comply with a judicial order or lawfully issued subpoena; (9) to persons in connection with a health or safety emergency; (10) information designated "directory information;" (11) to an alleged victim of any crime of violence of any disciplinary proceeding conducted by an institution of postsecondary education against the alleged perpetrator of that crime.

C. Parental Access to Student Records

A parent does not automatically have access to their child's student records. The Guidelines for Postsecondary Institutions for Implementation of the Family Education Rights and Privacy Act of 1974 as amended—revised edition 1995, states: "At the postsecondary level, parents have no inherent rights to inspect a student's education records." As a general rule a student must consent to the release of his or her education records. In the event that a student is a legal dependent, as defined by the Internal Revenue Code, the parent may assert the right to review the education records, but only upon presentation of a copy of the appropriate IRS form (e.g., most recent tax return), documenting dependent status. The College may keep a photocopy of the IRS form in the student file.

D. Release of Information Form

Any person requesting to review or copy student education records must submit a "Release of Information Form" signed by the student. The form may be obtained from the Office of Enrollment Services/Registrar or may be printed from the Macomb Community College website www.macomb.edu. As with all requests to review records, any person requesting access to student records must provide photo identification that may be photocopied and kept in the student's file.

E. Statement of Safeguarding Student Records

All Macomb Community College employees are required to protect the privacy of student records and abide by the following principles:

- College information systems shall contain only that student data necessary to fulfill the College's mission.
- Safeguarding of student data shall be a responsibility of each staff member having knowledge of such data.
- Due care shall be exercised to protect student data from unauthorized use, disclosure, alteration or destruction.

- Applicable federal and state laws and College policies and procedures concerning storage, retention, use, release, transportation, and destruction of student data shall be followed.
- College procedures shall be followed in reporting any breach of security or compromise of safeguards.
- This statement of principles is applicable to all areas of the College and must be followed by all persons dealing with such information.
- Faculty and staff requiring computerized student data for official College business will be provided access. The term “access” means to read or review student data. It does not include the ability to create or modify data.
- Certain areas of the College that store and maintain student data, whether computerized or not, may have individual guidelines which will supplement, but not supplant, this statement of principles.
- Any Macomb Community College employee engaging in unauthorized use, disclosure, alteration or destruction of student data in violation of this statement of principles shall be subject to appropriate disciplinary action, including dismissal.

VII. Request to Amend an Educational Record-Hearing Procedures

If a student is denied access to his/her record and is unable to obtain correction, or if he/she contests the factual accuracy of his/her record, he/she may request a hearing. If, as a result of the hearing, it is determined that the record is factually inaccurate, it shall be amended and the inaccurate material either destroyed (if this does not violate audit responsibilities for record keeping) or so annotated as to indicate nature and source of error and date of correction.

- A. If a student challenges the content of the record, Macomb Community College will attempt to settle such a dispute through an informal meeting with the Director of Enrollment Services/Registrar, the Dean of Student Success, and the eligible student within 10 days.
- B. If the dispute is not resolved by the Dean of Student Success, a second hearing may be held with the Vice President, Student Services. The eligible student shall be afforded a full and fair opportunity to present evidence relevant to the issues raised and the decision shall be rendered in writing within 45 days after the conclusion of the hearing with the Vice President, Student Services.

A student who desires a procedural hearing to challenge the content of the education record shall address the request in writing to the Director of Enrollment Services/Registrar. The written request must identify in specific terms the information the student believes to be inaccurate, misleading or otherwise violates the privacy of the student; state the reason or reasons for challenging the portion of the record identified; and state the remedy sought, which may be either the correction or deletion of the information challenged. The substantive judgment of a faculty member about a student’s work, expressed in grades assigned in a course and other evaluation of a student’s work, is not within the scope of such hearings. Hearings shall be limited to the factual accuracy of the record.

VIII. Information Maintained by Macomb Community College

OFFICE & INFORMATION	RESPONSIBLE OFFICIAL
ADMISSIONS & OUTREACH Admission Applications Early Admission & Early College of Macomb Recruitment Efforts	Director, Admissions & Outreach
ARTICULATION AND TRANSFER Transfer Out Credit Equivalencies Official College-to-College Articulation Agreements Transfer Plans	Dean, University Relations
CAREER SERVICES Employer Information Employment Resource Materials MacombCareerLink Online Job Database	Dean of Student Success
CASHIER'S OFFICE & FINANCIAL SERVICES Billing and Fee Payment Records Student Account Information 1098-T Tax Forms Student Refund Information Student Payroll Records	Director, Financial Services
COLLEGE POLICE Citations or Violation Notices Incident Reports	Captain, College Police
COUNSELING & ACADEMIC ADVISING OFFICE Achievement Records Career Preparation Career Test Scores Career Testing Referral Form Counseling Data Sheet Course Planning Summary Department Referral Form Plan of Action Program Plans Student Information Sheet	Dean of Student Success
ENROLLMENT Certification Data High School Transcript Holds on Student's Record International Student Records Other (College Transcripts) Permanent Record Registration Social Security Certification Data Transfer-In Credit Equivalencies Veterans Administration Waivers for Graduation Requirements Web-Reg	Director, Enrollment Services/Registrar

OFFICE & INFORMATION	RESPONSIBLE OFFICIAL
FINANCIAL AID Application for Financial Aid Financial Aid Over Payments Financial Aid Agency Forms Financial Aid Transcripts Financial Aid Status Notice of Financial Aid Award Student Aid Reports Student Loan Information Student Default Status	Director, Financial Aid
LIBRARY & INFORMATION RESOURCES Records of Overdue, Fines, Lost or Damaged Materials	Dean of Learning Resources & Libraries
PLACEMENT TESTING CLEP Participants COMPASS Student Advising Report Program Credit-By-Exam Test Records	Dean of Student Success
PUBLIC SERVICE INSTITUTE Billing Information Class Rosters Registrations	Director, Public Service Institute
SPECIAL SERVICES ASSESSMENT Counselor/Staff Summaries Handicapped Certification Referral Forms for Assistance Services Documentation Student Information Forms Student Plan of Work Tutoring Usage Record	Dean of Student Success
WORKFORCE & CONTINUING EDUCATION Business & Information Technology Engineering & Advanced Technology Health & Public Service	Directors, Workforce & Continuing Education

(REV. 3/2014)

Counseling & Academic Advising Services

Center Campus (CC)

Building H Room 103 (H103)

Phone: 586.286.2228

Email: answer@macomb.edu

Website: www.macomb.edu (keyword search: counseling advising)

South Campus (SC)

Building H Room 316 (H316)

Phone: 586.445.7211

Counseling and Academic Advising Services provides a variety of services to help make informed choices about college. Please visit the College's website for information on current services, office hours, resources, and general information (keyword search: counseling advising).

Counseling

A counselor is a faculty member who is a Licensed Professional Counselor and is uniquely trained to work with you individually or in groups. Counselors can assist you with decisions that facilitate academic, career and personal growth. They can also help you establish priorities, adjust to college life, and learn skills that will optimize your academic and personal effectiveness. Most counseling services are provided on an appointment basis, with some walk-in assistance available.

Academic Advising

Academic Advising faculty provide you with information needed to proceed effectively through your academic program once you have made a solid choice of program, major, and/or transfer institution. Advisors are available on a walk-in basis.

Special Services

Center Campus (CC)	South Campus (SC)
Building H Room 103 (H103)	Building H Room 316 (H316)
Phone: 586.286.2237	Phone: 586.445.7420
TDD: 586.286.2238	TDD: 586.445.7498
Fax: 586.286.2295	Fax: 586.498.4033
Email: answer@macomb.edu	
Website: www.macomb.edu (keyword search: special services)	

The Special Services Licensed Professional Counselors are faculty who work with students who need special assistance to succeed in college due to a physical disability, learning disability, insufficient academic skills or language barrier.

This unit works with each person as an individual, to provide resources, services and accommodations that can assist that individual in achieving success at the postsecondary level. Special Services also works with students to make them aware of career options and to develop a personalized education plan. In compliance with Section 504 of the Rehabilitation Act of 1973 and the American Disability Act of 1991, academic accommodations will be provided to students who have a documented disability.

Student Eligibility for Special Services

If any of the following apply, you may be eligible for the Special Services Program:

- Are referred by faculty or outside agencies
- Have any documented disability that may present obstacles to success in the college classroom
- Have a below-average grade point average
- Have limited English proficiency

Please visit the Special Services section of the College website for information on current services, workshops, office hours and resources.

Special Populations Program

South Campus (SC)
Building H Room 311-6 (H311-6)
Phone: 586.445.7003
Fax: 586.498.4033
Email: answer@macomb.edu
Website: www.macomb.edu (keyword search: special populations)

If you are a single parent, a displaced homemaker, or enrolled in a program that has been determined nontraditional for your gender, you may be eligible for assistance with:

- Navigating transitions (Choices, Focus, Direction)
- Improving self-confidence
- Exploring personal interests, abilities, and college readiness
- Building employment competencies
- Individual and group counseling
- Planning your career
- Advocacy to College offices and community support agencies
- Financial assistance with college expenses

You may initiate your own use of these services, or you may be referred by College staff, faculty, area high school counselors, social agency personnel or other professionals. See the College website noted above for information on current services, workshops, office hours and resources.

English for Speakers of Other Languages (ESL)

Website: www.macomb.edu (keyword search: ESL)

Macomb offers a variety of English classes designed to improve the skills of nonnative speakers in listening, reading, speaking, and writing. All students whose first language is not English must take the COMPASS/ESL placement test. This test includes grammar, reading, and listening. This test will place students in credit or non-credit courses.

Credit courses are offered through the English for Academic Purposes area in the Division of Arts and Sciences. Their purpose is to prepare nonnative speakers for the rigors of college-level English composition courses and other subjects that require competence in academic English skills.

Workforce & Continuing Education offers non-credit courses designed for people with minimal English language skills. Course offerings include teaching practical skills, such as completing a job application, and basic language courses that prepare beginning language learners for the English for Academic Purposes (EAPP) credit courses.

Equal Opportunity/Affirmative Action

Macomb Community College, as an equal opportunity and affirmative action employer, complies with all applicable state and federal laws regarding anti-discrimination, equal opportunity and affirmative action.

Macomb Community College believes that no person should be denied the opportunity to attain their fullest potential on the basis of unlawful discrimination. Macomb Community College has established a goal to build a community that respects and welcomes all persons and provides equal opportunity and access to education, programs, employment, facilities and services to the public in a manner consistent with state and federal law. In furtherance of that goal, it is the policy of Macomb Community College that unlawful discrimination against any person on the basis of race, sex (including sexual harassment), sexual orientation, age, height, weight, disability, color, religion, creed, national origin or ancestry, marital status, familial status, veteran status, or any other characteristic protected by state or federal law, is prohibited.

Through the programs set forth in its Affirmative Action Plan, together with the resolution adopted by the Board of Trustees of the College on June 9, 1981, directing the Administration to take certain specific affirmative action to effect full equal employment opportunity as outlined in the resolution, the College undertakes to comply fully with all applicable federal, state, and local laws relating to equal employment opportunity, affirmative action, and non-discrimination in public services. *(Rev. 6/2011)*

Statement of Assurance

It is the policy of Macomb Community College to comply with the provisions of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the American with Disabilities Act of 1990, the Age Discrimination Act of 1975, the Age Discrimination in Employment Act of 1967, the Elliot-Larsen Civil Rights Act, and the Persons with Disabilities Civil Rights Act, as well as all requirements imposed pursuant thereto, to the end that no person will be subjected to discrimination in employment or excluded from participation in, or denied the benefits of, any College program or service on the ground of race, color, national origin, sex, disability, or age.

Complaint Procedure

Any person who believes that Macomb Community College or an employee of Macomb Community College has violated the provisions of these acts may submit a written complaint to the appropriate Civil Rights Coordinator at the address indicated:

- **For student complaints:** Dean of Student Success, Macomb Community College, 14500 E. Twelve Mile Road, Warren, Michigan 48088, 586.445.7408.
- **For employment complaints:** Vice President of Human Resources, Macomb Community College, 14500 E. Twelve Mile Road, Warren, Michigan 48088, 586.445.7898.

Upon receipt of the complaint, the appropriate Civil Rights Coordinator will discuss the complaint with the complainant and conduct an investigation that is appropriate under the circumstances. After conducting an investigation, the Civil Rights Coordinator shall issue a written determination to the complainant.

Nothing in this statement of procedure shall prevent a person who believes a violation has occurred from filing a complaint with Michigan Department of Civil Rights, 110 West Michigan Avenue, Suite 800, Lansing, Michigan 48913, or to the Office for Civil Rights, U.S. Department of Education, Washington, D.C. 20202.

Faculty & Staff Credentials

Credential information for all staff and faculty may be viewed at www.macomb.edu under About Macomb.

Financial Aid & Scholarships

Center Campus (CC)

South Campus (SC)

Building G Room 130 (G130)

Building H Room 305 (H305)

Phone: 586.445.7228

Email: finaid@macomb.edu

Website: www.macomb.edu (keyword search: financial aid)

Free Application for Federal Student Aid (FAFSA): www.fafsa.gov

Private Scholarships: <https://macomb.academicworks.com/>

Macomb Community College participates in a variety of financial aid programs. These programs are available to students pursuing a degree, certificate or transfer program. Funds are available from federal, state, institutional, and private sources.

Types of Financial Aid

There are three major types of financial aid. They include the following:

1. **Grants/Scholarships:** These are forms of “gift aid” that do not require repayment. Grants are typically based on financial need; scholarships are both need and non-need based.

2. **Loans:** Loans are forms of aid that require repayment after the student completes his/her educational program or drops below half-time (less than 6 credit hours). Educational loans offer reasonable interest rates and repayment may be deferred until after graduation or withdrawal from classes.
3. **Work Study:** Part-time work opportunities are available to students who demonstrate financial need. Students are placed either on-campus or off-campus (in community service-related employment). Students are expected to use their earnings from work-study programs to assist with their educational expenses.

Factors considered in the types of aid awarded to the student are the financial need of the student, enrollment status, and amount of available funds.

Students must complete the following eligibility requirements for financial aid consideration:

- Be admitted to Macomb Community College. Submit the Application for Admission as soon as possible. A student cannot be reviewed for financial aid eligibility until the admission requirements are completed.
- Have a high school diploma or a GED to be eligible for financial aid.
- File the Free Application for Federal Student Aid (FAFSA). This is the core application document to apply for aid from all sources, including student loans. This form can be filed on the web at www.fafsa.gov. Students must be sure to release the data on their FAFSA to Macomb Community College, Federal Code 008906. This code is used for all campuses.
- Enroll in an eligible degree, certificate, or transfer program to receive financial aid. Students should confirm with the Enrollment Office that college records reflect enrollment in a degree, certificate, or transfer program.
- Maintain satisfactory academic progress toward a degree or certificate. There are three criteria in the Macomb Community College satisfactory progress policy:
 - Maintain a cumulative completion rate of 67%
 - Maintain a cumulative 2.0 or higher grade point average
 - Not exceed 150% of attempted credit hours required for the student's program

Financial Responsibility of Financial Aid Students

The student must drop classes within the 100% refund period to avoid responsibility of tuition and fees if award requirements (attendance, completion, minimum enrollment status, etc.) cannot be met or cannot pay remaining balance after financial aid. The student may still be responsible for repayment of bookstore purchases, refunds or other costs no longer covered by reductions in aid. Review aid status via Financial Aid Status (FAST), award letter and terms and conditions under the Financial Aid menu on My Macomb WebAdvisor. If registered in classes meeting less than the full 16-week term, the student is providing the intent of completing all courses, including those which have not yet begun, for financial aid purposes if the courses are not dropped within the 100% refund period.

Students receiving financial aid should contact the Financial Aid office at 586.445.7228 before dropping or withdrawing from courses to understand the impact on financial aid awards, such as reduction of aid and satisfactory academic progress.

When a student's financial aid is reduced, the student will be sent a statement indicating the reason for reduction, amount due, and payment options. Until the balance is paid in full, the student will be unable to register for future terms, or receive grades or transcripts. Delinquent accounts are turned over to a collection agency, assessed a 25% delinquent account fee, and reported to credit bureaus. Any refund may be used to reduce or pay off the debt. Students may not be able to receive federal financial aid at other institutions due to an overpayment owed to Macomb Community College.

Deadline for Filing

Students are strongly encouraged to apply for financial aid as early as possible and to respond to requests for information promptly. Completing the Free Application for Federal Student Aid (FAFSA) early increases a student's chances of being processed in time for the Fall, Winter or Spring/Summer payment deadline dates. Due to the high volume of applications, students must complete the FAFSA **and** submit all requested documents at least 30 days prior to the initial payment due date for the given semester to know their financial aid eligibility in advance of the initial payment deadline.

Private Scholarships

Macomb offers many privately funded scholarships to eligible students. To apply for a private scholarship, students need to submit an online private scholarship application at <https://macomb.academicworks.com/> for all scholarships. Some of the scholarships require that the student has completed a FAFSA, while others do not. Funding and deadlines vary each year.

Transfer Scholarships for Macomb Community College Graduates

Many Michigan four-year colleges and universities provide outstanding community college transfer students with scholarships to continue their education. A complete list is available on Macomb's website at www.macomb.edu (keyword search: Transfer Scholarships).

Food Service & Eating on Campus

Website: www.macomb.edu (keyword search: eating)

Food service is available at both campuses.

Center Campus (CC)

Building P—Skylight Café—Student Center

Building C—MUG Fine Coffees—Library

Buildings N and R lobbies— Micro Café

South Campus (SC)

Building K—HUB Café—Student Center

Building J—MUG Fine Coffees—Library

Cafés: Food choices include grilled panini sandwiches, burgers, hot dogs, soups, deli sandwiches, salads, snacks, and more. Beverages include coffee, tea, juices, soft drinks, and bottled beverages. Specials under \$5 offered daily.

MUG Fine Coffees: Offers a wide assortment of flavored coffee including espressos, mochas and lattes; provides many grab-n-go food options such as pitas, pastries, muffins, bagels, snacks, and more.

Student Centers: Provide free WiFi, computer stations, and free activities such as pool, Ping Pong, video-gaming, and more!

Hours of operation and vending machine locations can be found on campus bulletin boards or online at the website noted above.

Gainful Employment Information

The U.S. Department of Education requires colleges to disclose specific information about certificate programs that meet certain criteria and that lead to "gainful employment in a recognized occupation." Schools must disclose program costs, on-time completion rates, median loan debt, a list of related occupations, and other important program information. In order to help students make informed educational decisions, Macomb discloses this information for all certificate programs included in the current catalog. The web address for these disclosures is listed at the end of the program description. All of Macomb's Gainful Employment disclosures can be found at www.macomb.edu/ge.

Grading System

Website: www.macomb.edu (keyword search: grading)

	Grade Interpretation	Honor Point Value
A	Excellent	4.0
A-	Good	3.7
B+	Good	3.3
B	Good	3.0
B-	Fair	2.7
C+	Fair	2.3
C	Fair	2.0
C-	Passing	1.7
D+	Passing	1.3
D	Passing	1.0
D-	Passing	0.7
E	Fail–No Credit	0.0
P/F	Pass/Fail	

A pass/fail grade may be given for a specific course based on the recommendation of the faculty in the discipline, a supporting rationale, and with the approval of the Provost. Students may not elect pass/fail as an option. You may access your term grades on My Macomb WebAdvisor. An unofficial transcript is available on My Macomb WebAdvisor.

Grading Symbols

In addition to the grading system, the following symbols may appear on a student Grade Report.

AD	Audit–No Credit
I	Incomplete
CIP	Course In Progress
NR	Grade Not Reported
NS	No Show
R	Repeat
W	Withdrawal–No Credit

Failure to Attend Class

Students who do not attend class by the end of the third week of class are considered a no show and will receive an NS symbol. This will impact students receiving the following funds/benefits:

Financial Aid

Students receiving an NS symbol will be required to repay the portion of financial aid applicable to the class(es) not attended. The student will receive an invoice for repayment. Failure to pay will result in a “HOLD” on all records and future registrations. Delinquent accounts are turned over to a collection agency and will be assessed a delinquent account fee and reported to credit bureaus.

Federal Veteran's Benefits

Students receiving an NS symbol will be reported to the Veteran's Administration (VA) Office. The VA Office will contact the student regarding possible repayment of funds for which the student was not entitled.

F1 International Status

Students receiving an NS symbol will be reported to the U.S. Department of Homeland Security for violation of immigration policies. The student may be contacted by this office regarding possible sanctions for non-attendance.

Grade Point Average

The 'AD', 'I', 'CIP', 'NR', 'NS', 'R', and 'W' are not counted in determining a student's grade point average (GPA).

When a course is repeated the Academic Renewal and Course Repeat Policy shall apply.

Auditing a Class

A student wishing to audit a class will be permitted to change to or from an "audit" status through the 100% refund period for that particular course section. An auditing student will register and pay tuition and fees in the same manner as a credit student. Further, a student who elects to audit a class will be required to adhere to the same placement processes, will not earn any college credit and will not receive a grade.

Incomplete Grade Policy

An "I" (incomplete) grade is reserved for situations when a student needs to complete, at most, one-fourth of the work for the term. If the student is unable to complete the term, an "I" (incomplete) grade may be recorded. The student and instructor will complete a faculty/student contract form outlining the necessary requirements needed to complete the class. Once the student completes the necessary requirements for the class, a Change of Grade form and a copy of the faculty/student contract must be submitted for the student to receive a grade greater than an "E." For those "I" (incomplete) grades that are not changed by the expiration date, the "I" (incomplete) grade will default to an "E."

Class Withdrawal

- Students who withdraw from classes while on campus must complete a Class Withdrawal Form or submit a written request by mail or fax. Students can also withdraw on the My Macomb WebAdvisor.
- Students who never attend classes shall receive an NS symbol for that term.
- Students who officially withdraw during the first three-quarters (3/4) of a term shall receive a W symbol for that semester.
- Students may not officially withdraw during the last quarter (1/4) of the term, but shall only be given an A, A-, B+, B, B-, C+, C, C-, D+, D, D-, E, I, or P/F.

Special Withdrawal

Exception to the withdrawal policy may be made by the College under special circumstances, but only after documentation by the student and verification by the College. All petitions must be filed before the end of the term, and petitions for exception to the withdrawal policy must be directed to the Director of Enrollment Services/Registrar who will consult with the appropriate institutional administrator before making a final decision.

Grade Appeal Guidelines

If a student believes a faculty member/instructor has issued a final grade in violation of the faculty member's published grading standards or practices, the student must do the following:

1. Student meets with the faculty member/instructor.
2. Student meets with the appropriate associate dean or dean of the instructor's department if the problem is not resolved in step one.
3. If the student has not been able to resolve the issue in one of the above steps, the student may appeal the grade by submitting the Academic Standards Committee Student Petition Form together with any and all supporting documentation to the associate dean.

The form must specify how the published grading standards or practices have been violated and be signed and dated. The student must initiate the grade appeal process, that is complete steps one and two of this procedure and file the petition with any supporting documentation, with the associate dean on or before the following deadlines: March 1 for the previous Fall semester, July 1 for the previous Winter semester, and October 1 for the previous Spring/Summer semester.

Again, the Student Petition form can only be sent to the College's Academic Standards Committee by the associate dean after completing steps one and two. Questions regarding the appeal process may be directed to the associate dean or director of the instructor's department. The decision of the Academic Standards Committee shall be final.

Time Limit on All Grade Changes

All grade change requests must be initiated within six months following the end of that course for which the grade was recorded. No grade change requests will be accepted after that period of time.

Credit by Examination/Credit for Prior Learning

Phone: 586.445.7001

Email: testing@macomb.edu

Website: www.macomb.edu (keyword search: testing)

Credit may be granted to a student who demonstrates by examination and/or prior learning that they are proficient in a subject. The examinations used shall be appropriate standardized commercial examinations or standardized college-prepared examinations or portfolios that demonstrate student learning. See *Academic Assistance/Learning Centers* in this catalog for more information.

Dean's List Procedure

Students who achieve a minimum grade point average (GPA) of 3.25 with a minimum of 12 credit hours earned in that semester appear on the Dean's List under the designation full-time student (12 plus credit hours). Part-time students, those who earn fewer than 12 credit hours in a semester, would become eligible to be included on the Dean's List once they accumulate a minimum of 12 credit hours. Once eligible, part-time students who achieve a minimum semester GPA of 3.25 with a minimum of 6 credit hours earned that semester would be placed on the Dean's List.

Options for Academic Renewal

Academic problems can be course or program related, jeopardizing the attainment of an associate degree. The following options are available to students who find themselves in various degrees of academic difficulty:

- Course Repeat Policy
- General Academic Renewal Policy

Course Repeat Policy

A student who elects the same course more than once will have the **better** grade counted in determining the grade point average (GPA). However, both courses remain on the record. The computer will assign an R to the course with the lowest grade. Effective Summer 2003, the original grade will reflect the grade plus an “R” next to it. Repeats prior to Summer 2003 will show only the “R.” To repeat a course that is no longer offered by the College, consult the appropriate department to see if a similar course may be substituted.

A student may not repeat a course for credit or audit more than three times unless the catalog or schedule of classes designates that this course may be repeated or the approval of the appropriate associate dean, counselor, or academic advisor is granted.

Normally, credit for a class may not be counted more than once unless specifically stated in the course description (Music, for example).

General Academic Renewal*

This renewal is established to better enable the attainment of an associate degree or certificate. This policy is not intended for the needs of a student seeking to attain academic honors. A student who wishes to qualify for a certificate or associate degree, and whose grade point average (GPA) is below 2.0, may request that up to thirty (30) credits of coursework taken at Macomb Community College be disregarded in computation of the minimum 2.0 grade point average needed to earn a certificate or degree. Additionally, any disregarded grades must be “Ds” or “Es” and must have been recorded at least one year prior to graduation.*

NOTE: Those credit hours not counted in determining the grade point average may not be counted toward the minimum hours required for graduation.

This renewal request may be granted only once and under no circumstances will any of the grades be removed from the student’s academic transcript.

*The College will deduct the “E” grades in the calculation of the grade point average until the student has an overall 2.00 grade point average. If the student does not have enough “E” grades, the College will then deduct the “D” grades from the grade point calculation of the overall grade point average.

For additional information about academic renewal, please call or see a counselor in the Office of Counseling and Academic Advising. See *Counseling & Academic Advising Services* in this catalog for location and contact information.

Academic Intervention

Website: www.macomb.edu

In the interest of promoting student success, Macomb Community College has developed Academic Intervention Guidelines. Students with a cumulative grade point average (GPA) below 2.0 will be asked to take specific steps to learn how to become successful students. Please visit the website noted above for information on interventions that can be planned for improvement.

Graduation/Commencement

Degree/Certificate Application

Website: www.macomb.edu (keyword search: graduation)

Deadline to apply for name to appear in Commencement Program Book:

- March 15 for May ceremony
- November 1 for December ceremony

Students completing their academic requirements must complete a formal application for degree and/or certificate. The application is available on My Macomb WebAdvisor or from the Enrollment Office, located in G-Building at either campus. Associate degree applicants who want their name to appear in the commencement program must apply by March 15 for the May ceremony and November 1 for the December ceremony. Applications are accepted through the last day of the term.

To verify your degree status, please contact the Counseling and Academic Advising Office located in H-Building at either campus (see *Counseling & Academic Advising Services* in this catalog for contact information). An audit will determine if you have fulfilled the minimum credit hours required for an associate degree or certificate. See *Degree Requirements* in this catalog. Associate degree applicants will receive information as to the next steps for participation in the commencement ceremony. This information will be sent electronically and/or by US mail.

Commencement Ceremony

Recognizing how important it is for graduates, family, friends and faculty to reflect upon the significance of earning a college degree, Macomb Community College hosts two commencement ceremonies each year. Associate degree applicants who complete their degree requirements at the close of the summer and fall semesters are honored at the December ceremony and applicants who complete their requirements at the close of the winter semester are honored at the May ceremony. Graduates from both campuses participate together in the commencement ceremony, which alternates between South and Center campuses. The ceremony is for students receiving an associate degree only. Certificates or other credentials are not awarded at this time. For more information, go to My Macomb, select Student Life, Student Life and Leadership, and click on the Commencement link.

Housing

The College maintains no approved housing list, nor does it maintain dormitories for on-campus residency. The College is within easy commuting distance for most students, making it possible for them to live at home while attending classes.

Academic Assistance/Learning Centers

Center Campus (CC)

Building C Room 116 (C116)

Phone: 586.286.2203

Email: tutor@macomb.edu

Website: www.macomb.edu

South Campus (SC)

Building J Room 325 (J325)

Phone: 586.445.7400

Many programs are offered that support students' academic work using traditional methods as well as computer-based instruction. Tutoring, seminars, and workshops are offered free of charge for Macomb Community College students in the center. There is a center located at each campus.

Tutoring and Group Study

The Academic Assistance/Learning Centers provide an area for students to study individually or in small groups. Tutor-led study sessions are available for many subjects such as mathematics, biology, chemistry, and physics. If you need help in an area not currently offering tutoring, complete a request for tutoring at the Academic Assistance/Learning Center. The center will do its best to find a qualified tutor to help you.

The times when tutors are available for various subjects are posted in the center. Scheduled tutoring sessions may change depending upon demand for this service and availability of tutors. Contact the Academic Assistance/Learning Centers for the most current tutoring schedule.

Tutoring for writing is available by appointment. Writing tutors can make suggestions and help you with papers for any subject area. However, they are not editors. You may stop in or call the Learning Centers for an appointment. If you cannot get to campus, you might like to work with an online writing tutor. Go to the Learning Center web page for directions on how to work with an online writing tutor.

Resources

The Academic Assistance/Learning Centers support classroom instruction with a wide range of video, audio, computer software, books, and laboratory materials. Staff is available to help students determine which resources might be best for their particular need. Please ask questions about what is available, and feel free to come and discover what may be of help to you.

PLATO is a computer software program that can help students develop skills in science, mathematics, reading, social studies, and others. You can also use it for COMPASS and HESI test preparation. If you would like to work on one or more of those areas, visit the Academic Assistance/Learning Center to fill out an intake form. PLATO is designed to be self-paced so you can work at your own pace.

Student Success Seminars

These seminars are offered throughout the fall and winter semesters to assist students in developing academic skills that will support their success in class. Proven techniques are presented about a variety of topics such as time management, test anxiety, and how to take notes during a lecture. The underlying theme of the seminars is to learn to “study smarter, not harder.” The seminars are free and are offered midday and in the evening. Schedules are posted online, in the Academic Assistance/Learning Centers, and in the current schedule of classes. A limited number of sessions run during the summer.

Academic & Career Testing

Website: www.macomb.edu (keyword search: testing)

The Academic Assistance/Learning Centers facilitate academic testing for students and the public. This includes placement testing, career assessments, make-up tests for classes, and other academic tests such as CLEP, LSAT, HESI, and ACT. Everyone taking a test must present a picture ID and follow staff directions for appropriate testing. More information can be found on the website noted above.

College Level Examination Program (CLEP)

Website: www.collegeboard.com and www.macomb.edu (keyword search: CLEP)

The South Campus Academic Assistance/Learning Center is a national CLEP (College Level Examination Program) testing site. Students may be able to obtain course credit via this program. CLEP information can be found on the websites noted above. Macomb Community College’s course equivalencies are available on the College website.

Credit by Examination

Website: www.macomb.edu (keyword search: credit by exam)

Students may receive credit for specific Macomb Community College courses or elective credit in general subject areas by passing examinations designed to measure knowledge in a specific area. Students receive credit only, not a letter grade. Credit by exam cannot replace a course grade. Visit the website noted above for more information.

Portfolio Credit for Prior Learning

Website: www.macomb.edu (keyword search: portfolio)

Macomb Community College grants credit for experiential learning when students can document that their previous learning, gained through life and work experiences, matches the outcomes of active courses. Each student is responsible for determining which current Macomb courses match the student's personal and professional experiences. Students may receive up to 17 credit hours of Portfolio Credit for Prior Learning submissions. Contact the Academic Assistance/Learning Centers to discover how your life and/or work experiences may be eligible for college credit through the Portfolio Credit for Prior Learning program. Portfolios must be turned in to the South Campus Academic Assistance/Learning Center. More information is available at the website noted above.

Libraries

Center Campus (CC)

Building C

Phone: 586.286.2104

Reference Services: 586.286.2056

Email: libraryaccess@macomb.edu

Website: www.macomb.edu (keyword search: library)

South Campus (SC)

Building J

Phone: 586.445.7401

Reference Services: 586.445.7779

Macomb Community College Libraries support the educational, enrichment, and economic development experiences provided by the College Library services are offered to students, faculty, and staff. Community residents may also use resources on-site and borrow materials from the Macomb Libraries.

Each site has over 45 computers offering Microsoft Office programs and Internet access, including online research resources such as the library catalog, e-books, reference databases, and periodical articles. Black-and-white and color photocopying are available on site for a fee.

Library Resources

The Libraries contain approximately 180,000 books, 850 print periodical titles, 48,000 electronic periodical titles, and 6,500 in-house video/DVD resources. Macomb libraries are members of the Detroit Area Library Network (DALNET), a regional group of academic and research libraries. Through DALNET, Macomb libraries provide access to a searchable Web-based catalog of books and video resources owned by the libraries.

In addition to book and video resources, the libraries offer a number of online research databases providing full-text information from reference sources, magazines, journals, and newspapers. These databases cover all subject areas taught at Macomb, including the arts and sciences, automotive service, business, culinary arts, education, health, technology, and veterinary medicine.

Current students, faculty, and staff can access most of the online research databases from home using their Macomb ID number. Resources are periodically evaluated and changed. Please check with a reference librarian to determine the availability of a particular resource.

Library Services

Through Macomb's membership in the Southeastern Michigan League of Libraries (SEMLOL), current students, faculty, and staff can borrow materials directly from a number of area academic libraries. Please check with a reference librarian about item availability and documentation required to borrow materials from another library.

In addition to direct borrowing from area libraries, current Macomb students, faculty, and staff have the option to request materials from other libraries in the state and across the country using the Michigan eLibrary Catalog (MeLCat) and Interlibrary Loan services. Please consult with a reference librarian about requesting items through these services.

The libraries promote and support a number of educational and enrichment programming activities throughout the fall and winter semesters. These events support College-wide reading programs, film series, the Macomb Multicultural and International Initiative (MMII), and celebratory events for Martin Luther King Jr. Day, Black History Month, Women's History Month, and Constitution Day. All events are free to attend and open to faculty, staff, students, and community members. Participants can check the library website, or speak with a staff member for information on upcoming programs.

Lorenzo Cultural Center

Center Campus (CC)

Building K

Phone: 586.445.7348

Email: culturalcenter@macomb.edu

Website: www.lorenzoculturalcenter.com

The Lorenzo Cultural Center provides a new dimension to our enrichment offerings. The Lorenzo Cultural Center builds on the highly regarded Macomb Center for the Performing Arts' offerings and quality theater space by pairing it with complementary programming and facilities. This creates a unique local opportunity to offer truly multidimensional cultural experiences, designed to appeal to broad segments of our community. Events bring history, literature, science, and the visual arts to our community in a setting unparalleled in the region.

Macomb Center for the Performing Arts

Center Campus (CC)

Phone: 586.286.2141

Email: MacombArts@macomb.edu

Website: www.macombcenter.com

Macomb Center for the Performing Arts, on the campus of Macomb Community College, is the cultural hub of Macomb County. Its mission is to enhance and enrich the cultural development and awareness of the community by offering a diversified selection of quality cultural experiences, and to inspire and encourage artistic expression through education, performance and volunteer opportunities.

My Macomb

Website: www.macomb.edu

My Macomb enables you to securely access student information including: search and register for classes, add or drop a section, obtain account information and payment information in "real-time" and pay for classes using a credit card or check. My Macomb is your one-stop-shop for accessing student information online.

Online Learning

ANGEL Support

Phone: 877.362.2662

Email: angelsupport@macomb.edu

Website: www.macomb.edu (keyword search: online)

Macomb Community College is committed to supporting students with a variety of online learning opportunities. Over 1,000 online, hybrid, and Web-enhanced course sections are conveniently available 24/7 each semester in an online environment supported by the ANGEL Learning software.

Students taking their first:

- Online or hybrid course at Macomb must complete the Introduction to Online Learning.
- Web-enhanced course at Macomb must complete the Introduction to ANGEL, unless you have previously completed the Introduction to Online Learning.

Hybrid Sections

Hybrid sections, also known as “blended” at some colleges and universities, are a combination of traditional face-to-face and online classroom instruction or facilitation. For example, a science course may be offered in an online classroom for lecture and on campus for laboratory. Other hybrid sections may require students to meet for the first time on campus or periodically throughout the semester in order to make presentations, participate in field trips, and/or take examinations.

Web-Enhanced Sections

Web-enhanced courses meet in face-to-face classrooms on scheduled days and times, and use ANGEL along with other Web content to enrich the learning experience.

Online Class–Time Commitment & Frequency

Expect to spend at least the same amount of time studying for an online course as its equivalent on-ground course. For example: Expect to spend 24 hours for a 4 credit hour, 8 week online course. To be successful in your online course, it is important to set a schedule that allows you to stay current with your coursework, which includes reading announcements, communicating with instructors, participating in discussion forums as well as completing and posting assignments. It is essential that you log into your course on the day it begins and check in often thereafter (at least five days a week) to avoid falling behind.

ANGEL Support

For technical assistance with ANGEL, please email angelsupport@macomb.edu or phone 877.362.2662. Please provide your full name and seven-digit Macomb ID when contacting ANGEL Support. ANGEL Support is committed to doing everything they can to assist you in successful completion of your course(s).

Placement Testing

Center Campus (CC)

Building H Room 113 (H113)

Phone: 586.286.2027

Email: testing@macomb.edu

Website: www.macomb.edu (keyword search: placement)

Placement Testing Preparation: www.macomb.edu (keyword search: placement resources)

South Campus (SC)

Building H Room 217 (H217)

Phone: 586.445.7423

All new students to Macomb Community College must take the COMPASS Placement Test in order to evaluate their skill level in math, English and reading for proper course selection. Preparation for the test is encouraged. Visit the College's website (keyword search: placement resources) to learn more. Photo identification with signature (e.g. driver's license, passport, military ID) is required to take the placement test.

Students whose native language is not English will have a two-part placement test. The first part will be to take the COMPASS/ESL test, which evaluates a student's skill level in grammar, reading, and listening for proper course placement. The second part is a written evaluation given by the instructor at the beginning of the course in which the student is placed. After the course evaluations, the instructor will determine if the student should stay in that course or move to another level.

In order to promote Student Success, Macomb Community College requires that all students having three developmental placements (MATH-0050 or MATH-0070, and READ-0960 and ENGL-0050), must enroll in CSSK-1200 their first semester at Macomb. Students must successfully complete this course with a grade of C or better. Students who do not successfully complete this course after two attempts will be prohibited from enrolling in other courses until they successfully complete this course. Students who do not complete this course after three attempts will not be allowed further enrollment in CSSK-1200 or at the College.

Exemptions to placement testing are granted for the following reasons. See a counselor or academic advisor for details.

- Contracted education programs for predetermined populations through Workforce Development
- Students taking course(s) for personal reasons (16 credit hours maximum)
- Transfer students who have successfully completed college level English composition and mathematics courses at another postsecondary institution
- Guest students from other postsecondary institutions
- Students who have completed an associate, bachelor's or graduate level degree that includes the successful completion of college level English or mathematics course(s).*

**These students may enroll at the College, but cannot register in English, mathematics, or English for academic purposes without meeting appropriate placement or prerequisite requirements.*

Retesting Policy

The first time the placement test is taken there will be no charge to a student. Each test taken thereafter, a fee will be assessed.* The College limits retesting to 120 days from the date the test was last retaken. The time limit on the age of placement test scores is two years. If retesting is required to adhere to the two-year time limit, no fee will be assessed. Retesting fees must be paid at the Cashier's Office, located in G-Building at either campus. Receipt of payment must be presented to the Placement Test staff prior to retaking the test. See Placement Testing staff for details.

**In the case of severe illness or technical difficulties beyond the College's control, students will be allowed to make-up the affected portion of the test with no additional fee. An Irregularity Report must be filed with staff for this provision to apply. Contact Placement Testing staff for details.*

Other Course Placements (Chemistry, Foreign Languages, Medical Terminology, Physics)

Center Campus (CC)	South Campus (SC)
Building C Room 116 (C116)	Building J Room 325 (J325)
Phone: 586.286.2203	Phone: 586.445.7400
Website: www.macomb.edu	

Students with knowledge in the preceding subjects may wish to take the relevant placement test to show proficiency and begin at a higher course level. Course placement tests can be taken in the Academic Assistance/Learning Center located in the Library at either campus. All tests require photo identification and student ID numbers.

Program of Study

Counseling & Academic Advising Services

Center Campus (CC)

Building H Room 103 (H103)

Phone: 586.286.2228

Email: answer@macomb.edu

Website: www.macomb.edu (keyword search: counseling advising)

South Campus (SC)

Building H Room 316 (H316)

Phone: 586.445.7211

If your program of study has changed, you may update your program in the Enrollment Office. In order to ensure proper course selection, it is recommended that you discuss this with an Academic Advisor. If you are unsure of which program to follow, an appointment with a Counselor is strongly recommended to discuss your options.

Public Service Institute (PSI)

Center Campus (CC)

Building A Room 126 (A126)

Phone: 586.286.2189

Website: www.macomb.edu (keyword search: psi)

Public safety occupations require dynamic skill sets. Macomb's Public Service Institute (PSI) provides education and training for careers in law enforcement, homeland security, fire service and emergency medical services. In addition, the Public Service Institute provides business and industrial professionals with a variety of health & safety training opportunities. PSI prepares students by linking them with peers, instructors, and community partners that help to create a meaningful education and occupational experience in a multitude of public service career fields. The training is designed to develop and enhance the skills of first responders and emergency management professionals to safely and effectively manage emergencies.

Basic Police Academy

Phone: 586.498.4060

A 17-week, 807-hour training program that exceeds the State of Michigan mandated training required to enforce the general criminal laws of the State of Michigan.

Admissions Criteria: Employment by a law enforcement agency, able to meet the standards established by state statutes or a minimum of an associate degree, successful completion of the Michigan Commission on Law Enforcement Standards (M.C.O.L.E.S.) pre-employment test, approval by an academy coordinator following an interview, and payment of the prevailing academy fee.

Advanced Police Training

Phone: 586.498.4050

In-service seminars designed to increase proficiency and professionalism in law enforcement. A wide variety of specialized, supervisory- and management-level seminars prepare officers for career advancement or new assignments. Seminars include updates on new laws, legal decisions and emerging technology, as well as changing enforcement practices, techniques and equipment.

Admissions Criteria: Law enforcement officers and other personnel with a need to develop executive management skills.

Fire Academy

Phone: 586.498.4020

Basic Fire Training Academy: A 10-week, 400-hour program providing basic training that exceeds the State of Michigan mandated requirements for a firefighter. The training involves live fire, vehicle extrication, hazardous material operations, confined space training, and water rescue techniques. Upon successful completion of the written and practical exams, graduates will be certified by the State of Michigan as firefighters.

Admissions Criteria: Firefighters from organized fire departments or approval by an academy coordinator following an interview, successful completion of the physical agility test, and payment of the prevailing academy fee.

Business/Industry and Municipal Health and Safety Training

Phone: 586.498.4055

PSI staff can provide on-site assessments of your organization's level of compliance with federal and state regulations and suggest methods to enhance safety and ensure compliance. Training programs can be developed to meet the specific needs of your organization. Customized courses can be delivered on or off site. Compliance/workplace health and safety training that can help your organization avoid liability and decrease employee injuries include:

- Confined Space
- Fire Brigade
- Forklift Traffic Safety
- Hazardous Materials
- Industrial Fall Protections
- Industrial First Aid, CPR, MFR
- Live-Fire Tower Extinguishers
- Lock-out Tag-out

Advanced Fire Training

Phone: 586.498.4055

Courses from the National Fire Academy are offered on a continuing basis to upgrade firefighter professional skills, including Fire Officer I, II and III. Other courses in specialized operations and advanced seminars on management and supervisory skills are regularly scheduled.

Fire and Building Code Officials Programs

Phone: 586.286.2189

Seminars are conducted on a host of subjects required by various inspection agencies. All of the seminars are registered with the appropriate state agencies, and the students receive credit toward their continuing education requirements.

Admissions Criteria: Fire and emergency services supervisory personnel and other public safety personnel with a need to develop executive management skills.

The MIOSHA Training Institute (MTI)

Phone: 586.498.4106

Email: MTI@macomb.edu

Employers, workers, union members, safety and health personnel, emergency responders, and college students can benefit from the MIOSHA Training Institute at Macomb Community College. The MTI reaches out, educates, and leads the state's employers and employees in improving and advancing workplace safety and health.

Records & Transcripts

Enrollment Services

Center Campus (CC)

Building G Room 110 (G110)

Phone: 586.445.7225

Email: enrollmentservices@macomb.edu

Website: www.macomb.edu

South Campus (SC)

Building G Room 301 (G301)

The College maintains a permanent record for each student who has taken classes. To better serve students, Macomb Community College utilizes the National Student Clearinghouse for completely online and paperless transcript requests. You can complete the entire process online and track the status of your order for a small convenience fee. All you need is an email account and a valid major credit card or debit card.

There is no fee for transcripts requested in person, if being mailed. For those students who come to the College and request a transcript "on-demand," a convenience fee is applicable (*during on-campus registration or term-end posting of grades "on-demand" transcript may not be available*).

An unofficial transcript may be obtained on My Macomb WebAdvisor. Students who need to change their name, address, or program on their official College records should contact the Enrollment Office.

Student grade reports are available on My Macomb WebAdvisor and are NOT mailed to the student.

Safety on Campus—College Police

Center Campus (CC)

Building I Room 103 (I103)

Phone: 586.286.2123

Email: answer@macomb.edu

Website: www.macomb.edu (keyword search: college police)

South Campus (SC)

Building C Room 116 (C116)

Phone: 586.445.7135

Feeling safe on campus is a high priority for all students, staff, and visitors of Macomb. Ensuring that safety is maintained is the function of the College police officers, who are duly sworn and have full police powers to provide police, fire, and security services. Officers can be contacted by calling 911 from any campus telephone or by using the emergency phones with blue lights located near building entrances or in College parking lots.

The College Police offices are open 24 hours a day, seven days a week.

In order to ensure a safe environment within the College, all police incidents and security or safety problems including vehicle accidents, injuries, criminal offenses, and suspicious activity should be reported to the College Police.

Hazardous materials such as chemical spills and injuries that involve blood or body fluid spills require cleanup following the bloodborne pathogen policy. Call the College Police so that cleanup can be done by the environmental technician from plant operations.

Material safety data sheets (MSDS) are available in the College Police Office at South and Center campuses.

Other Services include information for disabled students' assistance, lost and found, severe weather information, basic first aid and emergency procedures, and "Student Right to Know" compliance, including crime statistics. Crime prevention services include pamphlets, presentation, video viewing, and displays. Information on drug and alcohol abuse prevention, the College's Sexual Assault Policy and information on the "Stalking Law" are also available.

Secondary School Outreach and Admissions

Office of Admissions & Outreach

Center Campus (CC)

Building G Room 110 (G110)

Phone: 586.498.4008

Email: admissions@macomb.edu

Website: www.macomb.edu

South Campus (SC)

Building G Room 301 (G301)

The Office of Admissions & Outreach at Macomb Community College is committed to student success. The College's role is to partner with secondary schools within its service area to acquaint potential students with new and exciting opportunities for educational discovery through a variety of ways.

Early College of Macomb (ECM)

Phone: 586.445.7640

Website: www.ecmacomb.org

Many colleges and universities require the same type of "core" or "general education" requirements, such as English, math, and social science. Macomb offers a wide variety of these classes. The Early College of Macomb (ECM) prepares high school juniors and seniors for the next level by offering courses that will allow them to be a step ahead in college. There are many advantages of completing these types of courses at Macomb:

- **Early Entrance**—11th grade students enter a college program while still in high school and are able to earn a high school diploma. A 13th year of high school is added after graduation with the ability to earn an associate degree with no cost to themselves for tuition, fees, and books (these costs are covered by the respective school district).
- **Early Exit**—The ECM program may be completed in three years through grades 11–13. Students work with high school and college instructors who move the student ahead of a traditional schedule.
- **Early Success**—Upon completion of the ECM, students are poised for immediate success. They can earn up to 62 college credits (required for the associate degree), complete a technical certificate, and/or transfer credits to a four-year university. Students may also choose to begin work in a technical field right away, putting them ahead of their peers.

See your high school counselor to determine if you qualify for the ECM. It is recommended that you work with your high school counselor or a Macomb counselor/academic advisor when choosing courses to ensure that the credits will transfer.

NOTE: Students enrolled in Early College of Macomb (ECM) program are not eligible to receive financial aid funds to attend Macomb Community College, based on federal guidelines.

Dual Enrollment

Phone: 586.445.7246

Email: earlyadmit@macomb.edu

Website: www.macomb.edu

Dual Enrollment is an opportunity for high school students to discover the college experience on one of Macomb’s campuses, including through an online course or hybrid format.

NOTE: Students in grades 9–10 and home-schooled students must meet with the Manager of Admissions, Outreach and Early Admit programs prior to applying. To schedule an appointment, please call 586.445.7246.

Dual Enrollment generally falls into one of the following categories:

1. **High School Sponsored (Dual Enrollment)**

This option allows district approved public high school students to earn both high school and college credit for designated coursework. The school district is billed for the authorized amount of tuition and fees (students are responsible for book costs). Billing is limited to a maximum dollar amount; students must pay any costs above the limit. Approval of courses and billing authorization is required from the high school principal and/or school district office.

2. **State Sponsored (Dual Enrollment)**

This option allows district approved non-public high school students to earn college credit while still in high school. The State of Michigan is billed for the authorized amount of tuition and fees (students are responsible for book costs). Billing is limited to a maximum dollar amount; students must pay any costs above the limit. Approval of courses and billing authorization is required from the high school principal and/or representative.

3. **Self-Pay**

This option is open to all students and provides the opportunity to earn college credit while still in high school, but the student is responsible for all costs including tuition, fees, and books.

See also *High School Early Admission Students* under *Admissions/Registration* in this catalog for more information.

Career Academies

Phone: 586.498.4008

Website: www.macomb.edu

Wondering what the right career path is for you? Explore your options with Career Academies! Career Academies are four- to five-day-long learning experiences for high school students that provide a clear understanding of what a specific career field is like. They are designed to be hands-on, interactive, and fun learning experiences, and their popularity has grown tremendously at Macomb. Past offerings have included law enforcement, culinary and pastry arts, robotics, media arts and vet tech. For a current list of offerings, dates and costs, visit the website noted above.

High School Course Transfer (Articulation)

Website: www.macomb.edu

Macomb Community College and county school districts have agreements in place to allow high school students to earn college credit for successful completion of high school courses in a designated academic program. Labeled “articulation agreements,” Macomb has approximately 180 such agreements in 16 different subject areas. Talk to your high school counselor for more information. Visit the website for a current list of agreements by subject and school district.

Senior Citizens' Programs and Services

Website: www.macomb.edu (keyword search: senior discount)

A 10% discount is offered on all College services including tuition and fees to persons aged 60 years or older. The discount, however, does not apply to co-sponsored, contracted, or non-college sponsored programs or activities. Date of birth must be provided.

Student Financial Appeal Committee

Email: SCAppeals@macomb.edu

Mailing Address: Student Financial Appeal Committee—CG130
Macomb Community College
14500 E. 12 Mile Road
Warren, MI 48088

A student who has previously requested a Special Refund through the Director of Enrollment Services/Registrar has a right to appeal this decision through the Student Financial Appeal Committee. The appeal must be initiated within 60 days from the last day of the semester in which the dispute/charge was incurred. No requests for appeals will be accepted after that time period.

As noted in the *Tuition & Fees* section of this catalog, Refunds Under Special Circumstance are defined as follows:

Students who must withdraw from a class after the 7th calendar day due to hospitalization, accidental injury, prolonged illness, mandatory shift change at the student's place of full-time employment (does not include mandatory overtime) and mandatory move of employment which necessitates a change of residency (does not include new employer), may receive a 100% refund of tuition, course fees and registration fee in the form of a credit voucher upon presentation of documentation satisfactory to the College. However, if the student is receiving financial aid, a refund may not be issued due to Federal regulatory requirements.

NOTE: Part-time employment, part-time to full-time employment, new employment, recalled employment and mandatory overtime hours do not qualify for an appeal.

The Student Financial Appeal Committee is comprised of the Director of Financial Services, Dean of Student Success, and Director of Financial Aid. A student must submit the appeal in writing (email accepted), stating his/her reasons for appealing the decision and specifics of the remedy they are requesting. Documentation to support the claim is required unless previously submitted with the initial request for a refund.

The Student Financial Appeal Committee will review the appeal within 10 business days of receipt.

The decision of the Student Financial Appeal Committee will be final, with no further appeal possible.

Student Hold Policy

A HOLD will be placed on a student's academic record if outstanding monetary or material obligations have not been satisfied, there is an address discrepancy, GPA is under 2.0, or in the event of an unresolved disciplinary matter. Until the reason for the HOLD is resolved, the student will not be allowed to register, request or receive transcripts or receive any other services from the College until the HOLD is released.

The Enrollment Services Office can assist in identifying the reason for a HOLD on a record and how it can be released.

Reason for Hold	Department to Contact
Records Update	Enrollment.....586.445.7225
Loan Exit Interview	Financial Aid.....586.445.7228
Financial Obligation	Financial Services.....586.445.7336
Academic Intervention	Counseling & Advising
	Center Campus.....586.286.2228
	South Campus.....586.445.7211
Disciplinary Matter	Dean of Students.....586.445.7408

Student Life & Leadership

Center Campus (CC)	South Campus (SC)
Building P Room 127 (P127)	Building K Room 251 (K251)
Phone: 586.286.2242	Phone: 586.445.7446
Email: sacenter@macomb.edu	Email: sasouth@macomb.edu
Website: www.macomb.edu (keyword search: student life and leadership)	

Student Life & Leadership provides an important complement to a student's academic endeavors, providing a well-rounded campus life experience. Students can participate in activities that focus on diversity, education, leadership, volunteerism, intramural sports and recreation, and of course, just having fun. Examples of past activities are: Welcome Week, Make a Difference Day, Lunch & Learns, monthly leadership programs, trips to Cedar Point and Chicago, Alternative Spring Break, and a movie and book series.

Another great way for students to get involved is through the College's numerous student clubs and organizations such as Phi Theta Kappa, student veterans, writing club, or Anime. Being involved in a student organization is not only a great way to meet people, but it can also be a great way to develop skills for any career.

Just looking to relax and have fun? Each of the College's student centers features a recreational game room area. This is a place where students can play pool, cards, chess, video games, Ping-Pong, or just relax. There is no better place on campus to unwind between classes!

Want to learn more? Check us out online or stop by the Student Life & Leadership Office at either campus.

Student Options for Success (SOS)

Center Campus (CC)	South Campus (SC)
Building H Room 114 (H114)	Building G Room 205 (G205)
Phone: 586.447.8609	
Email: sos@macomb.edu	
Website: www.macomb.edu (keyword search: SOS)	

The SOS program connects students with a variety of community and public benefit organizations to help them with living expenses while pursuing higher education. Academic success is a priority, but many students still struggle with basic expenses such as food, rent, utilities, child care, and health care while in school. The SOS program helps students find resources to support their attainment of educational goals by providing tools for ongoing financial stability and long-term self-sufficiency.

SOS Services include:

- Public Benefits Application Assistance
- College and Community Resource Referral
- Financial Strategies and Money Management
- Emergency Assistance Funds

Students' Rights & Responsibilities

Office of the Dean of Student Success

Center Campus (CC)

Building H Room 114 (H114)

Phone: 586.445.7408

Website: www.macomb.edu (keyword search: student handbook)

At Macomb Community College, we are committed to providing a quality education and supporting student success. This catalog, as well as the website, schedule of classes, and dedicated employees throughout the institution, can provide students with information about the services that are available to support them in identifying and achieving their educational goals.

As the College has the responsibility to support a student's educational achievement, students have certain responsibilities for managing and directing their own educational plan. Following are strategies that can help:

- Take an active role in clearly stating goals and engaging in your own success
- Seek the advice of a counselor or academic advisor on a regular basis
- Become familiar with College policies, procedures and deadlines
- Be proactive in communicating with instructors
- Seek assistance and support services as necessary, such as making use of the Academic Assistance Learning Center, Library, Counseling, Advising, etc.
- Ensure, if transferring to a senior college or university, that courses are appropriate for transfer and that you clearly understand transfer requirements; seek guidance from a Macomb counselor or academic advisor as well as from the transferring institution (see Transfer Information in this catalog)
- Enroll in courses as suggested by a counselor or academic advisor

In addition to the responsibility to manage and direct an educational plan, students are also responsible for knowing and following the policies, rules, and regulations that contribute to the learning process on the College's campuses. Review the student handbook on the website noted above. Most of the rules and regulations outlined are self-explanatory. These regulations as well as applicable township, city, county, state and federal laws, statutes and regulations apply on all College property and at all College-sponsored events.

The College's website also provides extensive information about your rights as a student. We encourage you to review all of the College policies regarding such important topics as Equal Opportunity and Affirmative Action, unlawful harassment, discipline, use of computer software, and confidentiality of your student records. Questions regarding College rules and regulations should be addressed to the office of the Dean of Student Success as noted above.

Join us in maintaining a safe environment on campus. Promptly report all crimes, accidents, and/or civil infractions occurring on College property to the College Police Department. See *Safety on Campus—College Police* in this catalog for more information.

Academic Dishonesty

Plagiarism and academic dishonesty are addressed in a serious manner at Macomb Community College. The following statement may be included in the first day handout for the traditional classroom and posted to a discussion board in the online classroom:

“As a student, I understand that academic dishonesty will not be tolerated at Macomb Community College. I am here to learn. Through learning, I will strive to become a better person and a more valuable contributor to society. I understand that dishonesty in the classroom, through cheating, plagiarism or other dishonest acts defeats the purpose and disgraces the mission and quality of Macomb Community College. Therefore, I will not engage in dishonesty in any of my academic activities, and I will not tolerate such dishonesty by other students.”

Student Concern and Complaint Procedure

If a student has concerns which merit discussion with a teacher or other College staff member, the student is encouraged to express his/her concern with the appropriate person, whether it be a teacher or staff member if this can be comfortably done. If not, the student should contact the supervisor of that individual to discuss the concern and seek appropriate resolution.

A student may initiate a complaint against a teacher if a student believes that the teacher has engaged in misconduct while performing duties, or has failed to perform duties. The complaint process involves the following steps:

1. The student may direct the complaint to the associate dean or dean of the appropriate academic area for informal resolution. Alternatively, the student may submit the complaint to the dean in writing. This notification must specify the reasons for the complaint, and be signed and dated.
2. The dean in the academic area, associate dean in the academic area, and/or the Dean of Student Success will investigate the complaint.
3. As part of the investigation, the student may be called upon to personally discuss the complaint in the presence of one of the deans, or a designee and/or the teacher against whom the complaint is lodged.
4. One of the deans or a designee will decide whether action should be taken based upon the facts determined in the investigation.

Questions regarding the complaint procedure may be directed to the associate dean or dean of the teacher's department.

Student Services Labs

Center Campus (CC)

Building H Room 108 (H108)

Website: www.macomb.edu

South Campus (SC)

Building H Room 219 (H219)

The student services labs are available for students to complete processes that require the use of a computer, such as using My Macomb WebAdvisor or completing College forms. Staff from Student Services is available to assist students. Use of the lab is free and open Monday through Friday. Please check the website for hours of operation.

Transfer Information

Transferring to Macomb

Enrollment Services

Center Campus (CC)	South Campus (SC)
Building G Room 110 (G110)	Building G Room 301 (G301)
Phone: 586.445.7225	
Email: enrollmentservices@macomb.edu	
Website: www.macomb.edu	

Macomb Community College will accept coursework satisfactorily completed (with a grade of A, A-, B+, B, B-, C+, or C) or an equivalent of 2.0 or higher based on a 4.0 scale from other colleges and universities which are approved by the American Council on Education and/or accredited by the Higher Learning Commission or its regional equivalent. Credit for courses taken elsewhere will be evaluated by the Enrollment Office.*

Students who are seeking transfer credit should request the college(s) previously attended to mail an official transcript to the Enrollment Office located in G-Building at either campus. For institutions sending electronic transcripts, please email to transcripts@macomb.edu.

Selective admission applicants who are interested in earning the **Associate of Applied Science degree in Health Information Technology (HITT), Nursing (NURS), Occupational Therapy Assistant (OTAS), Physical Therapist Assistant (PTAS), Respiratory Therapy (RSPT), Surgical Technology (SURG) and/or Veterinary Technician (VETT)** programs should request the college(s) previously attended to mail an official transcript to the Center Campus Enrollment Office (G-110). A selective admission packet can be downloaded from Macomb’s website. For additional information, contact the Enrollment Office as noted above.

Mail: Macomb Community College
 Selective Admissions
 Center Campus Enrollment, G-110
 14500 E. 12 Mile
 Warren, MI 48038-1139

** Grades earned at another college will not replace grades earned at Macomb Community College.*

Transferring to Other Colleges/Universities

Counseling and Academic Advising Services

Center Campus (CC)	South Campus (SC)
Building H Room 103 (H103)	Building H Room 316 (H316)
Phone: 586.286.2228	Phone: 586.445.7211
Email: askanadvisor@macomb.edu	
Website: www.macomb.edu (keyword search: transfer)	

Transfer is an educational process that involves the movement of academic courses, programs or degrees from one higher education institution to another. Completing 1 to 3 years at Macomb and then transferring to complete your bachelor’s degree is a smart choice:

- Macomb is affordable
- Macomb delivers quality courses
- Macomb is convenient
- Macomb provides academic support, and
- Macomb can help if you are undecided about your major or career

For these reasons it is emphasized that each student planning to transfer credits to senior colleges or universities should make an individual appointment with a counselor or visit an advisor early in their college career. For further information, contact the Counseling & Academic Advising Office as noted above.

Transfer Courses and Agreements

Office of Transfer and Articulation

Center Campus (CC)

University Center 1 (UC1) Room 228 (UC1 228)

Phone: 586.286.2216

Email: transfer@macomb.edu

Website: www.macomb.edu (keyword search: transfer)

Macomb has different types of transfer options with 4-year schools. When followed, these options ensure a seamless transfer process. If you are a current student, the plans can be viewed on WebAdvisor.

- **Transfer Course Equivalencies:** Aligns Macomb's courses with those at the 4-year school. www.michigantransfernetnetwork.org
- **Articulation Agreements:** These agreements provide for the transfer of an entire prescribed program of study.
- **Transfer Agreements:** These plans are guides for specific programs and degrees and details courses to be taken at Macomb before transfer.

MACRAO Transfer Agreement *(for students enrolled prior to Fall 2014)*

This agreement provides for transferability of up to 30 semester credits to meet many (and in some cases all) of the general education requirements at participating Michigan colleges and universities. At the student's request, the records area will review the student's academic record. If the necessary basic Arts and Sciences requirements are met, the student's transcript will be stamped "MACRAO agreement satisfied." Additional information is available through the Counseling and Advising Office as noted under *Transferring to Other Colleges/Universities* in this Catalog.

Michigan Transfer Agreement

<http://macrao.org/Publications/MTA.asp>

Effective for the Fall 2014 term, the Michigan Transfer Agreement will replace the MACRAO Transfer Agreement for new students whose first-time enrollment is in the 2014-2015 academic year. This agreement provides for transferability of 30 semester credits to meet many (and in some cases all) of the general education requirements at participating Michigan colleges and universities. At the student's request, the records area will review the student's academic record. If the outlined program requirements are met, the student's transcript will be stamped "MTA Satisfied." Additional information and an outline of the required classes for the agreement are available through the Counseling & Academic Advising Office.

Reverse Transfer

Website: www.macomb.edu (keyword search: reverse transfer)

You earned it!

If you transferred from Macomb to another school before graduating, and earned 30 or more credits, you may be eligible to earn your associate degree after the fact. To begin the process, have the institution you are currently attending (if you have completed a minimum of 35 credits) send an official transcript to Macomb.

Tuition & Fees

Enrollment Services

Center Campus (CC)

Building G Room 110 (G110)

Phone: 586.445.7225

Email: enrollmentservices@macomb.edu

Website: www.macomb.edu (keyword search: tuition)

South Campus (SC)

Building G Room 301 (G301)

Because Macomb County taxpayers support Macomb Community College through a voter approved millage, students who live or own property within Macomb County are charged less per credit hour than those who live outside the community college district. Tuition rates are based on whether the student is a:

- Macomb County resident or if student owns property within Macomb County
- Nonresident of Macomb County
- Out-of-state/International student
- Affiliate tuition rate

(See the *Schedule of Classes* for current tuition rates.) Tuition and fees are subject to change by the Board of Trustees.

How To Determine Tuition

To determine your tuition, multiply the applicable tuition rate by the number of credit hours taken. In figuring your tuition, include all the following fees:

- Registration Fee
- Student Service Fee
- Course Fees: see specific course sections
- Technology and Facilities Fee (per credit hour)

Tuition Assessment

1. Citizens, permanent residents of the U.S., and international refugees who reside in Macomb County or own property within Macomb County at the time of registration shall be assessed the resident tuition rate.
2. Citizens, permanent residents of the U.S., and international refugees who are not residents of Macomb County, but are employed full-time in Macomb County and whose tuition is reimbursed or paid directly by the employer, shall be assessed the resident tuition rate. To qualify for this rate, however, a letter signed by an appropriate officer of the firm or agency describing the reimbursement and/or payment/billing plan must be filed each semester with the Financial Services Office, Center Campus S Building, prior to registering for classes.
3. Citizens, permanent residents of the U.S., and international refugees who reside in the state of Michigan, but not in Macomb County, shall be assessed the nonresident tuition rate except in the case of '2' above.
4. Citizens, permanent residents of the U.S., and international refugees who reside outside the state of Michigan shall be assessed the out-of-state tuition rate except in the case of '2' above.
5. Persons admitted to the United States under a student or other type of visa shall be assessed the out-of-state/foreign tuition rate.
6. With the approval of the Director of Enrollment Services/Registrar, students participating in an official and recognized foreign student exchange program (e.g. AFS) shall be assessed resident

tuition rates if they reside in Macomb County at the time of registration. Otherwise they shall be assessed nonresident or out-of-state tuition rates depending on where they are residing at the time of registration.

7. Affiliate students are defined as “non-county” residents living in communities not served by a community college, or who are attending the college under the terms of a formal agreement with another educational provider. Affiliate student status is defined as (1) the portions of four Macomb County School Districts (Anchor Bay, Richmond, Armada, and Romeo) that fall outside an established community college district, and (2) the southern Lapeer County School Districts of Almont, Dryden, and Imlay City. This affiliate rate generally falls between the resident and nonresident rate.

The student will have to present documentation to receive affiliate rates. A copy of the property tax bill or a copy of the Michigan Income Tax Form for the last fiscal year that reflects the school district in which the student resides, or the student’s parent/guardian (if a dependent) resides. Submit appropriate documentation (by fax, mail or in person) to the Office of Enrollment Services in G-Building at either campus. If these items are not available, the student must provide a statement from the school district certifying the student resides within the school district covered in this agreement.

Proof of Residency

You must reside in the county and proof must be submitted to the Enrollment Office, prior to the start of registration for the term. The difference in fees will not be refunded if proof is submitted AFTER you have registered.

To verify residency, submit a photocopy of one or more of the following:

1. Valid Michigan driver’s license in student’s name (both sides must be submitted if license has been renewed or address has changed).
2. Valid motor vehicle registration in student’s name (car insurance and car title not acceptable).
3. Utility bill in student’s name (dated no earlier than 60 days prior to registering for classes).
4. Valid Michigan identification card in student’s name.
5. Payroll stub with student’s name and address (dated no earlier than 60 days prior to registering for classes).
6. Charge statement in student’s name and address (dated no earlier than 60 days prior to registering for classes).
7. Closing statement in student’s name (closing on residence must occur within 30 days after first day of semester).
8. New rental or lease agreement in student’s name (dated no earlier than 60 days prior to registering for classes).
9. Current property tax receipt in student’s name (must be place of residency or property).
10. Military identification card (only for those assigned to Selfridge Air National Guard Base).
11. Statement verifying residency signed by parent(s) if student is still in high school, and parent’s proof of residency OR statement verifying residency signed by parent(s) and current high school record.

If you live outside of Macomb County, but own property in Macomb County, a current property tax receipt must be submitted to the Cashier’s Office via fax prior to registering to receive this adjustment. Fax to 586.226.4754 or 586.445.7409.

Deliberate misrepresentation of residency to obtain lower tuition rates is subject to disciplinary and/or legal action by the College.

Decisions regarding residency status may be appealed to the Director of Enrollment Services/Registrar. The difference in fees because of a change in residency status will not be refunded if proof is submitted after the student registers for classes.

Tuition Refunds

Tuition refunds are available for a limited time after registration is completed. Students who decide to drop their classes during the refund period may drop using My Macomb WebAdvisor or on-campus in the Enrollment Services Office in G-Building at either campus. Refunds are processed weekly excluding holidays.

Refund Process

Macomb's refund process allows greater flexibility in receiving a refund. If you are enrolled in credit courses:

- Payments made with a credit or debit card will be refunded back to that card
- Other refunds are based on the refund preference selected using your College ID (known as the Macomb OneCard) by going to www.MacombOneCard.com

Refund preferences for credit courses include:

- Macomb OneCard with an easy refund OneAccount (this option activates the debit card)
- ACH Direct Deposit to a personal bank account of your choice

NOTE: A Macomb OneCard will be sent by mail to you the first time you enroll for credit classes and serves as your College ID.

- The card is the gateway to refunds throughout your Macomb education.
- **Do Not Throw This Card Away**—A replacement fee of \$20 will be assessed to receive a new card. Use the card to activate your refund preference at www.MacombOneCard.com.

If you are enrolled in non-credit courses:

- Payments made with a credit or debit card will be refunded back to that card
- Other refunds to be made by paper check

It shall be the College policy to refund tuition and course fees according to the schedule in the schedule of classes, except where superseded by law, to a student who properly withdraws from a class during the refund period. For details see the College's website.

Refunds Under Special Circumstances

Students who must withdraw from a class after the 7th calendar day as a result of military deployment shall receive a 100 percent refund of tuition, course fees and registration fee or equivalent credit voucher upon presentation of documentation satisfactory to the College.

Students who must withdraw from a class after the 7th calendar day due to hospitalization; injury; prolonged illness; mandatory shift change at student's place of full-time employment (does not include mandatory overtime); and mandatory move of employment which necessitates a change of residency (does not include new employer) may receive a 100% refund of tuition, course fees and registration fee in the form of a credit voucher upon presentation of documentation satisfactory to the College. However, if the student is receiving financial aid, a refund may not be issued due to Federal regulatory requirements.

Requests for a refund due to special circumstances must be submitted in writing to the Director of Enrollment Services/Registrar no later than the last day of the semester of the class involved. See also *Student Financial Appeal Committee*.

The University Center at Macomb

Center Campus (CC)

Phone: 586.263.6018

Email: answer@macomb.edu

Website: www.macomb.edu

The Macomb University Center (UC), located on Center Campus, is a unique entity developed by Macomb Community College to meet the educational needs of the community by providing upper level baccalaureate, master's, and doctoral degree programs in Macomb County. These degree programs are offered as part of a partnership that combines the facilities of Macomb Community College with curricula and expertise of the various "partner" colleges and universities.

Admission to a University Center Program

Your best source of information for transferring to a University Center partner institution is your counselor at Macomb Community College or the University Center partner you wish to attend. By working closely with a counselor when you first enroll at Macomb Community College, you are assured of taking and being able to transfer all necessary courses. It is suggested that you attend a University Center Open House (held each fall and spring) to meet with representatives of the partner colleges and universities.

Since each of the partner institutions offers different degree programs and has different admission requirements, it is important to contact the college or university of your choice for admission information. Visit www.macomb.edu for more information.

Partners & Programs

Macomb Community College has carefully selected partners and programs designed not to compete with Macomb's own two-year programs. Cooperative academic arrangements such as these allow students to achieve maximum access to their selected degree programs for minimum costs. The most current list of partners and programs can be found at www.macomb.edu/uc. For further information about the University Center, contact the partner schools listed below or contact the University Center at 586.263.6033.

Central Michigan University—586.228.3160, elaine.kas@cmich.edu

- Bachelor of Applied Arts in Administration with a concentration in Organizational, Industrial or Service Sector Administration
- Bachelor of Science in Administration with a concentration in Organizational, Industrial or Service Sector Administration
- Bachelor of Science in Community Development with a concentration in Public Administration, Health Sciences or Community Services
- Master of Science in Administration with a concentration in General Administration, Health Services, Human Resources, Information Resource Management, Public Administration, International Administration or Leadership

Ferris State University—586.263.6773, BrianBouwman@ferris.edu

- Bachelor of Applied Science in Industrial Technology & Management (Offered at South Campus)
- Bachelor of Science in Business Administration—Professional Track (Offered at South Campus)
- Bachelor of Science in Automotive Management
- Bachelor of Science in Criminal Justice (Offered at East Campus)
- Bachelor of Science in Health Information Management

Madonna University—586.263.6330, Imcintyre@madonna.edu

- Bachelor of Science in Criminal Justice
- Bachelor of Science in Emergency Management
- Bachelor of Science in Hospitality and Tourism Management
- Bachelor of Science in Merchandising Management
- Bachelor of Science in Paralegal Studies

Michigan State University—586.263.6731, anne.snyder@he.msu.edu

- Doctor of Osteopathic Medicine (D.O.)

Northern Michigan University—586.263.6266, juevans@nmu.edu

- Bachelor of Science in Loss Prevention Management
- Master of Arts in English

Northwood University—586.226.4733, bonkowsk@northwood.edu

- Bachelor of Business Administration in Automotive Marketing & Management
- Bachelor of Business Administration in Entertainment, Sport & Promotion Management
- Bachelor of Business Administration in Entrepreneurship
- Bachelor of Business Administration in International Business

Oakland University—586.263.6242, rhodey@oakland.edu

- Bachelor of Arts in Communication
- Bachelor of Arts in Journalism
- Bachelor of Integrative Studies
- Bachelor of Science in General Management
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Computer Science
- Bachelor of Science in Engineering with majors in Computer, Electrical, and Mechanical Engineering
- Bachelor of Science with a major in Elementary Education
- Bachelor of Science in Human Resource Development
- Master of Arts in Communication
- Master of Arts in Counseling
- Master of Arts in Teaching, Reading & Language Arts

Rochester College—586.263.6288, jbrown2@rc.edu

- Bachelor of Business Administration in Management
- Bachelor of Science in Strategic Leadership
- Bachelor of Science in Psychology
- Bachelor of Science in Mass Communication/MACA
- Bachelor of Science in Early Childhood Studies

University of Detroit Mercy—586.263.6308, gormeldm@udmercy.edu

- Bachelor of Arts in Financial Economics
- Bachelor of Science in Addiction Studies
- Bachelor of Science in Health Services Administration
- Bachelor of Science in Nursing—degree completion

- Master of Arts in Curriculum and Instruction
- Master of Arts in Economics
- Master of Arts in Educational Administration and Leadership
- Master of Arts in Financial Economics
- Master of Science in Health Services Administration
- Master of Science in Nursing in Health Systems Management

Walsh College—586.723.1500, mcandela@walshcollege.edu, lraymo@walshcollege.edu

- Bachelor of Accountancy
- Bachelor of Business Administration in Accounting Processes
- Bachelor of Business Administration in Finance
- Bachelor of Business Administration in General Business
- Bachelor of Business Administration in Management
- Bachelor of Business Administration in Marketing
- Master of Business Administration with specializations

Wayne State University—586.263.6700, kevinchandler@wayne.edu

- Bachelor of Arts in Business Administration with a major in Global Supply Chain Management (Offered at South Campus)
- Bachelor of Arts with a major in History, optional minor in Political Science or Criminal Justice
- Bachelor of Arts in Information Systems Technology (offered at South Campus)
- Bachelor of Arts in Nutrition and Food Science
- Bachelor of Arts in Public Relations
- Bachelor of Arts or Science with a major in Computer Science (Offered at South Campus)
- Bachelor of Arts or Science in Elementary Education/Integrated Science or Mathematics
- Bachelor of Arts/Science in Special Education with a concentration in Cognitive Impairment
- Bachelor of Arts/Science in Instructional Technology (Offered at South Campus)
- Bachelor of Science in Construction Management (Offered at South Campus)
- Bachelor of Science in Electrical/Electronic Engineering Technology (Offered at South Campus)
- Bachelor of Science in Mechanical Engineering (Offered at South Campus)
- Bachelor of Social Work
- Master of Arts in Employment and Labor Relations
- Master of Education with a major in Bilingual/Bicultural Education with a concentration in English as a Second Language
- Master of Education with a major in Special Education and a concentration in Autism Spectrum Disorder
- Master of Education with a major in Special Education and a concentration in Cognitive Impairment
- Master of Education with a major in Special Education and a concentration in Learning Disabilities
- Master of Social Work
- Education Specialist Certificate with a major in Special Education and a concentration in Autism Spectrum Disorders
- Education Specialist Certificate with a major in Special Education and a concentration in Learning Disabilities

Veterans Affairs Educational Benefits

Enrollment Services

Center Campus (CC)

Building G Room 110 (G110)

Phone: 586.445.7225

Email: veteranservices@macomb.edu

Website: www.macomb.edu

South Campus (SC)

Building G Room 301 (G301)

Macomb Community College provides a Veterans Service Center at South Campus where veterans and other eligible students are given information about benefits available to them. Students are encouraged to apply for Veterans Affairs (VA) educational benefits at the earliest possible date.

Standards of Progress

In compliance with current federal regulations, the standards of progress for recipients of VA educational benefits enrolled at Macomb Community College are as follows:

- Maintain a 2.0 cumulative grade point average. If a student's grade point average falls below 2.0, he/she will be placed on probation and will have two consecutive semesters to raise it. Failure to do so will result in termination of educational benefits by the Department of Veterans Affairs.

To request reinstatement of VA educational benefits:

1. Make a counseling appointment. Obtain a statement from a Macomb Community College counselor declaring that your program meets your interests, aptitudes, abilities, and you can successfully complete your associate degree requirements.
2. Submit a written statement explaining why your GPA fell below 2.0 and what you have done or plan to do to correct this situation.
3. Complete VA form 1995 or 5495 (available at the Veterans Service Center, Building G Room 301 at South Campus).
4. Submit all the above to the Veterans Service Center in G-301 at South Campus.
5. When a VA recipient receives grades of **NS**, **W**, or **I**, the VA will adjust the educational benefits back to the first date of the semester unless mitigating circumstances can be shown. For example, a student who registers for 12 credit hours (full-time) and has a four credit hour NS grade has only earned eight credit hours.
6. When a veteran student receives a grade of **E** and the last date of attendance reported by the instructor is prior to the last date of the class, the last date of attendance will be reported to VA.
7. VA regulations prohibit payment for repeated classes (**A** through **D-** grades), unless otherwise specified in the Macomb Community College catalog, or for classes that are not required by your associate degree program.

You must report any reduction in training time or changes in your schedule to the Veterans Service Center as soon as the changes occur to prevent overpayments. Failure to report withdrawals could result in the loss of benefits dating back to the first day of the term and subsequent liability for any resulting overpayment. You **must** report any changes in your enrollment **as they occur**.

Workforce & Continuing Education

Website: www.macomb.edu (keyword search: workforce)

Business & Information Technology: 586.445.7266

Engineering & Advanced Technology: 586.498.4100

Health & Public Service Center for Health Careers: 586.226.4807

Macomb Community College helps students obtain the skills needed to navigate the path to success! In addition to academic degrees and certificates, Macomb offers professional development classes and workforce certificates that make a difference in the workplace and lead to increased earnings.

Whether a student is just out of high school, an adult blending work and education, an employer needing quick employee training, or simply taking a personal enrichment class, Macomb serves all students across the education continuum.

Workforce & Continuing Education also offers employers affordable, leading-edge, custom-designed assessment services, training, education, and certification programs, providing employee participants with new skills, knowledge and abilities. Our training advisors have experience helping HR professionals, managers, supervisors and business leaders determine which training solutions are needed to provide employees with the skills for today's fast-paced, global business environment. All programs are scheduled at times and locations convenient to businesses and employees.

Training Options

Continuing Education Units (CEUs)

Continuing Education Units (CEUs) are awarded for enrollment in many Workforce & Continuing Education courses. The CEU is a nationally recognized standard unit of measurement for substantive, non-degree learning experiences. One CEU is equal to ten (10) hours of instruction and field work. Workforce & Continuing Education also offers classes that are eligible for professional CEUs, including K–12 State Continuing Education Clock Hours.

Job Skills

Macomb Community College offers many opportunities for lifelong learners to explore career changes, upgrade employability skills, and acquire professional or industry-driven certifications and Continuing Education Units through Workforce & Continuing Education (WCE). WCE is dedicated to providing professional and certification classes for community college graduates and others in pursuit of lifelong learning related to allied health and medicine, business and corporate leadership, computer technologies, court reporting and other professions in collaboration with exemplary providers of traditional and online learning opportunities.

Professional Development

- Career and Professional Certifications
- K–12 State Continuing Education Clock Hours

Personal Growth & Development

Workforce & Continuing Education offers hundreds of courses for individuals of all ages to enhance special interests in computers, health and wellness, creative and performing arts, languages and history, landscaping, floral design, and much more.

WorkKeys®

Phone: 586.498.4118

Email: stantona@macomb.edu

Website: www.macomb.edu (keyword search: workkeys)

WorkKeys is a workforce development resource devised to help businesses and industry increase the skill level of their employees. Designed to function in three stages, WorkKeys ensures that the right people are staffed in key positions through job profiling, assessments, and specific training to close identified skill gaps.

The National Career Readiness Certificate is a portable credential that verifies to employers that an individual has essential workplace skills in reading and comprehension, applied mathematics and locating information.



Macomb Community College

Program Information (listed alphabetically)

Macomb Community College's programs specify the courses required to earn an associate degree or certificate (see page 67–355)

Terms used in this section and their definitions:

CERTIFICATE OPTION—Available to students who want to earn a Certificate or Skill Specific Certificate in a program by successfully completing only the specified courses.

ELECTIVE COURSES—Courses applicable toward a degree or certificate which may be chosen by the student to meet individual interest and needs.

PROGRAM ADVISOR—Full-time faculty member in a particular program who advises students of appropriate courses to be taken to complete educational objectives.

SEMESTER HOURS (SEM HRS) or CREDIT HOURS (CREDIT HRS)—Official number of hours of credit given for the course. The terms Semester Hours and Credit Hours are used interchangeably.

SUGGESTED SEQUENCE—Indicated by a horizontal dividing line designating the semester or semesters individual courses may be taken to be of most benefit to the student. The sequential arrangement which is not mandatory. If it does not fit your needs, see your program advisor, an academic advisor, or a counselor.

Macomb Programs:

Macomb Community College's Arts and Sciences and Career programs specify the courses required to earn an associate degree or certificate. If you are interested in a program that you do not see listed, please call 586.445.7999 for information. (If no page number is listed, that award is not available in that area.)

Macomb Community College

Assistance Directory

AREA	EMAIL	SOUTH			CENTER		
		PHONE	BLDG/ RM	FAX	PHONE	BLDG/RM	FAX
Academic Assistance/ Learning Centers	tutor@macomb.edu	586.445.7400	J325	586.445.7194	586.286.2203	C116	586.286.2002
Admissions & Outreach	Admissions@macomb.edu	586.498.4008	G301	586.445.7140	586.498.4008	G110	586.226.4787
ANGEL Support	angelsupport@macomb.edu	877.362.2662			877.362.2662		
Apprenticeship Programs	apprenticeship@macomb.edu	586.445.7438	R124	586.445.7130			
Bookstore	mcccenter@bkstr.com mccsouth@bkstr.com	586.445.7385	K Bldg		586.286.2093	P Bldg	
College Police	answer@macomb.edu	586.445.7135	C116		586.286.2123	I 103	
Career Services	careerservices@macomb.edu	586.445.7321	S147	586.445.7219	586.445.7321	H109	586.416.5204
Cashier's Office	regpay@macomb.edu	586.445.7336	G302	586.445.7409	586.445.7336	G131	586.226.4754
Center for the Performing Arts	macombarts@macomb.edu				586.286.2222	M Bldg	
Counseling & Academic Advising	answer@macomb.edu	586.445.7211	H316		586.286.2228	H103	
Enrollment/Records/ Registration	enrollmentservices@macomb.edu	586.445.7225	G301	586.445.7140	586.445.7225	G110	586.226.4787
Financial Aid/ Scholarships	finaid@macomb.edu	586.445.7228	H305	586.445.7223	586.445.7228	G130	586.445.7223
Financial Services	regpay@macomb.edu				586.445.7336	S300	586.445.7020
International Students	f1student@macomb.edu	586.445.7225	G301	586.445.7140			
Library	libraryaccess@macomb.edu	586.445.7401	J228		586.286.2104	C151	
Lorenzo Cultural Center	culturalcenter@macomb.edu				586.445.7348	K Bldg	586.286.2079
Macomb OneCard	macombonecard@macomb.edu	586.416.5215	K251	586.445.7172	586.416.5215	P127	586.286.2250
My Macomb/ WebAdvisor Help Line Only	enrollmentservices@macomb.edu	586.445.7225	G301		586.445.7225	G110	
Orientation	answer@macomb.edu	586.445.7211	H316		586.286.2228	H103	
Placement Testing	testing@macomb.edu	586.445.7423	H217	586.445.7157	586.286.2027	H113	586.416.5204
Special Services (students w/disabilities)	answer@macomb.edu	586.445.7420	H316		586.286.2237	H103	
Sponsored Billing	sponsoredbilling@macomb.edu				586.445.7492	S310	586.445.7020
Student Center	sacenter@macomb.edu sasouth@macomb.edu	586.445.7531	K320		586.286.2242	P126	586.286.2086
Student Life & Leadership	sasouth@macomb.edu sacenter@macomb.edu	586.445.7446	K251	586.445.7172	586.286.2242	P127	586.285.2250
Student Options for Success (SOS)	sos@macomb.edu	586.447.8609	H114			G205	
Transfer	transfer@macomb.edu	586.286.2216				UC1-228	586.263.6008
Tutoring	tutor@macomb.edu	586.445.7400	J326		586.286.2203	C116	
University Center	answer@macomb.edu				586.263.6018	UC1-100	
Veterans' Services	answer@macomb.edu	586.445.7225	G301	586.445.7140	586.445.7225	G110	
Workforce & Continuing Education	continuinged@macomb.edu						

Macomb Community College

Areas of Study

Macomb offers nearly 200 degree and certificate programs in the areas of study listed below. There are degree, certificate, and transfer programs with associate degrees of Arts, Science, Applied Science, Baccalaureate Studies, Business Administration, and General Studies.

Accounting	Finance	Medical Assistant
Advanced Processes	Fire Science	Music
Anthropology	Fluid Power Technology	Natural Science
Applied Technology & Apprenticeships	French Language	Nursing
Arabic Language & Culture	Geography	Occupational Therapy Assistant
Architecture	Geology	Paraprofessional Education
Art	German Language	Pastry Arts
Astronomy	Health Information Technology	Philosophy
Automotive Technology	Health Reciprocal Programs	Physical & Health Education
Biology	History	Physical Science
Biotechnology	Homeland Security	Physical Therapist Assistant
Building Construction	Hospitality Management	Physics
Business	Humanities	Plumbing & Pipefitting
Business Communications	Hybrid Electric Vehicles	Political Science
CAD/Computer Aided Design	Information Technology—IT	Pre-Engineering
Chemistry	IT—Applications Software	Product Development
Chinese Language & Culture	IT—Computer Security	Psychology
Civil Technology	IT—Database	Reading
Climate Control Technology	IT—Gaming	Renewable Energy Technology
College Success Skills	IT—Networking	Respiratory Therapy
Computer Service Technology	IT—Operating Systems	Restaurant Management
Culinary Arts	IT—Programming	Robotics
Early Childhood Studies	IT—Web	Sign Language
Economics	International & Global Studies	Social Science
Education	Italian Language	Sociology
Electricity & Electronics	Journalism	Spanish Language
Emergency Medical Services	Labor Management Relations	Speech Communication Arts
Engineering	Law Enforcement	Stationary Steam
English	Legal Assistant	Surgical Technology
English for Academic Purposes	Life Career Development	Surveying Technology
Entrepreneurship	Management	Veterinary Technician
Environmental Science	Manufacturing	Welding
	Marketing	
	Mathematics	
	Mechatronics	
	Media & Communication Arts	

Note: Most Areas of Study listed above have a detailed listing in the Program Descriptions section of this catalog (beginning on page 67).

For more information, visit our website at www.macomb.edu, or call 866.Macomb1 (866.622.6621).

Macomb Community College

Degrees & Certificates

Degrees Offered at Macomb

- Associate of Arts
- Associate of Science
- Associate of Applied Science
- Associate of Baccalaureate Studies
- Associate of Business Administration
- Associate of General Studies

Certificates Offered at Macomb

- Certificates in Career Programs
 - Skill Specific Certificates
- Certificate in General Studies
- Certificates in Applied Technology & Apprenticeship
- Certificates of Transfer Studies

Common Degree Outcomes:

Macomb Community College is committed to the continual improvement of teaching and learning. To reflect this commitment, Common Degree Outcomes are provided to help establish a structured environment within which students will realize their educational goals. Therefore, associate degree recipients are expected to meet the following outcomes as appropriate to the student's program.

- **The graduate can integrate the knowledge and technological skills necessary to be a successful learner.**
 - The student will be able to utilize technology to generate work and effectively communicate with others.
 - The student can locate, analyze, evaluate, and critique information resources.
 - The student will be able to responsibly and ethically use and properly attribute information resources.
- **The graduate can demonstrate how to think competently.**
 - The student will be able to identify problems, approach them systematically, and explore viable solutions.
 - The student will be able to evaluate the reasoning and arguments and evidence offered by others.
- **The graduate can demonstrate how to employ mathematical knowledge.**
 - The student can apply the concepts of math.
 - The student can use quantitative data in everyday life.
 - The student can evaluate quantitative information.
- **The graduate can demonstrate how to communicate competently.**
 - The student's written and oral work is organized, and the development is appropriate to the task and to the arguments presented by the student.
 - The student can clearly distinguish between his ideas and those of others in both written and oral communication.
 - The student's written work follows the conventions of standard written English in punctuation, grammar, and spelling.
- **The graduate is sensitive to issues relating to a diverse, global society.**
 - The student will have an understanding and appreciation of multicultural factors and their personal, professional, and societal significance.
 - The student will grasp technological, scientific, and economic advances in the context of their broader societal and international impact.
 - The student will have an understanding and appreciation of diverse geographical, historical, sociological, and psychological viewpoints.

Macomb Community College

Awarding of Associate Degrees and Academic Certificates

Associate Degrees:

Associate of Arts Degree

The Associate of Arts Degree is intended to provide a basic foundation for a Bachelor of Arts Degree program. A minimum of 62 credit hours with at least a 2.0 grade point average is required. A minimum of 15 semester hours of credit must be earned at Macomb. To be eligible for a degree the student must complete the courses required within the specialty as well as the required General Education Core courses.

Associate of Science Degree

The Associate of Science Degree is intended to provide a basic foundation for a Bachelor of Science Degree program. A minimum of 62 credit hours with at least a 2.0 grade point average is required. A minimum of 15 semester hours of credit must be earned at Macomb. To be eligible for a degree the student must complete the courses required within the specialty as well as the required General Education Core courses.

Associate of Applied Science Degree

The Associate of Applied Science Degree is intended to provide the preparation necessary for potential employment in an occupational specialty. A minimum of 62 credit hours with at least a 2.0 grade point average is required. A minimum of 15 semester hours of credit must be earned at Macomb. Eighteen credit hours from the Liberal Arts and Sciences group requirements must be met and the student must complete the courses required within the specialty as well as the required General Education Core courses.

Associate of Baccalaureate Studies Degree

The Associate of Baccalaureate Studies degree is designed for students whose educational goal is to complete a bachelor's degree at a specific college or university. A minimum of 62 credit hours in a Formalized Transfer Plan and compliance with the requirements of the plan, along with at least a 2.0 grade point average or the GPA specified in the transfer plan, whichever is higher, are all required. Formalized Transfer Plans are written agreements between Macomb Community College and senior (2-year and 4-year) colleges and universities. A current list of eligible transfer plans will be available on the College's website and will be programmed into the student information system degree audit module. Consulting a counselor and/or advisor is strongly recommended when pursuing this degree.

Associate of Business Administration Degree

The Associate of Business Administration (ABA) degree is intended to provide a basic foundation for transfer to a Bachelor of Business Administration program, or entry-level positions in the business field. A minimum of 62 credit hours with at least a 2.0 grade point average is required. A minimum of 15 semester hours of credit must be earned at Macomb. Eighteen credit hours from the Arts & Sciences group requirements must be met and the student must complete the courses required within the Business Program granting the ABA.

Associate of General Studies Degree

The Associate of General Studies Degree is intended for those who wish to follow an individualized educational plan. A minimum of 62 credit hours with at least a 2.0 grade point average is required. A minimum of 15 semester hours of credit must be earned at Macomb.

Second Associate Degree

A second Associate Degree may be awarded if, in addition to the general requirements for an Associate Degree, (1) all group and core requirements for the second degree are met, and (2) the student has earned a minimum of 77 credit hours. A minimum of 15 semester credit hours must be earned at Macomb for each degree awarded.

Academic Certificates:

Certificate in General Studies

A certificate in General Studies is awarded to those who complete a minimum of 30 semester hours of credit with a minimum cumulative grade point average of 2.0. A minimum of 15 semester credit hours of credit must be earned at Macomb.

Certificates in Career Programs

A certificate is awarded to those who complete the work specified in various career programs. A minimum cumulative grade point average of 2.0 is required.

Skill Specific Certificates

Macomb's Skill Specific Certificates can be a permanent solution, or a first step in developing, changing, or upgrading your career.

The Skill Specific Certificates are a series of courses in an area of study that will provide you with employable skills in as little as 16 weeks. These employer-endorsed certificates reverse the traditional order of obtaining your education in a career or technical field. Instead of scheduling all the Arts and Sciences courses (English, mathematics, etc.), your first semester and then taking the elective courses that apply to your field of work, the order is reversed. In some cases, after just one semester, you will have the skills you need to seek employment or upgrade in your current job. Most credit hours earned via a Skill Specific Certificate can be applied to program certificates and associate degrees. The student is required to complete the work specified in the Skill Specific Certificate program and:

- A minimum of 5 credit hours and a maximum of 20 credit hours of credit courses, with at least a 2.0 grade point average in each course.
- Students may apply approved industry standard certifications or equivalent courses taken at an accredited college or university toward this certificate. Students are required to take at Macomb a minimum of 25 percent of the total credit hours required for the certificate. For example, if a certificate requires 13 credit hours students would be required to take a minimum of 3 credit hours at Macomb (13 credit hours x 25%=3.25).

Certificates in Skilled Trades & Apprenticeship

There are a variety of certificates available to be earned in skilled trades & apprenticeship programs. The student is required to complete the work specified in the approved program (20-38 semester hours), with a minimum cumulative grade point average of 2.0. A minimum of 15 semester hours must be earned at Macomb.

Certificate of Transfer Studies

The Certificate of Transfer Studies is intended for students who plan to transfer and complete a Bachelor degree. The requirements of this certificate will satisfy the MACRAO Transfer Agreement, which is designed to facilitate transfer from community colleges to participating baccalaureate colleges and universities.

Specialty Certificates:

There are a variety of specialty training certificates that are offered by Macomb. To be eligible for a certificate a student must complete the courses required within the specialty.

Developmental Courses

Some students may be required to complete developmental education courses (courses numbered under 1000) based on placement scores. Please note that developmental education credits do not count towards credits earned for Associate Degrees or Academic Certificates.

College-Wide Courses and Programs

All curricular offerings by Macomb Community College may be scheduled and made available at any approved location. Certain specialized programs and courses will be offered only at a specific campus. The location of all courses and/or programs will be published in the College catalog, in the schedule of classes and on the College website at www.macomb.edu.

Statement Pertaining To Degrees & Certificates:

Program Completion: Two-Year/Seven-Year Rule

Students at Macomb may obtain a certificate/degree by completing the program as outlined in the catalog requirements under which they entered the institution or by fulfilling the catalog requirements in the year they intend to graduate.

A student who has not been enrolled for two consecutive years or longer must follow the catalog that is in effect the semester upon re-enrollment to the College.

Students will have a maximum of seven years to complete their certificate/degree. Departments may place additional restrictions on the amount of time that individual courses can be used to apply toward the fulfillment of certificate/degree requirements.

Departments may grant exceptions to the seven-year limits for students pursuing an applied science or general studies degree who are returning to College after more than a two-year absence if they can demonstrate continued proficiency in courses previously taken, or if they have earned equivalent certifications elsewhere. Students should consult with their departments before assuming they need to “start over.”

Associate of Arts (AA) Degree

The Associate of Arts Degree is intended to provide a basic foundation for a Bachelor of Arts Degree program.

Requirements

- Minimum cumulative grade point average of 2.0
- Minimum 15 semester hours of credit earned at Macomb

–AND EITHER–

- Minimum 62 semester hours of credit in courses numbered 1000 or above, which include:
 - A minimum of 32 semester hours of Arts and Sciences courses as described in the Group Concentrations table
 - A minimum of an additional 30 semester hours. These courses may be:
 - Courses numbered 1000 and above selected at the student’s discretion; or
 - Courses required in a program (major) which lead to an Associate of Arts degree. These programs include International Studies, Mathematics*, and Pre-Elementary Education.

* Note: Also available for an Associate of Science degree.

–OR–

- Courses required in a college or university transfer plan. While these plans are available on WebAdvisor, students are strongly encouraged to consult a College counselor or advisor for guidance in following transfer plans.

Arts and Sciences Courses Required for the Associate of Arts (AA) Degree

Courses are to be selected from each of the Arts and Sciences groups. (Senior colleges usually require 6-8 semester hours in each of Groups I–IV, not counting performance, studio or applied techniques courses.) Courses offered by other divisions of the College shall not be substituted for the required Arts and Sciences group requirement courses. It is recommended that the composition/communication course in Group I be started within the first fifteen (15) hours of the degree.

Courses numbered below 1000 will not count toward the Associate of Arts degree.

See Academic Placement Procedures for information on course placement in chemistry, English, English for Academic Purposes, mathematics, and reading.

Contact a counselor or academic advisor if you need help in choosing the appropriate course.

Arts and Sciences Group Concentrations for Associate of Arts Degree Requirements		
GROUP	COURSES	MINIMUM DEGREE REQUIREMENTS 32-39 SEMESTER HOURS
I.	ENGL-1210 or ENGL-1180, and ENGL-1220 or ENGL-1190	6-8 Semester Hours
II.	<p>One course from each of two (2) of the following subgroups:</p> <p>A. Astronomy, Chemistry, ENVS-1050, Geology, ESCI-1210, BIOL-1310, PHSA-1050, or Physics</p> <p>B. Biology (except BIOL-2110), ENVS-1050, NATS-1200, or BIOL-1310</p> <p>C. Mathematics (1000 or above)</p> <p>NOTE: ENVS-1050 or BIOL-1310 may fulfill either II.A or II.B, but not both.</p>	7-8 Semester Hours
III.	<p>A. One course in Economics, Geography, History, INTL-2010, INTL-2500, INTL-2700, Political Science (except POLS-1000), or SOSC-1010</p> <p>B. One course in Anthropology, Psychology, Sociology, or SOSC-1010</p> <p>C. POLS-1000, or HIST-2100 and HIST-2200</p> <p>NOTE: Students may fulfill the requirements of both III.A and III.C by selecting HIST-2100 and HIST-2200. SOSC-1010 may fulfill either III.A or III.B but not both.</p>	9-12 Semester Hours
IV.	<p>Art, Creative Writing, Foreign Language (1260 or above), Humanities, INTL-2000, INTL-2300, Literature (2000 and above), Music, or Philosophy</p> <p>NOTE: Classes must be taken from at least two of the academic areas listed except when a foreign language is selected.</p>	8-9 Semester Hours
V.	Any PHED Wellness course – 2000 or above	2-3 Semester Hours

Associate of Science (AS) Degree

The Associate of Science Degree is intended to provide a basic foundation for a Bachelor of Science Degree program.

Requirements

- Minimum cumulative grade point average of 2.0
- Minimum 15 semester hours of credit earned at Macomb
- Minimum 62 semester hours of credit, which include:
 - A minimum of 24 semester hours of credit in Arts and Sciences courses numbered 1000 or above as described in the Group Concentrations table; and
 - A minimum of an additional 39 semester hours, including required core courses as well as any electives designated in the program (major). Associate of Science degree programs include Biological Sciences, Chemistry, Mathematics*, Molecular Biotechnology, Pre-Engineering, and Pre-Medical Studies

Note: Also available for an Associate of Arts degree

Arts and Sciences Courses Required for the Associate of Science (AS) Degree

Courses are to be selected from each of the Arts and Sciences groups. Courses offered by other divisions of the College shall not be substituted for the required Arts and Sciences group requirement courses. It is recommended that the composition/communication course in Group I be started within the first fifteen (15) hours of the degree.

Courses numbered below 1000 will not count toward the Associate of Science degree.

See Academic Placement Procedures for information on course placement in chemistry, English, English for Academic Purposes, mathematics, and reading.

Contact a counselor or academic advisor if you need help in choosing the appropriate course. It is important to note that the pre-engineering and pre-medical programs assume a strong preparation in English composition, mathematics, and science.

Arts and Sciences Group Concentrations for Associate of Science Degree Requirements		
GROUP	COURSES	MINIMUM/RANGE DEGREE REQUIREMENTS 24-30 SEMESTER HOURS
I.	ENGL-1210 or ENGL-1180, and ENGL-1220 or ENGL-1190	6-8 Semester Hours
II.	One course in Biology, Chemistry, Physics, or Geology, and One course in Mathematics (1460 or above) NOTE: MATH-1410 and MATH-1430 may substitute for MATH-1460	6-8 Semester Hours
III.	Two courses from any of the following: Anthropology, Economics, Geography, History, INTL-2010, INTL-2500, INTL-2700, Political Science, Psychology, Sociology, SOSC-1010	6-8 Semester Hours
IV.	Art, Creative Writing, Foreign Language (1260 or above), Humanities, INTL-2000, INTL-2300, Literature (2000 and above), Music, or Philosophy	3-4 Semester Hours
V.	Any PHED Wellness course – 2000 or above	2-3 Semester Hours

Associate of Applied Science (AAS) Degree

The Associate of Applied Science Degree is intended to provide the preparation necessary for potential employment in an occupational specialty.

Requirements

- Minimum cumulative grade point average of 2.0
- Minimum 15 semester hours of credit earned at Macomb
- Minimum 62 semester hours of credit courses numbered 1000 or above, which include:
 - A minimum 18 semester hours of credit in Arts and Sciences courses numbered 1000 or above, as described in the Group Concentrations table; and
 - A minimum of an additional 44 semester hours, including required career preparation and related courses as well as any electives required in the program.

Arts and Sciences Courses Required for the Associate of Applied Science (AAS) Degree

A minimum of one course from each of the five Arts and Sciences groups must be selected. Electives and Arts and Sciences requirements must be satisfied by courses numbered 1000 or higher. Associate of Applied Science (AAS) degree requirements are met by taking the required career courses and the Arts and Sciences courses.

See Academic Placement Procedures for information on course placement in chemistry, English, English for Academic Purposes, mathematics, and reading.

Courses numbered below 1000 will not count toward the Associate of Applied Science degree.

Contact a counselor or academic advisor if you need help in choosing the appropriate course.

Arts and Sciences Group Concentration for Associate of Applied Science Degree Requirements		
GROUP	COURSES	MINIMUM DEGREE REQUIREMENTS 18 SEMESTER HOURS
I.A	ENGL-1180 or ENGL-1210	1 Course
I.B	Other English Composition, Reading, or Speech	See Note below
II.	Astronomy, Biology, Chemistry, Environmental Science, Geology, Mathematics, Natural Science, Physical Science, Physics	1 Course
III.	Anthropology, Economics, Geography, History, INTL-2010, INTL-2500, INTL-2700, Political Science, Psychology, Sociology, Social Science	1 Course
IV.	Art, Creative Writing, Foreign Language, Humanities, INTL-2000, INTL-2300, Literature, Music, or Philosophy	1 Course
V.	Any PHED Wellness course – 2000 or above	1 Course

Note: If students take one course from each of Groups I.A, II, III, IV, and V, and still have taken less than the minimum of 18 semester hours of Arts and Sciences courses required for the AAS degree, they may elect additional hours from Groups I.B, II, III, IV, or V to satisfy minimum degree requirements.

Associate of Baccalaureate Studies (ABS) Degree

The Associate of Baccalaureate Studies (ABS) degree is designed for students whose educational goal is to complete a baccalaureate degree by first earning an associate degree at Macomb Community College and then transferring to a senior college or university (including college and university partners housed at Macomb Community College's University Center) to complete their baccalaureate degree.

Requirements

- Minimum cumulative grade point average of 2.0 or the GPA specified in the transfer plan, whichever is higher
- Minimum 15 semester hours of credit earned at Macomb
- Minimum 62 semester hours of credit in an Articulated Transfer Plan and compliance with the requirements of the plan which include:
 - A minimum of 32 semester hours of credit in Arts and Sciences courses numbered 1000 and above, as described in the Group Concentrations table; and
 - A minimum of an additional 30 semester hours of required and elective courses in an Articulated Transfer Plan. While these plans are available on WebAdvisor, students are strongly encouraged to consult a counselor or advisor for guidance in following transfer plans.

Some colleges and universities require a grade point average higher than 2.0 and may specify a minimum grade which must be earned in each transfer course. These additional requirements will be indicated in the Articulated Transfer Plan and must be met by students following those plans in order to earn an Associate of Baccalaureate Studies degree.

Articulated Transfer Plans are written agreements between Macomb Community College and senior colleges and universities. These plans include courses which satisfy the general education requirements of the senior institution, foundation courses in the student's intended major, and electives which will transfer and be counted toward a student's degree completion at the senior institution. An Articulated Transfer Plan will also indicate dates within which the plan is recognized by the senior institution.

Because there are many Articulated Transfer Plans and optional courses are available within plans, students are strongly urged to work with a counselor or advisor on the selection of Transfer Plans and courses within plans. Students who follow Transfer Plans and/or select courses within Transfer Plans without consulting with a counselor or advisor may or may not satisfy the requirements for the Associate of Baccalaureate Studies degree.

See Academic Placement Procedures for information on course placement in chemistry, English, English for Academic Purposes, mathematics, and reading.

Arts and Sciences Courses Required for the Associate of Baccalaureate Studies (ABS) Degree

The minimum semester hours required for groups of Arts and Sciences courses is as follows:

Arts and Sciences Group Concentrations for Associate of Baccalaureate Studies Degree Requirements		
GROUP	COURSES	MINIMUM DEGREE REQUIREMENTS 32 SEMESTER HOURS
I.	ENGL-1180 or ENGL-1210, and ENGL-1190 or ENGL-1220	6-8 Semester Hours
II.	Mathematics or Science	3-4 Semester Hours
III.	Anthropology, Economics, Geography, History, INTL-2010, INTL-2500, INTL-2700, Political Science, Psychology, Sociology, or Social Science (SOSC-1010)	3-4 Semester Hours
IV.	Art, Creative Writing, Foreign Language (1260 or above), Humanities, INTL-2000, INTL-2300, Literature (2000 and above), Music, or Philosophy	3-4 Semester Hours
V.	Physical and Health Education Wellness (May be waived if Physical and Health Education is not a general education requirement in the student's transfer plan.)	2-3 Semester Hours
VI.	Completing the additional requirements of an Articulated Transfer Plan for a total of at least 32 semester hours in Arts and Sciences courses	9-15 Semester Hours

Associate of Business Administration (ABA) Degree

The Associate of Business Administration (ABA) degree is intended to provide a basic foundation for transfer to a Bachelor of Business Administration program, or entry-level positions in the business field.

Requirements

- Minimum cumulative grade point average of 2.0
- Minimum 15 semester hours of credit earned at Macomb
- Minimum 62 semester hours of credit
 - Part A—Minimum 18 semester hours of credit in Arts and Sciences courses numbered 1000 or above (see table)
 - Part B—Completion of the Business Administration Common Core Requirements (see table)

AND

- Completion of the requirements for the specific business program selected
- Part C—Completion of elective courses if required in the program

See Academic Placement Procedures for information on course placement in chemistry, English, English for Academic Purposes, mathematics, and reading.

Arts and Sciences Courses Required for the Associate of Business Administration (ABA) Degree

Part A: Arts and Sciences Group Concentrations for Associate of Business Administration Degree Requirements		
GROUP	GROUP AREA/COURSES INCLUDE	MINIMUM DEGREE REQUIREMENTS 18 SEMESTER HOURS
I.A.	ENGL-1180 or ENGL-1210	1 Course
I.B.	Other English Composition, Reading, or Speech	See Note
II.	Astronomy, Biology, Chemistry, Environmental Science, Geology, Mathematics, Natural Science, Physical Science, Physics	1 Course
III.	Anthropology, Economics, Geography, History, INTL-2010, INTL-2500, INTL-2700, Political Science, Psychology, Sociology, Social Science	1 Course
IV.	Art, Creative Writing, Foreign Language, Humanities, INTL-2000, INTL-2300, INTL-2800, Literature, Music, Philosophy	1 Course
V.	PHED Wellness courses – 2000 or above	1 Course

Part B: Associate of Business Administration Common Core Requirements		
COURSE	COURSE TITLE	SEMESTER HOURS
ITCS-1010	Computer & Information Processing Principles	4
BUSN-1010	Business Enterprise	3
BLAW-1080	Business Law 1	4
BCOM-2050	Business Communications	4
– AND –		
ACCT-1050	Financial Record Keeping	4
– OR –		
ACCT-1070	Accounting for Entrepreneurs	3
– OR –		
ACCT-1080	Principles of Accounting 1	4
– AND –		
MGMT-1010	Principles of Management	3
MKTG-1010	Principles of Marketing	3
		24-25

Students selecting an ABA degree in	must take
Accounting	ACCT-1080
Business Management	ACCT-1050 or ACCT-1070 or ACCT-1080
Entrepreneurship—Innovation	ACCT-1070 or ACCT-1080
Entrepreneurship—Small Business	ACCT-1050 or ACCT-1070 or ACCT-1080
Finance	ACCT-1080
General Business	ACCT-1050 or ACCT-1070 or ACCT-1080
Hospitality Management	ACCT-1050 or ACCT-1070 or ACCT-1080
Legal Assistant	ACCT-1070 or ACCT-1080
Marketing	ACCT-1070 or ACCT-1080
Project Management	ACCT-1050 or ACCT-1070 or ACCT-1080
Restaurant Management	ACCT-1050 or ACCT 1080

Note: If students take one course from each of Groups I.A, II, III, IV, and V and still have taken less than the minimum of 18 semester hours of Arts and Sciences courses required for the ABA degree, they may elect additional hours from Groups I.B, II, III, IV, or V to satisfy minimum degree requirements.

Associate of General Studies (AGS) Degree

The Associate of General Studies Degree is intended for those who wish to follow an individualized educational plan. Students electing a general studies degree should maintain close contact with Counseling & Academic Advising Services to assure construction of a plan of studies harmonious with individual interests and needs.

Requirements

- Minimum cumulative grade point average of 2.0
- Minimum 15 semester hours of credit earned at Macomb
- Minimum 62 semester hours of credit
 - Freedom to choose 62 semester hours of credit to complete the degree, provided that course selections are numbered 1000 or above and do not ignore stated prerequisites, program admission requirements, or specific rules against repetition of courses or duplication of similar courses in distinct sequences.

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MCC Programs

Terms used in this section and their definitions:

- **CERTIFICATE OPTION**—Available to students who want to earn a Certificate or Skill Specific Certificate in a program by successfully completing only the specified courses.
- **ELECTIVE COURSES**—Courses applicable toward a degree or certificate which may be chosen by the student to meet individual interest and needs.
- **PROGRAM ADVISOR**—Full-time faculty member in a particular program who advises students of appropriate courses to be taken to complete educational objectives.
- **SEMESTER HOURS (SEM HRS)**—Official number of hours of credit given for the course. The terms Semester Hours and Credit Hours are used interchangeably.

Suggested Sequence—Indicated by the Suggested Sequence in the program tables and as listed in the Optional Semester column, which designate the semesters individual courses may be taken to be of most benefit to the student. The sequential arrangement is not mandatory, hence, if it does not fit your needs, see your program advisor, an academic advisor, or a counselor.

Macomb Programs

Macomb Community College’s Arts and Sciences and Career programs specify the courses required to earn an associate’s degree or certificate. If you are interested in a program that you do not see listed, please call 586.445.7999 for information. (If no page number is listed, that award is not available in that area.)

Accounting

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Business Administration	Accounting	62	Designed for transferring into a Bachelor of Business Administration program or entry into the field of Accounting.
Certificate	Business/Accounting	44	Designed for entry-level positions or furthering one's career.
Skill Specific Certificate	Accounting	19	Designed for entry-level positions or furthering one's career.

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Fred Jex	586.286.2171	jexf@macomb.edu	Center Campus
Professor	Shirley Glass	586.445.7154	glasss@macomb.edu	South Campus
Professor	William Callaghan	586.286.2135	callaghanw@macomb.edu	Center Campus

Program Description:

The Accounting program prepares students for entry level positions in the accounting field as well as enhancing the skills of individuals currently employed in accounting and who desire advancement. The program provides specialized knowledge in accounting theory and practice as well as an understanding of business operations in the American economy.

Career Opportunities:

Accounting—Associate of Applied Science: Job titles such as Payroll & Time Keeping Clerks, Loan Officer, Tax Preparer, Teller, New Accounts Clerk, Bookkeeping, Accounting, and Posting & Auditing Clerks are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Accounting—Certificate: Job titles such as Payroll & Time Keeping Clerks, Loan Officer, Tax Preparer, Teller, New Accounts Clerk, Bookkeeping, Accounting, and Posting & Auditing Clerks are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Accounting—Skill Specific Certificate: Job titles such as Payroll & Time Keeping Clerks, Loan Officer, Tax Preparer, Teller, New Accounts Clerk, Bookkeeping, Accounting, and Posting & Auditing Clerks are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

 **Non-Credit Programs:**

<http://www.macomb.edu/Businesses+And+Municipalities/Workforce+And+Continuing+Education/Continuing+Education/Programs+and+Courses/>

ASSOCIATE OF BUSINESS ADMINISTRATION IN ACCOUNTING

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF BUSINESS ADMINISTRATION IN ACCOUNTING			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ACCT-1080	Principles of Accounting 1	–	4.0
BUSN-1010	Business Enterprise	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
BCOM-2050	Business Communications	–	4.0
SEMESTER 2			
ACCT-1090	Principles of Accounting 2	ACCT-1080	4.0
ACCT-2300	Federal Income Tax–Individual	ACCT-1080, or 2 yr. wk. experience in Accounting	4.0
MGMT-1010	Principles of Management	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS		2.0-4.0
SEMESTER 3			
MKTG-1010	Principles of Marketing	–	3.0
ACCT-1150	Microcomputer Applications in Accounting	ACCT-1090	3.0
ACCT-2270	Managerial Accounting	ACCT-1090	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
SEMESTER 4			
ACCT-2180	Intermediate Accounting 1	ACCT-1090	4.0
BLAW-1080	Business Law 1	–	4.0
Group III Course: ECON-1160	Principles of Economics 1	–	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group II–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
BUSINESS/ACCOUNTING**

Career preparation and related courses *(require successful completion of a minimum of 44 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
BUSINESS/ACCOUNTING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ACCT-1080	Principles of Accounting 1	–	4.0
BUSN-1010	Business Enterprise	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SEMESTER 2			
ACCT-1090	Principles of Accounting 2	ACCT-1080	4.0
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
SEMESTER 3			
BLAW-1080	Business Law 1	–	4.0
BCOM-2050	Business Communications	–	4.0
ACCT-1150	Microcomputer Applications in Accounting	ACCT-1090	3.0
SEMESTER 4			
ACCT-2180	Intermediate Accounting 1	ACCT-1090	4.0
ACCT-2270	Managerial Accounting	ACCT-1090	4.0
ACCT-2300	Federal Income Tax–Individual	ACCT-1080, or 2 yr. wk. experience in Accounting	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ACCTBUSCT.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
ACCOUNTING**

Career preparation and related courses *(require successful completion of a minimum of 19 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
ACCOUNTING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ACCT-1080	Principles of Accounting 1	–	4.0
ACCT-1090	Principles of Accounting 2	ACCT-1080	4.0
ACCT-1150	Microcomputer Applications in Accounting	ACCT-1090	3.0
ACCT-2270	Managerial Accounting	ACCT-1090	4.0
ACCT-2300	Federal Income Tax–Individual	ACCT-1080, or 2 years of work experience in Accounting	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ACCTSK.html>

See page 20 for Gainful Employment Information.

Applied Technology & Apprenticeship

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Applied Technology & Apprenticeship	62	Degree concentration in Building Construction Technology, Maintenance Technology, or Manufacturing Technology will be consistent with area of specialty.
Certificate of Completion	Apprenticeship Employee-In-Training	Varies by Program	Apprenticeship and employee-in-training programs require the student to be sponsored by an employer. See requirements and specific information below.
Certificate	See areas of specialty	Varies by Program	Available for students not sponsored by an employer.

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
–	Applied Technology & Apprenticeship	586.445.7438	apprenticeship@macomb.edu	South Campus

Program Description:

The Applied Technology and Apprenticeship Department offers programs and courses that provide education and training for apprentices, craftsmen, technicians, and others who are seeking a career in a highly skilled area. Specializations are available in numerous industrial and construction trades and skilled professions. Applied Technology students might be currently employed or seeking means to career entry or upgrade. Cooperation with industry keeps programs relevant to job skills required in a competitive market. Students as well as employers are served through the many Applied Technology courses that can lead to certificates and associate degrees. Applied Technology courses begin with AT (e.g., ATWD indicates a course in Applied Technology—Welding; see courses offered beginning on page 365).

Requirements & Specific Information:

Three classifications of certificate programs are available through the Applied Technology and Apprenticeship Department: Apprenticeship, Employee-In-Training, and General Certificate. All the programs are built on requirements of business and industry and designed to prepare for, remain in, or advance in a skilled career position. Credit hour, contact hour, and work requirements vary by program. Contact the Applied Technology and Apprenticeship Department for specific details. Programs currently available include those in the chart on the following page.

► Apprenticeship Programs:

Apprenticeship programs combine on-the-job training with theoretical and practical classroom and lab instruction to prepare highly skilled workers for industry. Individual employers as well as joint apprenticeship committees set employment standards, register apprenticeship programs with the Department of Labor, and employ apprentices in their respective trades. Upon completion of an apprenticeship program, the apprentice is awarded a Department of Labor certificate and a Macomb Community College Certificate of Completion of Apprenticeship, signifying that he or she is a skilled craftsman or tradesman. Please note that Macomb Community College does not select candidates for apprenticeship programs or offer placement service to apprentices.

► Employee-in-Training Programs:

Employee-in-training programs also combine on-the-job training with theoretical and practical classroom and lab instruction to prepare highly skilled workers for industry, but are solely regulated by the individual employer. Employee-in-training programs often follow or are based off the same educational plans as apprenticeship programs, but offer the employer a greater degree of flexibility in terms of course selections and specifications of on-the-job training. Upon completion of an employee-in-training program, the employee is awarded a Macomb Community College Certificate of Completion signifying that he or she is skilled in the particular craft or trade designated by the employer. Please note that Macomb Community College does not select candidates for employee-in-training programs or offer placement services to employees-in-training.

► **General Certificate Programs:**

For those students who desire to enter a skilled profession but do not have an employer sponsor, the Applied Technology and Apprenticeship Department offers general certificate programs. General certificate programs are available in the same skilled areas and follow the same educational plans as apprenticeship programs. General certificate programs combine theoretical and practical classroom and lab instruction to designed to prepare students for entry-level positions within industry, but do not include an integrated on-the-job training component.

The Apprentice Coordinator advises and approves the related training courses that apprentices and employees-in-training must take during their training programs to ensure compliance with professional and technical standards for the individual trade and company. The Apprentice Coordinator also provides educational guidance for students following general certificate programs. For further information, call the Apprentice Coordinator at 586.445.7438.

► **Associate of Applied Science Degree Requirements (Minimum 62 Semester Hrs) .**

An Associate of Applied Science degree consistent with the area of specialty (Building Construction Technology, Maintenance Technology, or Manufacturing Technology) is offered to those completing an apprenticeship, employee-in-training, or general certificate program. The completion of the Macomb Community College Arts and Sciences component is required. Electives may also be necessary, depending on the number of credit hours included in the certificate program, in order to reach the minimum of 62 credit hours required to earn the degree.

Areas of Specialty: Apprenticeship, Employee-in-Training & General Certificate

Carpenter	Millwright
CAM (Computer-Aided-Manufacturing) Technologist	Mold Maker-Plastic and/or Die Cast
CNC Machinist	Plastic Process Technician
Electric Vehicle Development Technician	Plumbing & Pipefitting
Electrical-Construction Maintenance	Robotics (includes FANUC certification)
Electrical-Industrial Maintenance	Stationary Steam Technician
Industrial Hydraulics	Sheet Metal Model Maker
Machine Repair	Tool and Die Maker
Maintenance Mechanic-Building	Welding-Basic
Maintenance Mechanic-Industrial	Welding-Advanced

<http://www.macomb.edu/ge/AppliedTechCerts.html>

See page 20 for Gainful Employment Information.

Career Opportunities:

Building Construction Technology—Associate of Applied Science: Consistent with the area of specialty, job titles such as Construction and Building Inspector; Construction Manager; Cost Estimator; Builder; Carpenter; and Electrical-Construction Maintenance Technician are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Building Construction Areas of Specialty—Certificates: Consistent with the area of specialty, job titles such as Construction and Building Inspector; Construction Manager; Cost Estimator; Builder; Carpenter; and Electrical-Construction Maintenance Technician are attainable upon completion of these courses of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Maintenance Technology—Associate of Applied Science: Consistent with the area of specialty, job titles such as Electrical-Industrial Maintenance Technician; Machine Repair Technician; Maintenance Mechanic-Industrial; Maintenance Mechanic-Building; Millwright; Industrial Hydraulic Technician; Plastic Process Technician; Plumber; Pipefitter; Stationary Steam Technician; and Welder are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Maintenance Technology Areas of Specialty—Certificates: Consistent with the area of specialty, job titles such as Electrical-Industrial Maintenance Technician; Machine Repair Technician; Maintenance Mechanic-Industrial; Maintenance Mechanic-Building; Millwright; Industrial Hydraulic Technician; Plastic Process Technician; Plumber; Pipefitter; Stationary Steam Technician; and Welder are attainable upon completion of these courses of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Manufacturing Technology—Associate of Applied Science: Consistent with the area of specialty, job titles such as Tool and Die Maker; CNC Machinist, Operator and/or Programmer; Electric Vehicle Development Technician; Mold Maker-Plastic and/or Die Cast; Sheet Metal Model Maker; Robotics Technician; and Welder are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Manufacturing Technology—Certificate: Consistent with the area of specialty, job titles such as Tool and Die Maker; CNC Machinist, Operator and/or Programmer; Electric Vehicle Development Technician; Mold Maker-Plastic and/or Die Cast; Sheet Metal Model Maker; Robotics Technician; and Welder are attainable upon completion of these courses of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

 **Non-Credit Programs:**

<http://www.macomb.edu/Businesses+And+Municipalities/Workforce+And+Continuing+Education/Continuing+Education/Programs+and+Courses/>

ASSOCIATE OF APPLIED SCIENCE IN APPLIED TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**ASSOCIATE OF APPLIED SCIENCE IN BUILDING CONSTRUCTION TECHNOLOGY,
MAINTENANCE TECHNOLOGY, OR MANUFACTURING TECHNOLOGY
CORE REQUIREMENTS**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
CORE COURSES			
Contact Applied Technology & Apprenticeship Department for curriculum	Apprenticeship, Employee-in-Training, or General Certificate program Degree concentration in Building Construction Technology, Maintenance Technology, or Manufacturing Technology will be consistent with area of specialty	–	Semester hours vary by program
ART & SCIENCES COURSES			
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
ELECTIVE COURSES			
Electives	If required to meet minimum degree requirements	–	Semester hours vary by program

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups II–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor, or apprentice coordinator to plan your schedule.

Architectural Technology— Architectural Commercial Design

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Architectural Technology— Architectural Commercial Design	62	–
Certificate	Architectural Technology— Architectural Residential Drafting & Design	19	–
Certificate	Architectural Technology— Architectural Commercial Design	44	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Christopher Christian	586.445.7480	christianc@macomb.edu	South Campus

Program Description:

The Architectural Technology program provides an opportunity for the student to develop a background in drafting skills and computer design applications, and to attain knowledge required for the architectural building and construction industry. The curriculum is designed to provide preparation for entry-level jobs in a variety of occupations. An Associate of Applied Science degree In Architectural Technology could be the foundation for eventual registration as an architect or other bachelor’s degree programs.

Career Opportunities:

Architectural Technology—Architectural Commercial Design—Associate of Applied Science: Job titles such as Commercial and Industrial Designers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Architectural Technology—Architectural Commercial Design—Certificate: Job titles such as Commercial and Industrial Designers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Architectural Technology—Architectural Residential Drafting & Design—Certificate: Job titles such as Commercial and Industrial Designers, Construction and Building Inspectors, Property, Real Estate, & Community Association Managers, Residential Advisors, and Mechanical Drafters are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
ARCHITECTURAL TECHNOLOGY—ARCHITECTURAL COMMERCIAL DESIGN**

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
ARCHITECTURAL TECHNOLOGY—ARCHITECTURAL COMMERCIAL DESIGN**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CIVL-1000	Materials	–	3.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
DRAD-1200	History of Architecture	–	3.0
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
SEMESTER 2			
DRAD-1120	Architectural Illustration 1	–	3.0
DRAD-1140	Residential Drafting & Design	DRAD-1110 and DRCG-1140, or high school equivalent with consent of program advisor	3.0
DRAD-2110	Applied Building Construction	–	3.0
DRAD-2200	Mechanical & Electrical Systems for Buildings	–	3.0
DRAD-2230	Construction Specifications	–	3.0
SEMESTER 3			
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 4			
DRAD-2090	Architectural Commercial Drafting & Design	DRAD-1140	3.0
DRAD-2220	Architectural Procedures	DRAD-1140	3.0
DRAD-2120	Structural Detailing & Design	DRAD-1110	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
SEMESTER 5			
DRAD-2140	Architectural Illustration 2	DRAD-1120 and DRAD-1140	3.0
DRAD-2280	Architectural Drafting & Design Studio	DRAD-2090	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups II–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN ARCHITECTURAL COMMERCIAL DESIGN

Career preparation and related courses *(require successful completion of a minimum of 44 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN ARCHITECTURAL COMMERCIAL DESIGN

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CIVL-1000	Materials	–	3.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
DRAD-1200	History of Architecture	–	3.0
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
SEMESTER 2			
DRAD-1120	Architectural Illustration 1	–	3.0
DRAD-1140	Residential Drafting & Design	DRAD-1110 and DRCG-1140, or high school equivalent with consent of program advisor	3.0
DRAD-2110	Applied Building Construction	–	3.0
DRAD-2200	Mechanical & Electrical Systems for Buildings	–	3.0
DRAD-2230	Construction Specifications	–	3.0
SEMESTER 3			
DRAD-2090	Architectural Commercial Drafting & Design	DRAD-1140	3.0
DRAD-2120	Structural Detailing & Design	DRAD-1110	3.0
DRAD-2220	Architectural Procedures	DRAD-1140	3.0
SEMESTER 4			
DRAD-2140	Architectural Illustration 2	DRAD-1120 and DRAD-1140	3.0
DRAD-2280	Architectural Drafting & Design Studio	DRAD-2090	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ARTECCOMCT.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN ARCHITECTURAL RESIDENTIAL DRAFTING & DESIGN

Career preparation and related courses *(require successful completion of a minimum of 19 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN ARCHITECTURAL RESIDENTIAL DRAFTING & DESIGN

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CIVL-1000	Materials	–	3.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
SEMESTER 2			
DRAD-1120	Architectural Illustration 1	–	3.0
DRAD-1140	Residential Drafting & Design	DRAD-1110 and DRCG-1140, or high school equivalent with consent of program advisor	3.0
DRAD-2110	Applied Building Construction	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ARTECRDDCT.html>

See page 20 for Gainful Employment Information.

Architectural Technology—Civil Construction

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Architectural Technology—Civil Construction	62	–
Certificate	Architectural Technology—Civil Construction	32	–
Certificate	Architectural Technology—Architectural Residential Drafting & Design	19	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Christopher Christian	586.445.7480	christianc@macomb.edu	South Campus

Program Description:

The Architectural Technology program provides an opportunity for the student to develop a background in drafting skills and computer design applications, and to attain knowledge required for the architectural building and construction industry. The curriculum is designed to provide preparation for entry-level jobs in a variety of occupations. An Associate of Applied Science degree in Architectural Technology could be the foundation for eventual registration as an architect or other bachelor’s degree programs.

Career Opportunities:

Architectural Technology—Civil Construction—Associate of Applied Science: Job titles such as Architectural and Civil Drafters are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Architectural Technology—Civil Construction—Certificate: Job titles such as Architectural and Civil Drafters are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
ARCHITECTURAL TECHNOLOGY—CIVIL CONSTRUCTION**

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

ASSOCIATE OF APPLIED SCIENCE IN ARCHITECTURAL TECHNOLOGY—CIVIL CONSTRUCTION CORE REQUIREMENTS			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CIVL-1000	Materials	–	3.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
DRAD-1120	Architectural Illustration 1	–	3.0
DRAD-1140	Residential Drafting & Design	DRAD-1110 and DRCG-1140, or high school equivalent with consent of program advisor	3.0
DRAD-2110	Applied Building Construction	–	3.0
Elective	Suggested Areas: SURV, CLCT, CIVL, ATBC, MACA, BLAW, DRCG	–	6.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 3			
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 4			
CIVL-1010	Civil Technology Seminar	–	1.0
SURV-1100	Elementary Surveying	–	3.0
SURV-2220	Civil & Survey Drafting	SURV-1100, DRAD-1110, DRCG-1140	3.0
Elective	Suggested Areas: SURV, CLCT, CIVL, ATBC, MACA, BLAW, DRCG	–	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSO	–	3.0-4.0
SEMESTER 5			
CIVL-1050	Construction Safety Policy & Procedures	–	3.0
CIVL-2200	Soils & Foundations	–	3.0
Elective	Suggested Areas: SURV, CLCT, CIVL, ATBC, MACA, BLAW, DRCG	–	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups II–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
ARCHITECTURAL TECHNOLOGY—CIVIL CONSTRUCTION**

Career preparation and related courses *(require successful completion of a minimum of 32 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
ARCHITECTURAL TECHNOLOGY—CIVIL CONSTRUCTION**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CIVL-1000	Materials	–	3.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
DRCG-1140	Interactive Computer Graphics—Introduction to 2D & 3D AutoCAD	–	4.0
SEMESTER 2			
DRAD-1120	Architectural Illustration 1	–	3.0
DRAD-1140	Residential Drafting & Design	DRAD-1110 and DRCG-1140, or high school equivalent with consent of program advisor	3.0
DRAD-2110	Applied Building Construction	–	3.0
SEMESTER 3			
CIVL-1010	Civil Technology Seminar	–	1.0
SURV-1100	Elementary Surveying	–	3.0
SURV-2220	Civil & Survey Drafting	SURV-1100, DRAD-1110, DRCG-1140	3.0
SEMESTER 4			
CIVL-1050	Construction Safety Policy & Procedures	–	3.0
CIVL-2200	Soils & Foundations	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ARTECCIVCT.html>

See page 20 for Gainful Employment Information.

**CERTIFICATE IN
ARCHITECTURAL TECHNOLOGY—ARCHITECTURAL RESIDENTIAL DRAFTING & DESIGN**

Career preparation and related courses *(require successful completion of a minimum of 19 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
ARCHITECTURAL TECHNOLOGY—ARCHITECTURAL RESIDENTIAL DRAFTING & DESIGN**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CIVL-1000	Materials	–	3.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
DRCG-1140	Interactive Computer Graphics—Introduction to 2D & 3D AutoCAD	–	4.0
SEMESTER 2			
DRAD-1120	Architectural Illustration 1	–	3.0
DRAD-1140	Residential Drafting & Design	DRAD-1110, DRCG-1140	3.0
DRAD-2110	Applied Building Construction	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ARTECRDDCT.html>

See page 20 for Gainful Employment Information.

Automated Systems Technology–Mechatronics

PROGRAM OPTIONS			
CREDENTIAL	TITLE	Credit Hours Required	NOTES
Associate of Applied Science	Automated Systems Technology–Mechatronics	67	The courses in this program make extensive use of computers for class learning, PLC programming, machine control, troubleshooting and machine simulation.
Certificate	Automated Systems Technology–Mechatronics	49	The courses in this program make extensive use of computers for class learning, PLC programming, machine control, troubleshooting and machine simulation.

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Art Knapp	586.445.7209	knappa@macomb.edu	South Campus
Professor	Anthony Ventura	586.445.7326	venturat@macomb.edu	South Campus
Professor	Ken Dulinski	586.445.7248	dulinskik@macomb.edu	South Campus

Program Description:

The Automated Systems Technology – Mechatronics program is a field of study that focuses on the integration of mechanical, electrical (electronics), fluid power (hydraulics or pneumatics), and computer technologies to control machine movements. The new term for this is “Mechatronics.” The students’ studies begin with courses in mechanics, sensors, basic electronics, pneumatics, control logic and robot programming and control. The student goes on to learn how to program a specific Programmable Logic Controller (PLC), and then writes and troubleshoots programs to control seven machines. The seven tasks – Pick and Place Feeding, Gauging, Indexing, Sorting and Queuing, Servo Robot Assembly, Torquing, and Parts Storage – are integrated into an assembly line that produces a real product.

Requirements & Specific Information:

Articulation agreements (available for viewing on the college website at www.macomb.edu) allow students to get Macomb credit for related high school courses. Contact your high school teacher or counselor for details or call the Engineering Technology Office at 586.445.7435.

Students interested in furthering their studies in the field of renewable energy may complement the Associate of Applied Science degrees in Automated Systems Technology–Mechatronics or Electronic Engineering Technology with the Renewable Energy Technology Certificate.

Career Opportunities:

Automated Systems Technology–Mechatronics—Associate of Applied Science: Job titles such as Mechanical Engineering Technicians, Electrical & Electronics Engineering Technicians, Robotics Technicians, and Electro-Mechanical Technicians are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Automated Systems Technology–Mechatronics—Certificate: Job titles such as Mechanical Engineering Technicians, Electrical & Electronics Engineering Technicians, Robotics Technicians, and Electro-Mechanical Technicians are attainable upon completion of this course of study. To learn more from a career specialist, contact the Office of Career Services at Center Campus H109, 586.445.7321; South Campus S147, 586.445.7321; careerservices@macomb.edu; or explore online at www.onetonline.org.

Transfer Pathways:

Some universities in the area (Wayne State University and Lawrence Technological University among them) offer a degree in Bachelor of Science Engineering Technology (BSET). The Electronic Engineering Technology program from Macomb is transferable in total to most of these universities and articulation (transfer) agreements are in place. However, students pursuing the BSET should refer to the specific agreement for their university of choice. The agreements are available online at www.macomb.edu, or can be picked up at the Engineering Technology office at South Campus in R-124. These students should also see the program advisor at their selected university as soon as possible.

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
AUTOMATED SYSTEMS TECHNOLOGY—MECHATRONICS**

Career preparation and related courses *(require successful completion of a minimum of 64 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
AUTOMATED SYSTEMS TECHNOLOGY—MECHATRONICS**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
All six of the following MECT-1### courses should be taken together in the same semester. Some Applied Technology (AT) courses are acceptable substitutions for MECT classes—see note below and contact program advisor for details.				–
MECT-1211	Mechatronics–AC/DC Electrical Systems ^{1,2}	–	–	1.0
MECT-1212	Mechatronics–Electrical Control Systems ^{1,2}	–	–	1.0
MECT-1213	Mechatronics–Electronic Sensors ^{1,2}	–	–	1.0
MECT-1214	Mechatronics–Pneumatics ^{1,2}	–	–	1.0
MECT-1215	Mechatronics–Automated Material Handling (robots) ^{1,2}	–	–	1.0
MECT-1216	Mechatronics–Mechanical Systems ^{1,2}	–	–	1.0
MECT-1310	Pneumatics Technology Fundamentals	–		3.0
MECT-1320	Industrial Hydraulic Fundamentals	–		3.0
TMTH-1150	RCL Analysis	–	–	4.0
CORE-1060	Industrial Computer Technology	–	–	4.0
CORE 1000	Industrial Technology Fundamentals	–	–	2.0
SEMESTER 2				
MECT-1310	Pneumatics Technology Fundamentals	–	–	3.0
MECT-1320	Industrial Hydraulic Fundamentals	–	–	3.0
MECT-2110	Mechatronics Programming 1–Siemens PLC ⁴	MECT-1211, MECT-1212, MECT-1213, MECT-1214, MECT-1215, and MECT-1216; or MECT-2640; or consent of program advisor	MECT-2112	3.0
MECT-2112	Mechatronics Programming 2–Siemens PLC ⁴	MECT-1211, MECT-1212, MECT-1213, MECT-1214, MECT-1215, and MECT-1216; or consent of program advisor	MECT-2110	3.0
ELEC-1161	Electronic Technology 1 ^{1,3,4}	–	–	3.0
ELEC-1171	Electronic Technology 2 ^{1,3,4}	ELEC-1161	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN AUTOMATED SYSTEMS TECHNOLOGY—MECHATRONICS				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 3				
Group II Course: PHYS-1180 –OR– PHSA-1050	College Physics 1 –OR– Physical Science	MATH-1000 with grade C or better, or higher level math course, or math placement score, or	–	4.0
Group V Course	Any PHED Wellness course—2000 or above	–	–	2.0-3.0
MECT-2210	Mechatronics System Operations 1–Siemens PLC ⁴	MECT-2112	MECT-2212	3.0
MECT-2212	Mechatronics System Operations 2–Siemens PLC ⁴	MECT-2112	MECT-2210	3.0
ELEC-1211	Digital Electronics Basics	ELEC-1171	–	3.0
SEMESTER 4				
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	–	3.0-4.0
ELEC-1182	Semiconductor Theory & Devices ⁴	ELEC-1171	–	3.0
ELEC-1192	Semiconductor Devices & Circuits ⁴	ELEC-1182	–	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	–	3.0-4.0

NOTES:

- ¹ High school students articulating into the Automated Systems Technology program may substitute equivalent courses taken at the high school level. Contact your high school teacher or counselor or the Macomb Engineering Technology Office at 586.445.7435 for details.
 - ² Student who took any of the following AT courses should check with the program advisor prior to selecting any MECT courses because these courses may substitute for the indicated MECT courses:
ATEE-1350 Electrical Direct Current Fundamentals; ATEE-1300 Electric Theory-Electrical Equipment & Introduction to Machine Circuits; ATEE-2670 Electrical - Industrial Controls; ATEP-1210 Fluid Power – Pneumatic Controls & Circuits; ATMT-1660 Millwright Theory – Millwright Theory 2
 - ³ Students entering the Automated Systems Technology program without any previous electronics knowledge should contact Macomb faculty about taking ELEC-1100 before ELEC-1161 and ELEC-1171.
 - ⁴ Some courses in this program are scheduled in the first 8 weeks or second 8 weeks of the semester. Students should be careful to take courses with the same section number in the same semester.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups II–V can be taken in any semester.
 - It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN AUTOMATED SYSTEMS TECHNOLOGY—MECHATRONICS

Career preparation and related courses *(require successful completion of a minimum of 46 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
AUTOMATED SYSTEMS TECHNOLOGY—MECHATRONICS**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
All six of the following MECT-1### courses should be taken together in the same semester. Some Applied Technology (AT) courses are acceptable substitutions for MECT classes—see note below and contact program advisor for details.				
MECT-1211	Mechatronics—AC/DC Electrical Systems ^{1,2}	–	–	1.0
MECT-1212	Mechatronics—Electrical Control Systems ^{1,2}	–	–	1.0
MECT-1213	Mechatronics—Electronic Sensors ^{1,2}	–	–	1.0
MECT-1214	Mechatronics—Pneumatics ^{1,2}	–	–	1.0
MECT-1215	Mechatronics—Automated Material Handling (robots) ^{1,2}	–	–	1.0
MECT-1216	Mechatronics—Mechanical Systems ^{1,2}	–	–	1.0
TMTH-1150	RCL Analysis	–	–	4.0
CORE-1060	Industrial Computer Technology	–	–	4.0
SEMESTER 2				
MECT-1310	Pneumatics Technology Fundamentals	–	–	3.0
MECT-1320	Industrial Hydraulic Fundamentals	–	–	3.0
MECT-2110	Mechatronics Programming 1—Siemens PLC ⁴	MECT-1211, MECT-1212, MECT-1213, MECT-1214, MECT-1215, and MECT-1216; or MECT-2640; or consent of program advisor	MECT-2112	3.0
MECT-2112	Mechatronics Programming 2—Siemens PLC ⁴	MECT-1211, MECT-1212, MECT-1213, MECT-1214, MECT-1215, and MECT-1216; or consent of program advisor	MECT-2110	3.0
CORE-1000	Industrial Technology Fundamentals	–	–	2.0
ELEC-1161	Electrical Technology 1 ^{1,3,4}	–	–	3.0
ELEC-1171	Electronic Technology 2 ^{1,3,4}	ELEC-1161	–	3.0
SEMESTER 3				
MECT-2210	Mechatronics System Operations 1—Siemens PLC ⁴	MECT-2112	MECT-2212	3.0
MECT-2212	Mechatronics System Operations 2—Siemens PLC ⁴	MECT-2112	MECT-2210	3.0
ELEC-1211	Digital Electronics Basics	ELEC-1171	–	3.0
SEMESTER 4				
ELEC-1182	Semiconductor Theory & Devices ⁴	ELEC-1171	–	3.0
ELEC-1192	Semiconductor Devices & Circuits ⁴	ELEC-1182	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ASTMECTCT.html>

See page 20 for Gainful Employment Information.

Automotive Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Automotive Technology	67	–
Certificate	Automotive Technology	31-34	–
Certificate	Brakes & Suspension, Driveability & Diagnosis, Driveline, Electrical & Air Conditioning, Engines	13-16	–
Skill Specific Certificate	Alternative Fuels	9	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Dan Claus	586.445.7010	clausd@macomb.edu	South Campus
Professor	Gordon Crandell	586.445.7440	crandellg@macomb.edu	South Campus
Professor	Kurtis LaHaie	586.445.7267	lahaiek@macomb.edu	South Campus
Professor	Dan Prater	586.445.7015	praterd@macomb.edu	South Campus
Professor	Dave Roland	586.445.7379	rolandd@macomb.edu	South Campus
Professor	Matt Rossow	586.445.7227	rossowm@macomb.edu	South Campus
Professor	Stan Urban	586.445.7290	urbans@macomb.edu	South Campus

Program Description:

The Automotive Technology program is designed to provide students with the opportunity to develop the skills, knowledge and abilities required for entry level positions in the automotive industry. Students successfully completing this program will have the technical skills required to properly diagnose, repair, and maintain the parts and systems comprising the modern automobile.

Accreditation:

The Associate of Applied Science degree in Automotive Technology program and the certificate and skill specific certificate programs are ASE (National Institute for Automotive Service Excellence) certified through NATEF (National Automotive Technicians Education Foundation), 101 Blue Seal Drive, Suite 101, Leesburg, Virginia 20175, 703.669.6650.

Career Opportunities:

Automotive Technology—Associate of Applied Science: Job titles such as Automotive Service Technicians and Mechanics and Automotive Engineering Technicians are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Automotive Technology—Certificate: Job titles such as Automotive Service Technicians and Mechanics are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Automotive Technology—Alternative Fuels- Skill Specific Certificate: Job titles such as Automotive Service Technicians and Mechanics are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Automotive Technology—Brakes and Suspension—Certificate: Job titles such as Automotive Service Technicians and Mechanics are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Automotive Technology—Driveability & Diagnosis—Certificate: Job titles such as Automotive Service Technicians and Mechanics are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Automotive Technology—Driveline—Certificate: Job titles such as Automotive Service Technicians and Mechanics are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Automotive Technology—Electrical & Air Conditioning—Certificate: Job titles such as Automotive Service Technicians and Mechanics are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Automotive Technology—Engines—Certificate: Job titles such as Automotive Service Technicians and Mechanics are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN AUTOMOTIVE TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 67 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN AUTOMOTIVE TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
AUTO-1000	Automotive Systems	–	3.0
AUTO-1010	Automotive Electrical Systems	–	3.0
AUTO-1100 ¹	Automotive Brake Systems	–	3.0
AUTO-1110 ¹	Automotive Suspension Component Service	–	2.0
AUTO-1200 ⁵	Automotive Engines	–	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 2			
AUTO-1520 ²	Automotive Fuel Systems	AUTO-1000, AUTO-1010, AUTO-1030	3.0
AUTO-1330 ³	Automotive Manual Transmission & Powertrain Systems	AUTO-1000	3.0
AUTO-1400 ⁴	Automotive Starting & Charging Systems	AUTO-1000, AUTO-1010	2.0
AUTO-1320 ³	Automatic Transmission Theory & Diagnosis		2.0
AUTO-1120 ¹	Automotive Suspension Alignment Procedures	AUTO-1110	2.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0

SEMESTER 3			
AUTO-1420 ⁴	Automotive Air Conditioning Theory & Service	AUTO-1000, AUTO-1010, AUTO-1030	3.0
AUTO-2210 ⁵	Automotive Lower Engine Service	AUTO-1200	3.0
AUTO-2190	Automotive Brakes & Suspension Laboratory	AUTO-1100, AUTO-1110, AUTO-1120 or related work experience	3.0
AUTO-2490	Automotive Electrical & Air Conditioning Laboratory	AUTO-1030, AUTO-1400, AUTO-1420, AUTO-2410 or related work experience	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 4			
AUTO-1030 ⁴	Automotive Electronics	AUTO-1000, AUTO-1010	3.0
AUTO-1530 ²	Automotive Ignition & Emissions Systems	AUTO-1000, AUTO-1010, AUTO-1520	3.0
AUTO-2200 ⁵	Automotive Upper Engine Service	AUTO-1200	3.0
AUTO-2300 ³	Automotive Rear Wheel Drive Automatic Transmission Service	AUTO-1320	2.0
AUTO-2290	Automotive Engine Laboratory	AUTO-1200, AUTO-2200, AUTO-2210	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 5			
AUTO-2500 ²	Automotive Driveability & Diagnosis	AUTO-1520, AUTO-1530 or related work experience	3.0
AUTO-2410 ⁴	Advanced Automotive Electronics	AUTO-1030 or related work experience	2.0
AUTO-2310 ³	Automotive Front Wheel Drive Automatic Transmission Service	AUTO-1320	2.0
AUTO-1440	Hybrid Electric Vehicle Fundamental	–	3.0
AUTO-2390	Automotive Driveline Laboratory	AUTO-1320, AUTO-1330, AUTO-2300, AUTO-2310	3.0
AUTO-2590	Automotive Driveability Laboratory	AUTO-1520, AUTO-1530, AUTO-2500 or related work experience	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0

NOTES:

- Of the five specialty groups listed below, choose four specialty groups:
 - ¹ Brakes & Suspension (AUTO-1100, AUTO-1110, AUTO-1120)
 - ² Driveability & Diagnosis (AUTO-1520, AUTO-1530, AUTO-2500)
 - ³ Driveline (AUTO-1320, AUTO-1330, AUTO-2300, AUTO-2310)
 - ⁴ Electrical & Air Conditioning (AUTO-1030, AUTO-1400, AUTO-1420, AUTO-2410)
 - ⁵ Engines (AUTO-1200, AUTO-2200, AUTO-2210)
- Choose three automotive laboratory classes.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups II–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
AUTOMOTIVE TECHNOLOGY**

Career preparation and related courses *(require successful completion of a minimum of 31 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
AUTOMOTIVE TECHNOLOGY**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
AUTO-1000	Automotive Systems	–	3.0
AUTO-1010	Automotive Electrical Systems	–	3.0
AUTO-1200	Automotive Engines	–	3.0
AUTO-1100	Automotive Brake Systems	–	3.0
AUTO-1110	Automotive Suspension Component Service	–	2.0
SEMESTER 2			
AUTO-1520	Automotive Fuel Systems	AUTO-1000, AUTO-1010, AUTO-1030	3.0
AUTO-1330	Automotive Manual Transmission & Powertrain Systems	AUTO-1000	3.0
AUTO-1120	Automotive Suspension Alignment Procedures	AUTO-1110	2.0
AUTO-1320	Automatic Transmission Theory & Diagnosis	–	2.0
AUTO-1400	Automotive Starting & Charging Systems	AUTO-1000, AUTO-1010	2.0
SEMESTER 3			
AUTO-1420	Automotive Air Conditioning Theory & Service	AUTO-1000, AUTO-1010, AUTO-1030	3.0
AUTO-2210	Automotive Lower Engine Service	AUTO-1200	3.0
AUTO-2190	Automotive Brakes & Suspension Laboratory	AUTO-1100, AUTO-1110, AUTO-1120 or related work experience	3.0
AUTO-2490	Automotive Electrical & Air Conditioning Laboratory	AUTO-1030, AUTO-1400, AUTO-1420, AUTO-2410 or related work experience	3.0
SEMESTER 4			
AUTO-2300	Automotive Rear Wheel Drive Automatic Transmission Service	AUTO-1320	2.0
AUTO-1030	Automotive Electronics	AUTO-1000, AUTO-1010	3.0
AUTO-1530	Automotive Ignition & Emissions Systems	AUTO-1000, AUTO-1010, AUTO-1520	3.0
AUTO-2200	Automotive Upper Engine Service	AUTO-1200	3.0
AUTO-2290	Automotive Engine Laboratory	AUTO-1200, AUTO-2200, AUTO-2210	3.0
SEMESTER 5			
AUTO-2500	Automotive Driveability & Diagnosis	AUTO-1520, AUTO-1530 or related work experience	3.0
AUTO-2310	Automotive Front Wheel Drive Automatic Transmission Service	AUTO-1320	2.0
AUTO-2410	Advanced Automotive Electronics	AUTO-1030 or related work experience	2.0
AUTO-1440	Hybrid Electric Vehicle Fundamentals	–	3.0
AUTO-2390	AUTO-1320, AUTO-1330, AUTO-2300, AUTO-2310	–	3.0
AUTO-2590	Automotive Driveability Laboratory	AUTO-1520, AUTO-1530, AUTO-2500 or related work experience	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/AUTCT.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—BRAKES & SUSPENSION

Career preparation and related courses *(require successful completion of a minimum of 13 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—BRAKES & SUSPENSION			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
AUTO-1000	Automotive Systems	–	3.0
AUTO-1010	Automotive Electrical Systems	–	3.0
AUTO-1100	Automotive Brake Systems	–	3.0
AUTO-1110	Automotive Suspension Component Service	–	2.0
SEMESTER 2			
AUTO-1120	Automotive Suspension Alignment Procedures	–	2.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/AUTBKSCP.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—DRIVEABILITY & DIAGNOSIS

Career preparation and related courses *(require successful completion of a minimum of 15 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—DRIVEABILITY & DIAGNOSIS			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
AUTO-1000	Automotive Systems	–	3.0
AUTO-1010	Automotive Electrical Systems	–	3.0
SEMESTER 2			
AUTO-1520	Automotive Fuel Systems	AUTO-1000, AUTO-1010, AUTO-1030	3.0
SEMESTER 3			
AUTO-1530	Automotive Ignition & Emissions Systems	AUTO-1000, AUTO-1010, AUTO-1520	3.0
SEMESTER 4			
AUTO-2500	Automotive Driveability & Diagnosis	AUTO-1520, AUTO-1530 or related work experience	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/AUTDRVCP.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—DRIVELINE

Career preparation and related courses *(require successful completion of a minimum of 15 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—DRIVELINE				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
AUTO-1000	Automotive Systems	–	–	3.0
AUTO-1010	Automotive Electrical Systems	–	–	3.0
AUTO-1320	Automatic Transmission Theory & Diagnosis	–	–	2.0
SEMESTER 2				
AUTO-1330	Automotive Manual Transmission & Powertrain Systems	AUTO-1000	–	3.0
AUTO-2300	Automotive Rear Wheel Drive Automatic Transmission Service	AUTO-1320	–	2.0
AUTO-2310	Automotive Front Wheel Drive Automatic Transmission Service	AUTO-1320	–	2.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/AUTDLCP.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—ELECTRICAL & AIR CONDITIONING

Career preparation and related courses *(require successful completion of a minimum of 16 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—ELECTRICAL & AIR CONDITIONING

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
AUTO-1000	Automotive Systems	–	3.0
AUTO-1010	Automotive Electrical Systems	–	3.0
SEMESTER 2			
AUTO-1030	Automotive Electronics	AUTO-1000, AUTO-1010	3.0
AUTO-1400	Automotive Starting & Charging Systems	AUTO-1000, AUTO-1010	2.0
AUTO-2410	Advanced Automotive Electronics	AUTO-1030 or related work experience	2.0
SEMESTER 3			
AUTO-1420	Automotive Air Conditioning Theory & Service	AUTO-1000, AUTO-1010, AUTO-1030	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/AUTEACCP.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—ENGINES

Career preparation and related courses *(require successful completion of a minimum of 15 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—ENGINES

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
AUTO-1000	Automotive Systems	–	3.0
AUTO-1010	Automotive Electrical Systems	–	3.0
AUTO-1200	Automotive Engines	–	3.0
SEMESTER 2			
AUTO-2210	Automotive Lower Engine Service	AUTO-1200	3.0
AUTO-2200	Automotive Upper Engine Service	AUTO-1200	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/AUTENGCP.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—ALTERNATIVE FUELS

Career preparation and related courses *(require successful completion of a minimum of 9 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN AUTOMOTIVE TECHNOLOGY—ALTERNATIVE FUELS

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
AUTO-1440	Hybrid Electric Vehicle Fundamentals	AUTO-1000, AUTO-1010, AUTO-1030 AUTO-1320, AUTO-1400	3.0
SEMESTER 2			
AUTO-1550	Diesel Engine Theory & Fuel Systems ¹	AUTO-1000, AUTO-1010	3.0
AUTO-2440	Hybrid Electric Vehicle Power Management	AUTO-1440	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/AUTAFSK.html>

See page 20 for Gainful Employment Information.

Behavioral Sciences

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Certificate	Behavioral Sciences	30	Minimum Grade Point Average of 2.0 Minimum of 15 semester hours of credit earned at Macomb. Attendance at Macomb during semester in which requirements for certificate are completed.

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

This interdisciplinary certificate includes a range of courses designed to introduce students to the Social Science disciplines. These courses will help to prepare students interested in pursuing a career or advanced degree in the Behavioral Sciences.

Requirements & Specific Information:

Students electing a Certificate in Behavioral Sciences should maintain close contact with an academic advisor or counselor to assure construction of a plan of studies harmonious with individual interests and needs.

Students are advised that completion of a Certificate in Behavioral Sciences may not necessarily satisfy another college's requirements toward a bachelor's degree in Behavioral Sciences.

Career Opportunities:

Behavioral Sciences–Certificate: Job titles such as Residential Advisors, Social Science Research Assistants, and Social & Human Services Assistants are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

CERTIFICATE IN BEHAVIORAL SCIENCES

Career preparation and related courses *(require successful completion of a minimum of 30 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN BEHAVIORAL SCIENCES

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
PSYC-1010	Introductory Psychology	–	4.0
ANTH-1000	Introduction to Anthropology	–	4.0
SOCY-1010	Principles of Sociology	–	4.0
SEMESTER 2			
And 18–20 credit hours from the following courses:			
ANTH-2220	Introduction to Archaeology	–	4.0
SOCY-1100	Modern Social Problems	–	3.0
SOCY-1210	Introduction to Social Work	–	4.0
SOCY-2000	Sociology of Health & Human Behavior	–	4.0
SOCY-2121	Sociology of Aging	–	3.0
SOCY-2450	Marriage & the Family	–	3.0
SOCY-2550	Race & Ethnic Relations	–	3.0
PSYC-2170	Psychological Statistics	PSYC-1010	4.0
PSYC-2210	Child Growth & Development	PSYC-1010	3.0
PSYC-2220	Psychology of Adolescence	PSYC-1010	3.0
PSYC-2300	Psychology of Adjustment	PSYC-1010	3.0
PSYC-2400	Industrial-Organizational Psychology	PSYC-1010	3.0
PSYC-2450	Lifespan Development	PSYC-1010	3.0
PSYC-2500	Human Sexuality	PSYC-1010	3.0
PSYC-2550	Psychology of Gender	PSYC-1010	3.0
PSYC-2600	Social Psychology	PSYC-1010	3.0
PSYC-2700	Psychology of Health: Mind & Body Interaction	PSYC-1010	3.0
PSYC-2750	Brain & Behavior	PSYC-1010	4.0
PSYC-2760	Neuropsychology	PSYC-1010	4.0
PSYC-2800	Abnormal Psychology	PSYC-1010	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/BEHSCICT.html>

See page 20 for Gainful Employment Information.

Biological Sciences

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Science	Biological Sciences	62	—

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Associate Dean	—	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	—	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Biological Sciences program is designed to provide students with the basic competencies, knowledge, and skills essential to transfer to a baccalaureate degree program in Biological Sciences.

Career Opportunities:

Biological Sciences—Associate of Science: Job titles such as Biotechnologist, Medical & Clinical Laboratory Technician, and Environmental Technician are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF SCIENCE IN BIOLOGICAL SCIENCES

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF SCIENCE IN BIOLOGICAL SCIENCES			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group II Course: BIOL-1000	General Biology 1	—	4.0
Group II Course: CHEM-1170	General Chemistry 1	CHEM-1050 with grade C or better and MATH-1000 proficiency (demonstrated by math placement score, completing MATH-1000 with grade C or better, being enrolled in higher math, or having higher level math on transcript); or a passing score on the American Chemical Society Placement Test	4.0
Group II Course: MATH-1760	Analytic Geometry & Calculus 1	Grade C or better in MATH-1430 or MATH-1460, or equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group I Course: ENGL-1180 —OR— ENGL-1210	Communications 1 —OR— Composition 1	Placement, or ENGL-0050 or EAPP-1500 with Grade C- or better	3.0-4.0

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF SCIENCE IN BIOLOGICAL SCIENCES			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 2			
Group II Course: BIOL-1010	General Biology 2	–	4.0
Group II Course: CHEM-1180	General Chemistry 2	CHEM-1170 with grade C or better	4.0
Group I Course: ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
SEMESTER 3			
Group II Course: BIOL-2710 –OR– BIOL-2400	Human Physiological Anatomy –OR– General Microbiology ¹	– BIOL-1000	4.0-6.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
PHYS-1180	College Physics 1	MATH-1000 with grade C or better, or higher level math course, or math placement score	4.0
CHEM-2260	Organic Chemistry 1	CHEM-1180 with grade C or better	4.0
Group V Course	Any PHED Wellness Course—2000 or above	–	2.0-3.0
SEMESTER 4			
CHEM-2270	Organic Chemistry Laboratory	CHEM-2260 with grade C or better	2.0
CHEM-2280	Organic Chemistry 2	CHEM-2260 with grade C or better	4.0
PHYS-1190	College Physics 2	PHYS-1180 with grade C or better	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0

NOTES:

- ¹ For Wayne State, second year Biology option should be chosen based on intended transfer destination, consult with a counselor or advisor.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group III–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Business Management

PROGRAM OPTIONS			
CREDENTIAL	TITLE	Credit Hours Required	NOTES
Associate of Business Administration	Business Management	62	Designed for transferring into a Bachelor of Business Administration or entry into the field of Management.
Certificate	Business Management	42-43	Designed for entry-level positions or furthering one's career.
Skill Specific Certificate	Business Management—New Supervisor	9	Design for entry-level positions or furthering one's career.

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Tanya Balcom	586.226.4830	balcomt@macomb.edu	Center Campus

Program Description:

The Business Management program is designed to provide both a practical and theoretical management background for today's business world. This program enables students to enter the field of management and/or further their careers as supervisors and managers. Important management applications and techniques, history, relevant laws, entrepreneurship, and human and organizational relationships are emphasized.

Career Opportunities:

Business Management—Associate of Business Administration: Job titles such as General & Operations Managers and Managers (other) are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Business Management—Certificate: Job titles such as General & Operations Managers and Managers (other) are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Business Management—New Supervisor—Skill Specific Certificate: Job titles such as General & Operations Managers and Managers (other) are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF BUSINESS ADMINISTRATION IN
BUSINESS MANAGEMENT**

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF BUSINESS ADMINISTRATION IN BUSINESS MANAGEMENT**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
MGMT-1010	Principles of Management	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SEMESTER 2			
ACCT-1050 –OR– ACCT-1070 –OR– ACCT-1080	Financial Record Keeping –OR– Accounting for Entrepreneurs –OR– Principles of Accounting	–	3.0-4.0
MGMT-1150	Personnel & Human Resource Management	–	3.0
MGMT-1180	Human Relations	–	3.0
BCOM-2050	Business Communications	–	4.0
MKTG-1010	Principles of Marketing	–	3.0
SEMESTER 3			
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course: ECON-1160 –OR– PSYC-1010	Principles of Economics 1 –OR– Introductory Psychology	– –	3.0-4.0
MGMT-1210	Entrepreneurship & Small Business Management	ACCT-1050, ACCT-1070 or ACCT-1080	3.0
BLAW-1080	Business Law 1	–	4.0
MGMT-2100	Effective Organizational Behavior & Team Development	MGMT-1010	3.0
SEMESTER 4			
MGMT-2000 –OR– ITCS-1400	Business Management Software Applications –OR– Micros in Business	MGMT-1010 & ITCS-1010 –OR– ITCS-1010 or ITCS-2335	3.0-4.0
MGMT-2110	Management Decision Making & Critical Analysis	MGMT-1010	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.

- In programs where the combination of required Career Preparation and related courses and Arts and Sciences courses do not equal a minimum of 62 credit hours, an academic advisor, counselor or program advisor will aid in the selection of appropriate electives.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN BUSINESS MANAGEMENT

Career preparation and related courses *(require successful completion of a minimum of 42 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN BUSINESS MANAGEMENT			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SEMESTER 2			
ACCT-1050 –OR– ACCT-1070 –OR– ACCT-1080	Financial Record Keeping –OR– Accounting for Entrepreneurs –OR– Principles of Accounting	–	3.0-4.0
MGMT-1150	Personnel & Human Resource Management	–	3.0
BLAW-1080	Business Law 1	–	4.0
BCOM-2050	Business Communications	–	4.0
MGMT-1180	Human Relations	–	3.0
MGMT-1210	Entrepreneurship & Small Business Management	ACCT-1050, ACCT-1070 or ACCT-1080	3.0
SEMESTER 3 & 4			
MGMT-2000 –OR– ITCS-1400	Business Management Software Applications –OR– Micros in Business	MGMT-1010 & ITCS-1010 –OR– ITCS-1010 or ITCS-2335	3.0-4.0
MGMT-2100	Effective Organizational Behavior & Team Development	MGMT-1010	3.0
MGMT-2110	Management Decision Making & Critical Analysis	MGMT-1010	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/BMGCT.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN BUSINESS MANAGEMENT—NEW SUPERVISOR

Career preparation and related courses *(require successful completion of a minimum of 9 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN BUSINESS MANAGEMENT—NEW SUPERVISOR			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MGMT-1010	Principles of Management	–	3.0
MGMT-1150	Personnel & Human Resource Management	–	3.0
MGMT-2110	Management Decision Making & Critical Analysis	MGMT-1010	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/BMGTNSSK.html>

See page 20 for Gainful Employment Information.

Chemistry

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Science	Chemistry	64	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Chemistry program is designed to provide students with the basic competencies, knowledge, and skills essential to transfer to a baccalaureate degree program in Chemistry.

Career Opportunities:

Chemistry–Associate of Science: Job titles such as Chemical Technician and Chemical Engineering Technician are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF SCIENCE IN CHEMISTRY

Career preparation and related courses *(require successful completion of a minimum of 64 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF SCIENCE IN CHEMISTRY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group II Course: CHEM-1170	General Chemistry 1	CHEM-1050 with grade C or better and MATH-1000 proficiency (demonstrated by math placement score, completing MATH-1000 with grade C or better, being enrolled in higher math, or having higher level math on transcript); or a passing score on the American Chemical Society Placement Test	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
SEMESTER 2			
Group II Course: PHYS-1180	College Physics 1	MATH-1000 with grade C or better, or higher level math course, or math placement score	4.0
Group II Course: MATH-1770	Analytic Geometry & Calculus 2	Grade C or better in MATH-1760, or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group II Course: CHEM-1180	General Chemistry 2	CHEM-1170 with grade C or better	4.0
Group I Course: ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
SEMESTER 3			
Group II Course: CHEM-2260	Organic Chemistry 1	CHEM-1180 with grade C or better	4.0
Group II Course: PHYS-2220	Analytical Physics 1	PHYS-1180 with grade C or better, or passing score on the Physics Area Placement Test and MATH-1760 with grade C or better	5.0
Group II Course: MATH-2000	Introduction to Linear Algebra	Grade C or better in MATH-1760 or equivalent college course, or an acceptable score on a placement or prerequisite exam	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF SCIENCE IN CHEMISTRY**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 4			
Group II Course: CHEM-2270	Organic Chemistry Laboratory	CHEM-2260 with grade C or better	2.0
Group II Course: CHEM-2280	Organic Chemistry 2	CHEM-2260 with grade C or better	4.0
Group II Course: MATH-2760	Analytic Geometry & Calculus 3	Grade C or better in MATH-1770 or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group II Course: PHYS-2230	Analytical Physics 2	PHYS-2220 with grade C or better and MATH-1760 with grade C or better	5.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	-	3.0-4.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 67 total credit hours for the associate degree. Arts & Sciences Group III–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Civil Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	Credit Hours Required	NOTES
Associate of Applied Science	Civil Technology	62	–
Certificate	Civil Technology	37	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Christopher Christian	586.445.7480	christianc@macomb.edu	South Campus

Program Description:

The Civil Technology program is geared to train civil engineering technicians for the construction industry. Civil Engineering technicians work in support of civil engineers and architects who supervise the hard hats engaged in this area of employment.

Career Opportunities:

Civil Technology—Associate of Applied Science: Job titles such as Civil Engineering Technicians are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Civil Technology—Certificate: Job titles such as Civil Engineering Technicians are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Some universities in the area (Wayne State University and Lawrence Technological University among them) offer a degree in Bachelor of Science Engineering Technology (BSET). The Electronic Engineering Technology program from Macomb is transferable in total to most of these universities and articulation (transfer) agreements are in place. However, students pursuing the BSET should refer to the specific agreement for their university of choice. The agreements are available online at www.macomb.edu, or can be picked up at the Engineering Technology office at South Campus in R124. These students should also see the program advisor at their selected university as soon as possible.

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN CIVIL TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN CIVIL TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CIVL-1000	Materials	–	3.0
CIVL-1010	Civil Technology Seminar	–	1.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
SURV-1100	Elementary Surveying	–	3.0
Group II Course: MATH-1430	College Trigonometry	Grade C or better in MATH-1410 or an equivalent college course or an acceptable score on a placement or prerequisite exam	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 2			
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SURV-1200	Route Surveying	SURV-1100	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 3			
ATTR-1150	Technical Report Writing	–	2.0
CIVL-1050	Construction Safety Policy & Procedures	–	3.0
CIVL-2200	Soils & Foundations	–	3.0
DRAD-2230	Construction Specifications	–	3.0
Group III Course: POLS-1200	Local & State Government	–	3.0
SEMESTER 4			
CIVL-2210	Drainage & Geology	–	3.0
CIVL-2220	Materials Testing	CIVL-1000	3.0
SURV-2220	Civil & Survey Drafting	SURV-1100, DRAD-1110, DRCG-1140	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2#### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Elective(s)	If required to meet minimum degree requirements. Suggested Courses: ENVS-1050, GEOL-1080, QUAL-2400, ENGR-1000	–	Varies

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups II–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN CIVIL TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 37 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN CIVIL TECHNOLOGY			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CIVL-1000	Materials	–	3.0
CIVL-1010	Civil Technology Seminar	–	1.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
SURV-1100	Elementary Surveying	–	3.0
SEMESTER 2			
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
SURV-1200	Route Surveying	SURV-1100	3.0
SEMESTER 3			
ATTR-1150	Technical Report Writing	–	2.0
CIVL-1050	Construction Safety Policy & Procedures	–	3.0
CIVL-2200	Soils & Foundations	–	3.0
DRAD-2230	Construction Specifications	–	3.0
SEMESTER 4			
CIVL-2210	Drainage & Geology	–	3.0
CIVL-2220	Materials Testing	CIVL-1000	3.0
SURV-2220	Civil & Survey Drafting	SURV-1100, DRAD-1110, DRCG-1140	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CIVILCT.html>

See page 20 for Gainful Employment Information.

Climate Control Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	Credit Hours Required	NOTES
Associate of Applied Science	Climate Control Technology	62	–
Certificate	Climate Control Technology	42	–
Certificate	Air Conditioning, Heating, Refrigeration, HVAC Installation & Service Technician	24-31	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Tom Schafer	586.445.7452	schafert@macomb.edu	South Campus

Program Description:

The Climate Control Technology program is designed to prepare students for a career in the fields of air conditioning, heating, and refrigeration.

Career Opportunities:

Climate Control Technology—Associate of Applied Science: Job titles such as Heating, Air Conditioning & Refrigeration Mechanics and Installers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Climate Control Technology—Certificate: Job titles such as Heating & Air Conditioning Mechanics and Installers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Climate Control Technology—Air Conditioning- Certificate: Job titles such as Heating & Air Conditioning Mechanics and Installers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Climate Control Technology—Heating—Certificate: Job titles such as Heating & Air Conditioning Mechanics and Installers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Climate Control Technology—HVAC Installation & Service Technician—Certificate: Job titles such as Heating, Air Conditioning & Refrigeration Mechanics and Installers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Climate Control Technology—Refrigeration—Certificate: Job titles such as Refrigeration Mechanics and Installers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

ASSOCIATE OF APPLIED SCIENCE IN CLIMATE CONTROL TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN CLIMATE CONTROL TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CLCT-1200	Fundamentals of Air Conditioning & Refrigeration	–	3.0
CLCT-1600	Duct Layout & Fabrication	–	3.0
CLCT-1650	Systems Design of Heating & Air Conditioning	–	3.0
CLCT-1700	Fundamentals of Controls	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
CLCT-1300	Refrigeration 1	CLCT-1200, CLCT-1700 or related work experience	3.0
CLCT-1400	Air Conditioning 1	CLCT-1200, CLCT-1700 or related work experience	3.0
CLCT-1500	Heating 1	CLCT-1700 or related work experience	3.0
CLCT-1750	Intermediate Controls	CLCT-1700 or related work experience	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 3			
CLCT-2300	Refrigeration 2	CLCT-1300, CLCT-1650, CLCT-1750 or related work experience	3.0
CLCT-2400	Air Conditioning 2	CLCT-1400, CLCT-1650, CLCT-1750 or related work experience	3.0
CLCT-2550	Steam & Hot Water Heating Systems	CLCT-1500, CLCT-1650, CLCT-1750 or related work experience	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
SEMESTER 4			
CLCT-2350	Mechanical Codes	CLCT-1200, CLCT-1500 or industry field experience	3.0
CLCT-2500	Heating 2	CLCT-1500, CLCT-1650, CLCT-1750 or related work experience	3.0
CLCT-2700	Advanced Controls	CLCT-1300, CLCT-1400, CLCT-1750, CLCT-2550 or related work experience	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Elective(s)	If required to meet minimum degree requirements.	–	Varies

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN CLIMATE CONTROL TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 42 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN CLIMATE CONTROL TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CLCT-1200	Fundamentals of Air Conditioning & Refrigeration	–	3.0
CLCT-1600	Duct Layout & Fabrication	–	3.0
CLCT-1650	Systems Design of Heating & Air Conditioning	–	3.0
CLCT-1700	Fundamentals of Controls	–	3.0
SEMESTER 2			
CLCT-1300	Refrigeration 1	CLCT-1200, CLCT-1700 or related work experience	3.0
CLCT-1400	Air Conditioning 1	CLCT-1200, CLCT-1700 or related work experience	3.0
CLCT-1500	Heating 1	CLCT-1700 or related work experience	3.0
CLCT-1750	Intermediate Controls	CLCT-1700 or related work experience	3.0
SEMESTER 3			
CLCT-2300	Refrigeration 2	CLCT-1300, CLCT-1650, CLCT-1750 or related work experience	3.0
CLCT-2400	Air Conditioning 2	CLCT-1400, CLCT-1650, CLCT-1750 or related work experience	3.0
CLCT-2550	Steam & Hot Water Heating Systems	CLCT-1500, CLCT-1650, CLCT-1750 or related work experience	3.0
SEMESTER 4			
CLCT-2350	Mechanical Codes	CLCT-1200, CLCT-1500 or industry field experience	3.0
CLCT-2500	Heating 2	CLCT-1500, CLCT-1650, CLCT-1750 or related work experience	3.0
CLCT-2700	Advanced Controls	CLCT-1300, CLCT-1400, CLCT-1750, CLCT-2550 or related work experience	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CLCTCT.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN AIR CONDITIONING

Career preparation and related courses *(require successful completion of a minimum of 24 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN AIR CONDITIONING

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CLCT-1200	Fundamentals of Air Conditioning & Refrigeration	–	3.0
CLCT-1650	Systems Design of Heating & Air Conditioning	–	3.0
CLCT-1700	Fundamentals of Controls	–	3.0
SEMESTER 2			
CLCT-1400	Air Conditioning 1	CLCT-1200, CLCT-1700	3.0
CLCT-1600	Duct Layout & Fabrication	–	3.0
CLCT-1750	Intermediate Controls	CLCT-1700 or related work experience	3.0
SEMESTER 3			
CLCT-2350	Mechanical Codes	CLCT-1300, CLCT-1650, CLCT-1750 or related work experience	3.0
CLCT-2400	Air Conditioning 2	CLCT-1700 or related work experience	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CLCTACCT.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN HEATING

Career preparation and related courses *(require successful completion of a minimum of 27 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN HEATING			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CLCT-1200	Fundamentals of Air Conditioning & Refrigeration	–	3.0
CLCT-1650	Systems Design of Heating & Air Conditioning	–	3.0
CLCT-1700	Fundamentals of Controls	–	3.0
SEMESTER 2			
CLCT-1500	Heating 1	CLCT-1700 or related work experience	3.0
CLCT-1600	Duct Layout & Fabrication	–	3.0
CLCT-1750	Intermediate Controls	CLCT-1700 or related work experience	3.0
SEMESTER 3			
CLCT-2350	Mechanical Codes	CLCT-1300, CLCT-1650, CLCT-1750 or related work experience	3.0
CLCT-2500	Heating 2	CLCT-1500, CLCT-1650, CLCT-1750 or related work experience	3.0
CLCT-2550	Steam & Hot Water Heating Systems	CLCT-1500, CLCT-1650, CLCT-1750 or related work experience	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CLCTHTCT.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN HVAC INSTALLATION & SERVICE TECHNICIAN

Career preparation and related courses *(require successful completion of a minimum of 31 credit hours)*

CERTIFICATE IN HVAC INSTALLATION & SERVICE TECHNICIAN			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CLCT-1200	Fundamentals of Air Conditioning & Refrigeration	–	3.0
ATBC-1100	Blueprint & Math-Residential	–	2.0
ATTR-1600	Industrial Safety-Skilled Traded	–	2.0
SEMESTER 2			
CLCT-1600	Duct Layout & Fabrication	–	3.0
CLCT-1650	Systems Design of Heating & Air Conditioning	–	3.0
SEMESTER 3			
CLCT-1300	Refrigeration 1	CLCT-1200, CLCT-1700 or related work experience	3.0
CLCT-1700	Fundamentals of Controls	–	3.0
SEMESTER 4			
CLCT-1400	Air Conditioning 1	CLCT-1200, CLCT-1700 or related work experience	3.0
CLCT-1500	Heating 1	CLCT-1700 or related work experience	3.0
SEMESTER 5			
CLCT-1750	Intermediate Controls	CLCT-1700 or related work experience	3.0
CLCT-2550	Steam & Hot Water Heating Systems	CLCT-1500, CLCT-1650, CLCT-1750 or related work experience	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CLCTHVCT.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN REFRIGERATION

Career preparation and related courses *(require successful completion of a minimum of 24 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN REFRIGERATION

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CLCT-1200	Fundamentals of Air Conditioning & Refrigeration	–	3.0
CLCT-1650	Systems Design of Heating & Air Conditioning	–	3.0
CLCT-1700	Fundamentals of Controls	–	3.0
SEMESTER 2			
CLCT-1300	Refrigeration 1	CLCT-1200, CLCT-1700 or related work experience	3.0
CLCT-1600	Duct Layout & Fabrication	–	3.0
CLCT-1750	Intermediate Controls	CLCT-1700 or related work experience	3.0
SEMESTER 3			
CLCT-2300	Refrigeration 2	CLCT-1300, CLCT-1650, CLCT-1750 or related work experience	3.0
CLCT-2350	Mechanical Codes	CLCT-1400, CLCT-1650, CLCT-1750 or related work experience	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CLCTRFCT.html>

See page 20 for Gainful Employment Information.

Computer Service Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Computer Service Technology	62	–
Certificate	Computer Service Technology	44	–
Skill Specific Certificate	Computer Service Technology–A+ Certification Preparation	8	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Art Knapp	586.445.7209	knappa@macomb.edu	South Campus
Professor	Anthony Ventura	586.445.7326	venturat@macomb.edu	South Campus
Professor	Ken Dulinski	586.445.7248	dulinskik@macomb.edu	South Campus

Program Description:

The Computer Service Technology program focuses on the diagnosis and repair of problems with computers and computerized equipment. The student studies basic electronics both because computers are electronic and because they are attached to all kinds of external electronic and mechanical equipment. Techniques for testing circuits and diagnosing malfunctions are studied as well as repair methods for different types of electronic circuits. The student learns current operating systems and builds a computer from the ground up. A small roaming computerized robot is built and programmed.

Requirements & Specific Information:

Articulation agreements (available for viewing on the college website at www.macomb.edu) allow students to get Macomb credit for related high school courses. Contact your high school teacher or counselor for details or call the Engineering Technology Office at 586.445.7435.

Career Opportunities:

Computer Service Technology—Associate of Applied Science: Job titles such as Computer, Automated Teller, & Office Machine Repair, and Electrical & Electronic Installation and Repair are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Computer Service Technology—Certificate: Job titles such as Computer, Automated Teller, & Office Machine Repair, and Electrical & Electronic Installation and Repair are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Computer Service Technology—A+ Certification Preparation—Skill Specific Certificate: Job titles such as Computer, Automated Teller, & Office Machine Repair, and Electrical & Electronic Installation and Repair are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN COMPUTER SERVICE TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN COMPUTER SERVICE TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
ELEC-1161	Electronic Technology 1 ^{1,2}	–	–	3.0
ELEC-1171	Electronic Technology 2 ^{1,2}	ELEC-1161	–	3.0
TMTH-1150	RCL Analysis	–	–	4.0
CORE-1060	Industrial Computer Technology	–	–	4.0
CORE-1000	Industrial Technology Fundamentals	–	–	2.0
SEMESTER 2				
ELEC-1182	Semiconductor Theory & Devices ²	ELEC-1171	–	3.0
ELEC-1192	Semiconductor Devices & Circuits ²	ELEC-1182	–	3.0
ELEC-1211	Digital Electronics Basics	ELEC-1171	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
Group II: PHYS-1180 –OR– PHSA-1050	College Physics 1 –OR– Physical Science	MATH-1000 with grade C or better, or higher level math course, or math placement score –	–	4.0
SEMESTER 3				
ELEC-1221	Microcontrollers with Robotic Application	ELEC-1211	–	3.0
ELEC-1230	Troubleshooting 1 ²	ELEC-1171	ELEC-1240 (recommended)	3.0
ELEC-1240	Troubleshooting 2 ²	ELEC-1230	–	3.0
ELEC-1250	Introduction to Audio & Video Technology	–	–	2.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	–	3.0-4.0
SEMESTER 4				
ELEC-2650	Computer Servicing 1 ²	–	–	4.0
ELEC-2660	Computer Servicing 2 ²	ELEC-2650	–	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	–	2.0-3.0

NOTES:

- ¹ Students entering the Computer Service Technology program without any previous electronics knowledge should contact the Macomb faculty about taking ELEC-1100 before ELEC-1161 and ELEC-1171.
 - ² Some courses in this program are scheduled in the first 8 weeks or second 8 weeks of the semester. Students should be careful to take courses with the same section number in the same semester.
- Students entering the Computer Service Technology program without any previous electronics knowledge should contact the Macomb faculty about taking ELEC-1100 before ELEC-1161 and ELEC-1171.

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- Some courses in this program are scheduled in the first 8 weeks or second 8 weeks of the semester. Students should be careful to take courses with the same section number in the same semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN COMPUTER SERVICE TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 44 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN COMPUTER SERVICE TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
ELEC-1161	Electronic Technology 1 ^{1,2}	–	–	3.0
ELEC-1171	Electronic Technology 2 ^{1,2}	ELEC-1161	–	3.0
TMTH-1150	RCL Analysis	–	–	4.0
CORE-1060	Industrial Computer Technology	–	–	4.0
SEMESTER 2				
ELEC-1182	Semiconductor Theory & Devices ²	ELEC-1171	–	3.0
ELEC-1192	Semiconductor Devices & Circuits ²	ELEC-1182	–	3.0
CORE-1000	Industrial Technology Fundamentals	–	–	2.0
ELEC-1211	Digital Electronics Basics	ELEC-1171	–	3.0
SEMESTER 3				
ELEC-1221	Microcontrollers with Robotic Application	ELEC-1211	–	3.0
ELEC-1230	Troubleshooting 1 ²	ELEC-1171	ELEC-1240	3.0
ELEC-1240	Troubleshooting 2 ²	ELEC-1230	–	3.0
ELEC-1250	Introduction to Audio & Video Technology	–	–	2.0
SEMESTER 4				
ELEC-2650	Computer Servicing 1 ²	–	–	4.0
ELEC-2660	Computer Servicing 2 ²	ELEC-2650	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CSTCECCSTCT.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN COMPUTER SERVICE TECHNOLOGY—A+ CERTIFICATION PREPARATION

Career preparation and related courses *(require successful completion of a minimum of 8 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN COMPUTER SERVICE TECHNOLOGY—A+ CERTIFICATION PREPARATION

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ELEC-2650	Computer Servicing 1 ²	–	4.0
ELEC-2660	Computer Servicing 2 ²	ELEC-2650	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CSTECA+SK.html>

See page 20 for Gainful Employment Information.

NOTES:

- ¹ Students entering the Computer Service Technology program without any previous electronics knowledge should contact the Macomb faculty about taking ELEC-1100 before ELEC-1161 and ELEC-1171.
 - ² Some courses in this program are scheduled in the first 8 weeks or second 8 weeks of the semester. Students should be careful to take courses with the same section number in the same semester.
- See also the Basic Electronics Certificate under Electronic Engineering Technology.

Construction Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Construction Technology	63	–
Certificate	Construction Technology	42	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Martin Sirowatka	586.445.7226	sirowatkam@macomb.edu	South Campus

Program Description:

The Construction Technology program provides the student with a sound background for careers in Construction Supervision, Estimating, Building Inspection, Architect’s Field Representation, Construction Management, or as a Residential or Commercial Builder. Personnel from ancillary industries, such as construction material supplies, will also find that Construction Technology courses provide a sound background for their careers.

Career Opportunities:

Construction Technology—Associate of Applied Science: Job titles such as Construction & Building Inspector, Construction Manager, Cost Estimator, and Builder are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Construction Technology—Certificate: Job titles such as Construction & Building Inspector, Construction Manager, Cost Estimator, and Builder are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Construction Technology –Renewable Energy Specialist—Associate of Applied Science: Job titles such as Construction & Building Inspector, Construction Manager, Cost Estimator, and Builder are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN CONSTRUCTION TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 63 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN CONSTRUCTION TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ATBC-1100	Blueprint & Math-Residential	–	2.0
CIVL-2200	Soils & Foundations	–	3.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
Group II Course: ENVS-1050 –OR– BIOL-1310	Environmental Science –OR– Environmental Science	–	4.0
SEMESTER 2			
ATBC-1150	Blueprint & Math-Commercial	–	2.0
ATTR-1150	Technical Report Writing	–	2.0
CIVL-1050	Construction Safety Policy & Procedures	–	3.0
DRAD-2110	Applied Building Construction	–	3.0
Group III Course: PSYC-1010	Introductory Psychology	–	4.0
SEMESTER 3			
Group I Course: ENGL-1180 –OR– ENGL-1210	Communication 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
SEMESTER 4			
ATBC-1160	Construction-Cost Estimating	ATBC-1150 or ATBC-1100	2.0
CIVL-1010	Civil Technology Seminar	–	1.0
DRAD-2200	Mechanical & Electrical Systems for Buildings	–	3.0
PSYC-2400	Industrial-Organizational Psychology	PSYC-1010 NOTE: This is a required course and will be counted as an elective, not as part of the degree requirement.	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 5			
ATBC-2600	Construction Law & Contract Administration	–	2.0
CLCT-1650	Systems Design of Heating & Air Conditioning	–	3.0
DRAD-2230	Construction Specifications	–	3.0
QUAL-2400	Project Management	–	3.0
SURV-1100	Elementary Surveying	–	3.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN CONSTRUCTION TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 42 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN CONSTRUCTION TECHNOLOGY			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ATBC-1100	Blueprint & Math-Residential	–	2.0
CIVL-2200	Soils & Foundations	–	3.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
SEMESTER 2			
ATBC-1150	Blueprint & Math-Commercial	–	2.0
ATTR-1150	Technical Report Writing	–	2.0
CIVL-1050	Construction Safety Policy & Procedures	–	3.0
DRAD-2110	Applied Building Construction	–	3.0
SEMESTER 3			
ATBC-1160	Construction-Cost Estimating	ATBC-1150 or ATBC-1100	2.0
CIVL-1010	Civil Technology Seminar	–	1.0
DRAD-2200	Mechanical & Electrical Systems for Buildings	–	3.0
SEMESTER 4			
ATBC-2600	Construction Law & Contract Administration	–	2.0
CLCT-1650	Systems Design of Heating & Air Conditioning	–	3.0
DRAD-2230	Construction Specifications	–	3.0
QUAL-2400	Project Management	–	3.0
SURV-1100	Elementary Surveying	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CNSTCT.html>

See page 20 for Gainful Employment Information.

Construction Technology—Renewable Energy Specialist

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Construction Technology–Renewable Energy Specialist	63	–
Certificate	Construction Technology–Renewable Energy Specialist	45	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Martin Sirowatka	586.445.7226	sirowatkam@macomb.edu	South Campus

Program Description:

The Construction Technology-Renewable Energy Specialist program provides students with a sound background for careers in construction supervision, estimating, building inspection, architect’s field representation, construction management, or residential or commercial building.

Requirements & Specific Information:

Personnel from ancillary industries, such as construction material suppliers, will also find that Construction Technology courses provide a sound background for their careers.

The primary direction for this program is toward sustainability and renewable energy in construction. Coursework includes wind, solar, biomass, and geothermal energy as they relate to residential building. Hydrogen fuel cells are also addressed.

Career Opportunities:

Construction Technology—Renewable Energy Specialist—Certificate: Job titles such as Construction & Building Inspector, Construction Manager, Cost Estimator, and Builder are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
CONSTRUCTION TECHNOLOGY—RENEWABLE ENERGY SPECIALIST**

Career preparation and related courses *(require successful completion of a minimum of 63 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
CONSTRUCTION TECHNOLOGY—RENEWABLE ENERGY SPECIALIST**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ATBC-1100	Blueprint & Math-Residential	–	2.0
CIVL-2200	Soils & Foundations	–	3.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communication 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
ATTR-1150	Technical Report Writing	–	2.0
CIVL-1050	Construction Safety Policy & Procedures	–	3.0
DRAD-2110	Applied Building Construction	–	3.0
RNEW-1000	Introduction to Energy	–	3.0
RNEW-1020	Introduction to Sustainability	–	3.0
SEMESTER 3			
ATBC-1160	Construction-Cost Estimating	ATBC-1150 or ATBC-1100	2.0
DRAD-2200	Mechanical & Electrical Systems for Buildings	–	3.0
RNEW-1010	Renewable Energy Concepts	RNEW-1000	3.0
RNEW-1100	Principles of Wind Energy	–	2.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 4			
ATBC-2600	Construction Law & Contract Administration	–	2.0
QUAL-2400	Project Management	–	3.0
RNEW-1200	Principles of Solar Energy	–	2.0
RNEW-1400	Principles of Geothermal Energy	–	2.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2000, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, SPAN	–	3.0-4.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN CONSTRUCTION TECHNOLOGY—RENEWABLE ENERGY SPECIALIST

Career preparation and related courses *(require successful completion of a minimum of 45 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN CONSTRUCTION TECHNOLOGY—RENEWABLE ENERGY SPECIALIST

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ATBC-1100	Blueprint & Math-Residential	–	2.0
CIVL-2200	Soils & Foundations	–	3.0
DRAD-1110	Introduction to Architectural Drafting	–	3.0
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
SEMESTER 2			
ATTR-1150	Technical Report Writing	–	2.0
CIVL-1050	Construction Safety Policy & Procedures	–	3.0
DRAD-2110	Applied Building Construction	–	3.0
RNEW-1000	Introduction to Energy	–	3.0
RNEW-1020	Introduction to Sustainability	–	3.0
SEMESTER 3			
ATBC-1160	Construction-Cost Estimating	ATBC-1150 or ATBC-1100	2.0
DRAD-2200	Mechanical & Electrical Systems for Buildings	–	3.0
RNEW-1010	Renewable Energy Concepts	RNEW-1000	3.0
RNEW-1100	Principles of Wind Energy	–	2.0
SEMESTER 4			
ATBC-2600	Construction Law & Contract Administration	–	2.0
QUAL-2400	Project Management	–	3.0
RNEW-1200	Principles of Solar Energy	–	2.0
RNEW-1400	Principles of Geothermal Energy	–	2.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CNSTRNEWCT.html>

See page 20 for Gainful Employment Information.

Culinary Arts

PROGRAM OPTIONS			
CREDENTIAL	TITLE	Credit Hours Required	NOTES
Associate of Applied Science	Culinary Arts	66	Designed for entry into the field of Culinary Arts.
Certificate	Culinary Management	32	Designed for entry-level positions or furthering one's career.
Skill Specific Certificate	Prep Cook	10	Designed for entry-level positions or furthering one's career.

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	David Schneider	586.286.2088	schneiderd@macomb.edu	Center Campus
Professor	Jeffrey Wolf	586.226.4740	wolfj@macomb.edu	Center Campus
Professor	Francois Faloppa	586.226.4776	faloppaf@macomb.edu	Center Campus
Professor	Scott O'Farrell	586.226.4741	ofarrells@macomb.edu	Center Campus

Program Description:

The Culinary Arts program prepares students for technical and managerial careers in restaurant, catered, and institutional food service. Students learn quantity cooking in well-equipped commercial kitchens, with related work in nutrition, food selection, storage, and merchandising.

Accreditation:

- National Restaurant Association:** The National Restaurant Association Educational Foundation has developed a series of in-service training courses. Those courses have been incorporated in Macomb's academic courses within the Culinary Arts program. These include CULH-1155, CULH-1200, CULH-1400, CULH-1420, and CULH-2015.

ACF Certified Culinarian: The Associate of Applied Science degree in Culinary Arts and the Certificate in Culinary Arts—Culinary Management are accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC), 180 Center Place Way, St. Augustine, FL 32095, 800.624.9458. Upon graduation, you may receive ACF Certified Culinarian status—national recognition of your accomplishments here at Macomb.

Career Opportunities:

Graduates have employment opportunities in cafeterias, restaurants, catering, hotels, clubs, hospitals, nursing homes, schools, and vending companies.

Culinary Arts—Associate of Applied Science—Job titles such as Chefs & Head Cooks, Cooks (Institutional & Cafeteria), 1st Line Supervisors of Food Preparation, Food Preparation Workers, and Food Service Workers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Culinary Arts—Culinary Management—Certificate—Job titles such as 1st Line Supervisors of Food Preparation are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Culinary Arts—Prep Cook—Skill Specific Certificate—Job titles such as Cooks (Institutional & Cafeteria), 1st Line Supervisors of Food Preparation, Food Preparation Workers, and Food Service Workers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN CULINARY ARTS

Career preparation and related courses *(require successful completion of a minimum of 66 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN CULINARY ARTS

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
CULH-1050	Culinary Techniques	–	CULH-1155	4.0
CULH-1155	Sanitation	–	CULH-1050	2.0
CULH-1200	Cost Control	–	–	3.0
CULH-1340	Production Baking	–	CULH-1155	4.0
SEMESTER 2				
CULH-1255	Table Service	–	–	3.0
CULH-1310	Culinary Skills Development	CULH-1050 and CULH-1155 with grade C or better and ServSafe Certificate	–	4.0
CULH-1400	Supervision	–	–	3.0
CULH-1420	Purchasing	–	–	3.0
Group II Course: BIOL-1400	Fundamentals of Nutrition	–	–	3.0-4.0
SEMESTER 3				
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	–	2.0-3.0
SEMESTER 4				
CULH-1320	International Kitchen	CULH-1050 and CULH-1155 and CULH-1310	–	5.0
CULH-1430	Menu Planning	CULH-1200	–	3.0
CULH-2050	Catering	–	–	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	–	3.0-4.0
SEMESTER 5				
CULH-2040	Garde Manger	CULH-1050 and CULH-1155 and CULH-1310	–	3.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN CULINARY ARTS**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
CULH-2180	Pastry Arts	CULH-1155 and CULH-1340 with grade C or better and a ServSafe certificate	–	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	–	3.0-4.0
And 4 credit hours from the following courses:				–
CULH-2015	A la Carte Dining	CULH-1155, CULH-1255, and CULH-1310	–	4.0
CULH-2025	Wine Appreciation	–	–	2.0
CULH-2035	Nutritional Cooking	CULH-1155 and CULH-1310	–	2.0
CULH-2045	Vegetarian Cuisine	CULH-1050, CULH-1155, and CULH-1340	–	2.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN CULINARY ARTS—CULINARY MANAGEMENT

Career preparation and related courses *(require successful completion of a minimum of 32 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
CULINARY ARTS—CULINARY MANAGEMENT**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
CULH-1050	Culinary Techniques	–	CULH-1155	4.0
CULH-1155	Sanitation	–	CULH-1050	2.0
CULH-1200	Cost Control	–	–	3.0
SEMESTER 2				
CULH-1255	Table Service	–	–	3.0
CULH-1310	Culinary Skills Development	CULH-1050 and CULH-1155 with grade C or better and ServSafe	–	4.0
CULH-1400	Supervision	–	–	3.0
CULH-1420	Purchasing	–	–	3.0
SEMESTER 3				
CULH-1430	Menu Planning	CULH-1200	–	3.0
MGMT-1210	Entrepreneurship & Small Business Management	–	–	3.0
CULH-2015	A la Carte Dining	CULH-1155, CULH-1255, and CULH-1310	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CULARTMGMTCT.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN CULINARY ARTS—PREP COOK

Career preparation and related courses *(require successful completion of a minimum of 10 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN CULINARY ARTS—PREP COOK				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
CULH-1050	Culinary Techniques	–	CULH-1155	4.0
CULH-1155	Sanitation	–	CULH-1050	2.0
CULH-1310	Culinary Skills Development	CULH-1050 and CULH-1155 with grade C or better and ServSafe Certificate	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CULARTPCSK.html>

See page 20 for Gainful Employment Information.

Customer Energy Specialist

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Customer Energy Specialist	62	–
Certificate	Customer Energy Specialist–Design	51-54	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Art Knapp	586.445.7209	knappa@macomb.edu	South Campus
Professor	Tony Ventura	586.445.7326	ventura@macomb.edu	South Campus
Professor	Ken Dulinski	586.445.7248	dulinskik@macomb.edu	South Campus

Program Description:

The Customer Energy Specialist program is designed to provide students with the competencies, knowledge, skills and attitudes to function as a beginning Customer Energy Specialist for Consumers Energy Company. The program will operate as an in-house training program with the formal course work taken concurrently at Macomb Community College. When all course requirements have been met, a Certificate in Customer Energy Specialist–Design may be given upon request. Courses may also be applied toward an Associate of Applied Science degree in Customer Energy Specialist–Design with satisfactory completion of appropriate additional course work.

Career Opportunities:

Customer Energy Specialist—Associate of Applied Science: Job titles such as Energy Auditors are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Customer Energy Specialist—Design—Certificate: Job titles such as Energy Auditors are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN CUSTOMER ENERGY SPECIALIST

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN CUSTOMER ENERGY SPECIALIST

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ACCT-1070	Accounting for Entrepreneurs	–	3.0
BUSN-1010	Business Enterprise	–	3.0
TMTH-1150	RCL Analysis	–	4.0
MKTG-1010	Principles of Marketing	–	3.0
ELEC-1161	Electronic Technology 1	–	3.0
ELEC-1171	Electronic Technology 2	ELEC-1161	3.0
SEMESTER 2			
BLAW-1080	Business Law 1	–	4.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
ELEC-2410 –OR– CLCT-2350	Electrical–National Electrical Code –OR– Mechanical Codes	CLCT-1200 and CLCT-1500 or industry field experience	2.0-3.0
PRDE-1010	Design Principles	–	4.0
SEMESTER 3			
MKTG-1010	Principles of Marketing	–	3.0
ATMT-1950	Science–Physics 1: Mechanics	ATAM-2150 or consent of apprenticeship coordinator	2.0
DRCG-1140	Interactive Computer Graphics–Introduction to 2D & 3D AutoCAD	–	4.0
ELEC-1171	Electronic Technology 2	ELEC-1161	3.0
PRDE-1450	AutoCAD: Detailing & Assemblies	DRCG-1140	3.0
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 4			
Group IB Course: ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
Group IB Course: SPCH-1060	Speech Communication	–	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHS, PHYS	–	2.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN CUSTOMER ENERGY SPECIALIST—DESIGN

Career preparation and related courses *(require successful completion of a minimum of 51 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN CUSTOMER ENERGY SPECIALIST—DESIGN			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ACCT-1070	Accounting for Entrepreneurs	–	3.0
BUSN-1010	Business Enterprise	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
ELEC-1161	Electronic Technology 1	–	3.0
ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
ELEC-2410 –OR– CLCT-2350	Electrical–National Electrical Code –OR– Mechanical Codes	CLCT-1200 and CLCT-1500 or industry field experience	2.0-3.0
BLAW-1080	Business Law 1	–	4.0
ENGL-1220 –OR– ENGL-1190	Composition 2 –OR– Communications 2	ENGL-1180 or ENGL-1210 –OR– ENGL-1180 or ENGL-1210	3.0-4.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
PRDE-1010	Design Principles	–	4.0
SEMESTER 3			
ATMT-1950	Science–Physics 1: Mechanics	ATAM-2150 or consent of apprenticeship coordinator	2.0
DRCG-1140	Interactive Computer Graphics–Introduction to 2D & 3D AutoCAD	–	4.0
ELEC-1171	Electronic Technology 2	ELEC-1161	3.0
PRDE-1450	AutoCAD: Detailing & Assemblies	DRCG-1140	3.0
TMTH-1150	RCL Analysis	–	4.0
SEMESTER 4			
SPCH-1060	Speech Communication	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/CESDSNCT.html>

See page 20 for Gainful Employment Information.

Education: Early Childhood Studies

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Education: Early Childhood Studies	62	–
Skill Specific Certificate	Education: Early Childhood Studies-Early Childhood Center Director	18	Meets State of Michigan Child Care Licensing requirements for center directors.
Skill Specific Certificate	Education: Early Childhood Studies-Family Childcare Management	10	Prepares students to develop and implement a family child care program.

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Kate Cole	586.286.2190	colek@macomb.edu	Center Campus

Program Description:

The Education: Early Childhood Studies Program prepares students to work in a variety of early childhood settings. Students learn the theoretical basis of human growth and development as well as curriculum. There are field and practicum experiences to facilitate development of skills to implement a curriculum that fosters the physical, cognitive, social/emotional, and language growth of young children. Students will observe, document, responsibly assess, and develop positive, reciprocal relations with families.

Requirements & Specific Information:

Students are required to have a criminal background check, DHS clearance and a physical with a TB test before beginning field or practicum experiences. Student health care is not provided by the college or observation or practicum site.

Accreditation:

The Associate of Applied Science degree in Education—Early Childhood Studies Program is accredited by the National Association for the Education of Young Children (NAEYC), 1313 L St. NW, Suite 500, Washington, D.C. 20005, 202.232.8777, www.naeyc.org

Career Opportunities:

Education: Early Childhood Studies—Associate of Applied Science: Job titles such as Early Childhood Center Director, Preschool Teacher, Teacher Assistant, and Child Caregiver are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Education: Early Childhood Studies—Early Childhood Center Director—Skill Specific Certificate: Job titles such as Early Childhood Center Director, Preschool Teacher & Childcare Provider are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Education: Early Childhood Studies—Family Childcare Management—Skill Specific Certificate: Job titles such as Family Childcare Provider are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

ASSOCIATE OF APPLIED SCIENCE IN EDUCATION: EARLY CHILDHOOD STUDIES

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN EDUCATION: EARLY CHILDHOOD STUDIES

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
ECHS-1100	Early Childhood Development	–	–	4.0
ECHS-1540	Curriculum Skills; Birth to 3 Years	–	–	3.0
Group IA Course: ¹ ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	4.0-3.0
Group III Course: ¹ PSYC-1010	Introductory Psychology	–	–	4.0
SEMESTER 2				
ECHS-1200	Early Childhood Curriculums	ECHS-1100	–	4.0
ECHS-1300	Art & Representing Skills for Children	ECHS-1100	–	3.0
ECHS-1600	Principles of Parents as Partners	–	–	3.0
Group IB Course: ¹ ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	This is a required course and will be counted as an elective, not as part of the degree requirement	4.0-3.0
SEMESTER 3				
ECHS-1400	Music & Movement for Children	ECHS-1100 and ECHS-1200	–	3.0
ECHS-1710	Child Care Management	ECHS-1100 and ECHS-1200	–	3.0
ECHS-2100	Implementing the Curriculum	ECHS-1100, ECHS-1200, ECHS-1300, ECHS-1540, and ECHS-1600	ECHS-1400, and ECHS-2110	2.0
ECHS-2110	Curriculum Skills	ECHS-1100, ECHS-1200, ECHS-1300, ECHS-1540, and ECHS-1600	ECHS-1400, and ECHS-2100	2.0
Group II Course: ¹ BIOL-1400 –OR– BIOL-1000 –OR– NATS-1200	Fundamentals of Nutrition –OR– General Biology 1 –OR– Natural Science	–	–	3.0-4.0
Group V Course ¹	Any PHED Wellness course—2000 or above	–	–	2.0-3.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN EDUCATION: EARLY CHILDHOOD STUDIES**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 4				
ECHS-1520	The Exceptional Child	ECHS-1100 or PSYC-2210 or permission of program coordinator	–	3.0
ECHS-2310	Professional Issues in Early Childhood	ECHS-2100 and ECHS-2110	ECHS-2330, ECHS-2340	1.0
ECHS-2330	Early Childhood Practicum	ECHS-1400, ECHS-1710, ECHS-2100 and ECHS-2110 with grade C or better	ECHS-2310, ECHS-2340	3.0
ECHS-2340	Early Childhood Practicum Seminar	ECHS-2100 and ECHS-2110 with grade C or better	ECHS-2310, ECHS-2330	2.0
Electives ¹	If required to meet minimum degree requirements. Suggested courses: ECHS-1550, ECHS-1580, ECHS-2640, ITML-1000, MGMT-1210, MUSC-1260, NATS-1310, SOCY-1100, SPCH-1060	Requirement for ECHS-2640 is ENGL-1220 or ENGL-1190 or consent of instructor	–	6.0-8.0

NOTES:

- ¹ Course may be taken any time prior to or during the program, including the summer semester; courses must be completed prior to the completion of your program in order to graduate.
- The above is a suggested sequence and is based on full-time enrollment.
 - A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
 - It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**SKILL SPECIFIC CERTIFICATE IN
EDUCATION: EARLY CHILDHOOD STUDIES—EARLY CHILDHOOD CENTER DIRECTOR**

Career preparation and related courses *(require successful completion of a minimum of 18 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
EDUCATION: EARLY CHILDHOOD STUDIES—EARLY CHILDHOOD CENTER DIRECTOR**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
ECHS-1100	Early Childhood Development	–	–	4.0
ECHS-1540	Curriculum Skills; Birth to 3 Years	–	–	3.0
SEMESTER 2				
ECHS-1200	Early Childhood Curriculums	ECHS-1100	–	4.0
SEMESTER 3				
ECHS-2100	Implementing the Curriculum	ECHS-1100, ECHS-1200, ECHS-1300, ECHS-1540, and ECHS-1600	ECHS-1400, and ECHS-2110	2.0
ECHS-2110	Curriculum Skills	ECHS-1100, ECHS-1200, ECHS-1300, ECHS-1540, and ECHS-1600	ECHS-1400, and ECHS-2100	2.0
ECHS-1710	Child Care Management	ECHS-1100 and ECHS-1200	–	3.0

**SKILL SPECIFIC CERTIFICATE IN
EDUCATION: EARLY CHILDHOOD STUDIES—FAMILY CHILDCARE MANAGEMENT**

Career preparation and related courses *(require successful completion of a minimum of 10 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN EDUCATION: EARLY CHILDHOOD STUDIES—FAMILY CHILDCARE MANAGEMENT				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
ECHS-1100	Early Childhood Development	–	–	4.0
ECHS-1540	Curriculum Skills; Birth to 3 Years	–	–	3.0
SEMESTER 2				
ECHS-1550	Family Child Care Management	ECHS-1100	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/EDECHSFCCMSK.html>

See page 20 for Gainful Employment Information.

ADDITIONAL INFORMATION FOR STUDENTS CDA (CHILD DEVELOPMENT ASSOCIATE) PREPARATION				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
A CDA is a credential from the Council for Professional Recognition. To take these classes and apply for this credential students must be currently working in an early childhood setting. Students may prepare for this by completing:				–
ECHS-1800	Child Development Associate Credential Preparation, Part 1	–	–	3.0
ECHS-1810	Child Development Associate Credential Preparation, Part 2	ECHS-1800	ECHS-1815	3.0
ECHS-1815	Child Development Associate Credential Preparation, Part 3	ECHS-1800	ECHS-1810	3.0
Students may also achieve the content for CDA preparation by taking:				–
ECHS-1100	Early Childhood Development	–	–	4.0
ECHS-1600	Parents as Partners	–	–	3.0
ECHS-1200	Early Childhood Curriculums	ECHS-1100	–	4.0
ECHS-1710	Child Care Management	ECHS-1100 and ECHS-1200	–	3.0
ECHS-1815	Child Development Associate Credential Preparation, Part 3	ECHS-1800	ECHS-1810	3.0

Education: K–12 Education

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Arts	Education: K–12 Education	62	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Kate Cole	586.286.2190	colek@macomb.edu	Center Campus

Program Description:

This program is designed to provide students with the basic competencies, knowledge, and skills requisite to seek transfer admission to baccalaureate degree programs in Elementary or Secondary Education. Because education programs vary from institution to institution and requirements will also differ based on teaching majors and minors selected, students are advised to consult with a counselor or academic advisor (586.286.2228 Center Campus or 586.445.7211 South Campus) when choosing options and elective course work. Since changes to this program may occur from time to time, students are advised to use Macomb’s online catalog for the most up-to-date information about this program and its requirements. It is important to note that teacher education programs are highly selective. Academic performance at Macomb (GPA) will be a significant factor in admission to a university program.

Career Opportunities:

Education: K–12 Education—Associate of Arts: Job titles such as Preschool Teacher, Teacher Assistant, and Child Caregiver are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Education: K–12 Education—Associate of Arts: Job titles such as Preschool Teacher, Teacher Assistant, and Child Caregiver are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

ASSOCIATE OF ARTS IN EDUCATION—K–12 EDUCATION

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF ARTS IN EDUCATION—K–12 EDUCATION**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
EDUC-2010	Introduction to Education	ENGL-1180 or ENGL-1210	4.0
Group I Course: ¹ ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Electives	–	–	8.0
SEMESTER 2			
Group IIIA Course ¹ HIST-####	any History course	–	3.0-4.0
Group I Course: ¹ ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1190	3.0-4.0
Electives	–	–	8.0
SEMESTER 3			
Group IIC Course: ¹ MATH-1280 –OR– Math-####	Mathematics for Education 1 –OR– any Mathematics course 1000 level or higher	Grade C or better in MATH-1000 or an equivalent college course, or an acceptable score on a placement or prerequisite exam –OR– See specific course for MATH prerequisite	3.0-4.0
Group IIIB Course ¹	ANTH, PSYC, SOCY or SOSC-1010	–	3.0-4.0
Group IV Course ¹	Any ARAB, ARTT, CHIN, ENGL-2#### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Elective	–	–	3.0-4.0
SEMESTER 4			
Group IIIC Course: ¹ POLS-1000	Introduction to American Politics	–	4.0
Group IIB Course: ¹ BIOL-1000	General Biology 1	–	4.0
Group V Course ¹	Any PHED Wellness course—2000 or above	–	2.0-3.0
Elective	–	–	4.0

NOTES:

¹ Course may be taken any time prior to or during the program, including the summer semester; courses must be completed prior to the completion of your program in order to graduate.

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- Select elective courses based on your transfer college/university.
- It is strongly recommended that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Education: Paraprofessional Education

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Education: Paraprofessional Education	62	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Kate Cole	586.286.2190	colek@macomb.edu	Center Campus

Program Description:

The Education–Paraprofessional Education program provides students with the basic competencies, knowledge, and skills requisite to seek employment in local school districts as educational paraprofessionals. Principles of learning, human growth and development, and instructional strategies for working with special needs students are included. The practicum component gives students the opportunity to directly apply classroom theory in a K–12 educational environment.

Requirements & Specific Information:

Students will complete observation or practicum hours in schools and centers. Students should plan to have a criminal background test, a physical examination, and a test for tuberculosis before beginning a field observation or practicum. Program advisor Kate Cole can be contacted for program information at 586.286.2190.

To participate in the practicum students must have a criminal background check and physical including a TB test. Student health care is not provided by the college or practicum site.

Career Opportunities:

Education: Paraprofessional Education–Associate of Applied Science: Job titles such as Preschool Teacher, Teacher Assistant, and Child Caregiver are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students interested in combining the goal of an Associate Degree with further study to become teachers are encouraged to work closely with an academic advisor or counselor to plan their courses. Teacher education programs are highly selective. Academic performance at Macomb (GPA) will be a significant factor in admission to a university program.

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

ASSOCIATE OF APPLIED SCIENCE IN EDUCATION: PARAPROFESSIONAL EDUCATION

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN EDUCATION: PARAPROFESSIONAL EDUCATION**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
EDUC-1010	Paraprofessional Theory & Practice	–	4.0
Group IA Course: ¹ ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group III Course: ¹ PSYC-1010	Introductory Psychology	–	4.0
ECHS-1100	Early Childhood Development	–	4.0
SEMESTER 2			
Group II Course: ¹ MATH-1280	Mathematics for Education 1	Grade C or better in MATH-1000 or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group IB Course: ¹ ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
Group III Course: ¹ PSYC-2210	Child Growth & Development	PSYC-1010	3.0
Group III Course ¹	Any History Course	–	3.0-4.0
SEMESTER 3			
Group II Course: ¹ BIOL-1000:	General Biology 1	–	4.0
Group V Course: ¹ PHED-2070	Wellness–Focus Prevention, Intervention, Treatment of Disease, Illness & Injury	–	3.0
SEMESTER 4			
ECHS-1580	School-Age Care	–	3.0
Group IV Course: ¹ ENGL-2640	Children’s Literature	ENGL-1220 or ENGL-1190 or consent of instructor	3.0
Group IB Course: SPCH-1060	Speech Communication	–	3.0
Group II Course: MATH-1290	Mathematics for Education 2	Grade of C or better in MATH-1280 or equivalent college course, or an acceptable score on a placement or prerequisite exam	3.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN EDUCATION: PARAPROFESSIONAL EDUCATION**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 5			
ECHS-1520	The Exceptional Child	ECHS-1100 or PSYC-2210 or permission of program coordinator	3.0
Group IV Course: ¹ HUMN-1700	Comparative Religions	–	3.0
Group III Course: ¹ PSYC-2310 –OR– POLS-1000	Educational Psychology –OR– Introduction to American Politics	PSYC-1010	3.0-4.0
Group III Course: ¹ SOCY-1010	Principles of Sociology	–	4.0

NOTES:

- ¹ Course may be taken any time prior to or during the program, including the summer semester; courses must be completed prior to the completion of your program in order to graduate.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups II–V can be taken in any semester.
 - It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Electronic Engineering Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Electronic Engineering Technology	65	The program is designed to provide preparation for entry level jobs in a variety of occupations.
Certificate	Electronic Engineering Technology	47	–
Certificate	Electronic Engineering Technology–Basic Electronics	22	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Arthur Knapp	586.445.7209	knappa@macomb.edu	South Campus
Professor	Anthony Ventura	586.445.7326	venturat@macomb.edu	South Campus
Professor	Ken Dulinski	586.445.7248	dulinskik@macomb.edu	South Campus

Program Description:

The Electronic Engineering Technology program provides a strong background in electrical and electronic theory. The theory is further reinforced through practical laboratory work and experimentation. Emphasis throughout the program is on understanding principles that are basic to the broad utilization of electronics across a wide spectrum of industrial, commercial, and consumer applications. The program is designed to provide preparation for entry level jobs in a variety of fields.

Requirements & Specific Information:

Students interested in furthering their studies in the field of renewable energy may complement the Associate of Applied Science degrees in Automated Systems Technology–Mechatronics or Electronic Engineering Technology with the Renewable Energy Technology Certificate.

Career Opportunities:

Electronic Engineering Technology–Associate of Applied Science: Job titles such as Electrical and Electronic Engineering Technicians are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

Some universities in the area (Wayne State University and Lawrence Technological University among them) offer a degree in Bachelor of Science Engineering Technology (BSET). The Electronic Engineering Technology program from Macomb is transferable in total to most of these universities and articulation (transfer) agreements are in place. However, students pursuing the BSET should refer to the specific agreement for their university of choice. The agreements are available online at www.macomb.edu, or can be picked up at the Engineering Technology office at South Campus in R-124. These students should also see the program advisor at their selected university as soon as possible.

 **Transfer Resource Guide**

ASSOCIATE OF APPLIED SCIENCE IN ELECTRONIC ENGINEERING TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 65 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN ELECTRONIC ENGINEERING TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ELEC-1161	Electronic Technology 1 ^{1,2}	–	3.0
ELEC-1171	Electronic Technology 2 ^{1,2}	ELEC-1161	3.0
TMTH-1150	RCL Analysis	–	4.0
CORE-1060	Industrial Computer Technology	–	4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 2			
ELEC-1182	Semiconductor Theory & Devices ²	ELEC-1171	3.0
ELEC-1192	Semiconductor Devices & Circuits ²	ELEC-1182	3.0
ELEC-1211	Digital Electronics Basics	ELEC-1171	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group II Course: PHYS-1180 –OR– PHSA-1050	College Physics 1 –OR– Physical Science	MATH-1000 with grade C or better, or higher level math course, or math placement score –	4.0
SEMESTER 3			
ELEC-2005	Discrete Amplifiers & Introduction to Op-Amps	ELEC-1192	3.0
ELEC-2010	Instrumentation 1– Transducer Theory ²	ELEC-1211	3.0
ELEC-2150	LabVIEW Basics 1 ²	ELEC-1211 or approval of program advisor	3.0
ELEC-2160	LabVIEW Basics 2 ²	ELEC-2150	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
SEMESTER 4			
ELEC-1221	Microcontrollers with Robotic Applications ²	ELEC-1211	3.0
ELEC-2005	Discrete Amplifiers & Introduction to Op-Amps	ELEC-1192	3.0
ELEC-2490	Instrumentation 2–Advanced Op-Amps & Linear Integrated Circuits ²	ELEC-2010	3.0
ELEC-2270	Microcontroller Programming ²	ELEC-1211 and either ELEC-1192 or ELEC-2005	3.0
ELEC-2400	Microprocessor Interfacing ²	EETE-2270 or ELEC-2270	3.0

CERTIFICATE IN ELECTRONIC ENGINEERING TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 47 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN ELECTRONIC ENGINEERING TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ELEC-1161	Electronic Technology 1 ^{1,2}	–	3.0
ELEC-1171	Electronic Technology 2 ^{1,2}	ELEC-1161	3.0
TMTH-1150	RCL Analysis	–	4.0
CORE-1060	Industrial Computer Technology	–	4.0
SEMESTER 2			
ELEC-1182	Semiconductor Theory & Devices ²	ELEC-1171	3.0
ELEC-1192	Semiconductor Devices & Circuits ²	ELEC-1182	3.0
ELEC-1211	Digital Electronics Basics	ELEC-1171	3.0
SEMESTER 3			
ELEC-2005	Discrete Amplifiers & Introduction to Op-Amps	ELEC-1192	3.0
ELEC-2010	Instrumentation 1–Transducer Theory ²	ELEC-1211	3.0
ELEC-2150	LabVIEW Basics 1 ²	ELEC-1211 or approval of program advisor	3.0
ELEC-2160	LabVIEW Basics 2 ²	ELEC-2150	3.0
SEMESTER 4			
ELEC-1221	Microcontrollers with Robotic Applications ²	ELEC-1211	3.0
ELEC-2490	Instrumentation 2–Advanced Op-Amps & Linear Integrated Circuits ²	ELEC-2010	3.0
ELEC-2270	Microcontroller Programming ²	ELEC-1211 and either ELEC-1192 or ELEC-2005	3.0
ELEC-2400	Microprocessor Interfacing ²	EETE-2270 or ELEC-2270	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/EETCT.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN ELECTRONIC ENGINEERING TECHNOLOGY—BASIC ELECTRONICS

Career preparation and related courses *(require successful completion of a minimum of 22 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN ENGINEERING TECHNOLOGY—BASIC ELECTRONICS

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ELEC-1161	Electronic Technology 1 ^{1,2}	–	3.0
ELEC-1171	Electronic Technology 2 ^{1,2}	ELEC-1161	3.0
TMTH-1150	RCL Analysis	–	4.0
ELEC-1182	Semiconductor Theory & Devices ²	ELEC-1171	3.0
ELEC-1192	Semiconductor Devices & Circuits ²	ELEC-1182	3.0
ELEC-1211	Digital Electronics Basics	ELEC-1171	3.0
ELEC-1221	Microcontrollers with Robotic Applications	ELEC-1211	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/EETBASCT.html>

See page 20 for Gainful Employment Information.

NOTES:

- ¹ Students entering the Electronic Engineering Technology program without any previous electronics knowledge should contact the Macomb faculty about taking ELEC-1100 before ELEC-1161 and ELEC-1171.
- ² Some courses in this program are scheduled in the first 8 weeks or second 8 weeks of the semester. Students should be careful to take courses with the same section number in the same semester.
 - It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.
 - A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups II–V can be taken in any semester.

Emergency Medical Services— Emergency Medical Technician—Paramedic

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Emergency Medical Services— Emergency Medical Technician— Paramedic	70-71	–
Certificate	Emergency Medical Services— Emergency Medical Technician— Paramedic	38	Designed for entry level paramedic position

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Coordinator	Daniel Media	586.286.2069	mediad@macomb.edu	Center Campus

Program Description:

The EMT student will learn the role of the Emergency Medical Technician that administers Basic Life Support and takes over care from the Medical First Responders. After completing these courses the student will be able to take the National Registry licensing exam. The student will also obtain the knowledge and skills to staff the sophisticated Advanced Life Support Units and assume care for the patient using appropriate medications and therapy to stabilize the victim of accidents or sudden illness prior to arrival at the hospital.

Requirements & Specific Information:

Additional expenses to be met by the student are (1) a health history and physical examination including testing for tuberculosis and immunizations for Hepatitis B, Rubella and Rubeola; (2) uniforms; (3) hospitalization insurance as neither the clinical facilities nor the college insures the student against accidents or illness; (4) flu shot; and (5) drug screen and (6) criminal background check.

Students must achieve grade “C” or better, or grade “Pass” (if the course is a Pass/Fail course) for all the Core and Arts and Sciences courses in this program.

Accreditation:

The Associate of Applied Science degree in Emergency Medical Services—Emergency Medical Technician—Paramedic program is accredited by the Michigan Department of Community Health, EMS and Trauma Systems Section, 201 Townsend Street, Lansing, Michigan 48913, 517.241.3026.

Career Opportunities:

Emergency Medical Services—Emergency Medical Technician—Paramedic—Associate of Applied Science: Job titles such as Paramedic/Emergency Medical Technician, Ambulance Drivers & Attendants are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Emergency Medical Services—Emergency Medical Technician—Paramedic—Certificate: Job titles such as Paramedic/Emergency Medical Technician, Ambulance Drivers & Attendants are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
EMERGENCY MEDICAL SERVICES—EMERGENCY MEDICAL TECHNICIAN—PARAMEDIC**

Career preparation and related courses *(require successful completion of a minimum of 70 credit hours)*

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
EMERGENCY MEDICAL SERVICES—EMERGENCY MEDICAL TECHNICIAN—PARAMEDIC**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
EMSA-1215	Basic Emergency Medical Technician Lecture	Acceptable score on reading placement test	EMSA-1220, EMSA-1250	7.0
EMSA-1220	Basic EMT Lab	–	EMSA-1215, EMSA-1250	4.0
EMSA-1250	Clinical Rotation for the Basic EMT	–	EMSA-1215, EMSA-1220	1.0
Group V Course	Any PHED Wellness course—2000 or above	–	–	2.0
BCOM-2080	Business Communications for Public Service	–	–	2.0
SEMESTER 2				
Group II Course: BIOL-2710	Human Physiological Anatomy	–	–	6.0
Group III Course: PSYC-1010	Introductory Psychology	–	–	4.0
Group IV Course: HUMN-1700 –OR– PHIL-2100	Comparative Religions –OR– Introduction to Ethics	–	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
SEMESTER 3				
EMSA-2510	Introduction to Paramedic Procedures	Permission from instructor and acceptable scores on reading placement tests	EMSA-2520, EMSA-2530, EMSA-2550	4.0
EMSA-2520	Pharmacology for the Paramedic 1	Permission of instructor	EMSA-2510, EMSA-2530, EMSA-2550	3.0
EMSA-2530	Paramedic Lab 1	Permission of instructor	EMSA-2510, EMSA-2520, EMSA-2550	3.0
EMSA-2550	Paramedic Lecture 2	EMSA-2510 with grade C or better	EMSA-2510, EMSA-2520, EMSA-2530	4.0
EMSA-2611	Hospital Clinical Rotation for the Paramedic	Permission of instructor	–	2.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
EMERGENCY MEDICAL SERVICES—EMERGENCY MEDICAL TECHNICIAN—PARAMEDIC**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 4				
EMSA-2560	Paramedic Lecture 3	EMSA-2550 with grade C or better	EMSA-2570, EMSA-2580, EMSA-2612, EMSA-2620	3.0
EMSA-2570	Pharmacology for the Paramedic 2	EMSA-2520 with grade C or better	EMSA-2560, EMSA-2580, EMSA-2612, EMSA-2620	3.0
EMSA-2580	Paramedic Lab 2	EMSA-2530 with grade C or better	EMSA-2560, EMSA-2570, EMSA-2612, EMSA-2620	3.0
EMSA-2612	Hospital Clinical Rotation for the Paramedic 2	EMSA-2611	–	4.0
EMSA-2620	Paramedic Lecture 4	EMSA-2560 with grade C or better	EMSA-2560, EMSA-2570, EMSA-2580, EMSA-2612	3.0
SEMESTER 5				
EMSA-2600	Advanced Life Support Internship	Permission of instructor	–	6.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor or advisor to plan your schedule.

**CERTIFICATE IN
EMERGENCY MEDICAL SERVICES—EMERGENCY MEDICAL TECHNICIAN—PARAMEDIC**

Career preparation and related courses *(require successful completion of a minimum of 38 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN EMERGENCY MEDICAL SERVICES—EMERGENCY MEDICAL TECHNICIAN—PARAMEDIC				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 3				
EMSA-2510	Introduction to Paramedic Procedures	Permission from instructor and acceptable scores on reading placement tests	EMSA-2520, EMSA-2530, EMSA-2550	4.0
EMSA-2520	Pharmacology for the Paramedic 1	Permission of instructor	EMSA-2510, EMSA-2530, EMSA-2550	3.0
EMSA-2530	Paramedic Lab 1	Permission of instructor	EMSA-2510, EMSA-2520, EMSA-2550	3.0
EMSA-2550	Paramedic Lecture 2	EMSA-2510 with grade C or better	EMSA-2520, EMSA-2530	4.0
EMSA-2611	Hospital Clinical Rotation for the Paramedic	Permission of instructor	–	2.0
SEMESTER 4				
EMSA-2560	Paramedic Lecture 3	EMSA-2550 with grade C or better	EMSA-2570, EMSA-2580, EMSA-2612, EMSA-2620	3.0
EMSA-2570	Pharmacology for the Paramedic 2	EMSA-2520 with grade C or better	EMSA-2560, EMSA-2580, EMSA-2612, EMSA-2620	3.0
EMSA-2580	Paramedic Lab 2	EMSA-2530 with grade C or better	EMSA-2560, EMSA-2570, EMSA-2612, EMSA-2620	3.0
EMSA-2612	Hospital Clinical Rotation for the Paramedic 2	EMSA-2611	–	4.0
EMSA-2620	Paramedic Lecture 4	EMSA-2560 with grade C or better	EMSA-2560, EMSA-2570, EMSA-2580, EMSA-2612	3.0
SEMESTER 5				
EMSA-2600	Advanced Life Support Internship	Permission of instructor	–	6.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/EMSEPCT.html>

See page 20 for Gainful Employment Information.

Emergency Medical Services—Paramedic/Firefighter

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Emergency Medical Services–Paramedic/Firefighter	82	–
Certificate	Emergency Medical Services–Paramedic/Firefighter	50	Designed for entry level paramedic/Firefighter position

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Coordinator	Daniel Media	586.286.2069	mediad@macomb.edu	Center Campus

Program Description:

The EMT student will learn the role of the Emergency Medical Technician that administers Basic Life Support and takes over care from the Medical First Responders. After completing these courses the student will be able to take the National Registry licensing exam. The student will also obtain the knowledge and skills to staff the sophisticated Advanced Life Support Units and assume care for the patient using appropriate medications and therapy to stabilize the victim of accidents or sudden illness prior to arrival at the hospital.

Requirements & Specific Information:

Additional expenses to be met by the student are; 1) a health history and physical examination including testing for tuberculosis and immunizations or titers for Hepatitis B, Rubella and Rubeola; 2) uniforms; 3) hospitalization insurance as neither the clinical facilities nor the college insures the student against accidents or illness; 4) flu shot; 5) drug screen; and 6) criminal background check.

Students must achieve grade “C” or better, or grade “Pass” (if the course is a Pass/Fail course) for all the Core and Arts and Sciences courses in this program.

Accreditation:

The Associate of Applied Science degree in Emergency Medical Services–Paramedic/Firefighter program is accredited by the Michigan Department of Community Health, EMS and Trauma Systems Section, 201 Townsend Street, Lansing, Michigan 48913, 517.241.3026.

Career Opportunities:

Emergency Medical Services–Emergency Medical Technician-Paramedic Firefighter–Associate of Applied Science: Job titles such as Paramedic/Emergency Medical Technician, Firefighter are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Emergency Medical Services–Emergency Medical Technician-Paramedic Firefighter - Certificate: Job titles such as Paramedic/Emergency Medical Technician, Firefighter are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
EMERGENCY MEDICAL SERVICES—PARAMEDIC/FIREFIGHTER**

Career preparation and related courses *(require successful completion of a minimum of 82 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
EMERGENCY MEDICAL SERVICES—PARAMEDIC/FIREFIGHTER**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
PRELIMINARY COURSES				
FIRE-2000	Basic Fire Academy—Firefighter 1	Consent of Department and acceptable score on reading placement test. Michigan State law mandates that persons taking this course must be at least 18 years of age, have a valid Michigan driver's license, no felony convictions, and successfully pass the Michigan Municipal League Physical Agility test prior to being accepted.	–	6.0
FIRE-2010	Basic Fire Academy—Firefighter 2	FIRE-2000 and consent of department	–	6.0
SEMESTER 1				
EMSA-1215	Basic Emergency Medical Technician Lecture	Acceptable score on reading placement test	EMSA-1220, EMSA-1250	7.0
EMSA-1220	Basic EMT Lab	–	EMSA-1215, EMSA-1250	4.0
EMSA-1250	Clinical Rotation for the Basic EMT	–	EMSA-1215, EMSA-1220	1.0
BCOM-2080	Business Communications for Public Service	–	–	2.0
Group V Course	Any PHED Wellness course—2000 or above	–	–	2.0
SEMESTER 2				
Group II Course: BIOL-2710	Human Physiological Anatomy	–	–	6.0
Group III Course: PSYC-1010	Introductory Psychology	–	–	4.0
Group IV Course: HUMN-1700 –OR– PHIL-2100	Comparative Religions –OR– Introduction to Ethics	–	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
SEMESTER 3				
EMSA-2510	Introduction to Paramedic Procedures	Permission from instructor and acceptable scores on reading placement tests	EMSA-2520, EMSA-2530, EMSA-2550	4.0
EMSA-2520	Pharmacology for the Paramedic 1	Permission of instructor	EMSA-2510, EMSA-2530, EMSA-2550	3.0
EMSA-2530	Paramedic Lab 1	Permission of instructor	EMSA-2510, EMSA-2520, EMSA-2550	3.0
EMSA-2550	Paramedic Lecture 2	EMSA-2510 with grade C or better	EMSA-2520, EMSA-2530	4.0
EMSA-2611	Hospital Clinical Rotation for the Paramedic	Permission of instructor	–	2.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
EMERGENCY MEDICAL SERVICES—PARAMEDIC/FIREFIGHTER**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 4				
EMSA-2560	Paramedic Lecture 3	EMSA-2550 with grade C or better	EMSA-2570, EMSA-2580, EMSA-2612, EMSA-2620	3.0
EMSA-2570	Pharmacology for the Paramedic 2	EMSA-2520 with grade C or better	EMSA-2560, EMSA-2580, EMSA-2612, EMSA-2620	3.0
EMSA-2580	Paramedic Lab 2	EMSA-2530 with grade C or better	EMSA-2560, EMSA-2570, EMSA-2612, EMSA-2620	3.0
EMSA-2612	Hospital Clinical Rotation for the Paramedic 2	EMSA-2611	–	4.0
EMSA-2620	Paramedic Lecture 4	EMSA-2560 with grade C or better	EMSA-2560, EMSA-2570, EMSA-2580, EMSA-2612	3.0
SEMESTER 5				
EMSA-2600	Advanced Life Support Internship	Permission of instructor	–	6.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN EMERGENCY MEDICAL SERVICES—PARAMEDIC/FIREFIGHTER

Career preparation and related courses *(require successful completion of a minimum of 50 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
EMERGENCY MEDICAL SERVICES—PARAMEDIC/FIREFIGHTER**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1 & 2				
FIRE-2000	Basic Fire Academy–Firefighter 1	Consent of Department and acceptable score on reading placement test. Michigan State law mandates that persons taking this course must be at least 18 years of age, have a valid Michigan driver’s license, no felony convictions, and successfully pass the Michigan Municipal League Physical Agility test prior to being accepted.	–	6.0
FIRE-2010	Basic Fire Academy–Firefighter 2	FIRE-2000 and consent of department	–	6.0
SEMESTER 3				
EMSA-2510	Introduction to Paramedic Procedures	Permission from instructor and acceptable scores on reading and algebra placement tests	EMSA-2520, EMSA-2530, EMSA-2550	4.0
EMSA-2520	Pharmacology for the Paramedic 1	Permission from instructor	EMSA-2510, EMSA-2530, EMSA-2550	3.0
EMSA-2530	Paramedic Lab 1	Permission from instructor	EMSA-2510, EMSA-2520, EMSA-2550	3.0
EMSA-2550	Paramedic Lecture 2	EMSA-2510 with grade C or better	EMSA-2520, EMSA-2530	4.0
EMSA-2611	Hospital Clinical Rotation for the Paramedic	Permission of instructor	–	2.0
SEMESTER 4				
EMSA-2560	Paramedic Lecture 3	EMSA-2550 with grade C or better	EMSA-2570, EMSA-2580, EMSA-2612, EMSA-2620	3.0
EMSA-2570	Pharmacology for the Paramedic 2	EMSA-2520 with grade C or better	EMSA-2560, EMSA-2580, EMSA-2612, EMSA-2620	3.0
EMSA-2580	Paramedic Lab 2	EMSA-2530 with grade C or better	EMSA-2560, EMSA-2570, EMSA-2612, EMSA-2620	3.0
EMSA-2600	Advanced Life Support Internship	Permission of instructor	–	6.0
EMSA-2612	Hospital Clinical Rotation for the Paramedic 2	EMSA-2611	–	4.0
EMSA-2620	Paramedic Lecture 4	EMSA-2560 with grade C or better	EMSA-2560, EMSA-2570, EMSA-2580, EMSA-2612	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/EMSPFCT.html>

See page 20 for Gainful Employment Information.

Entrepreneurship—Innovation

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Business Administration	Entrepreneurship—Innovation	63	Designed for transferring into a Bachelor of Business Administration program or entry into the field of Entrepreneurship.
Certificate	Entrepreneurship—Innovation	45-46	Designed for entry-level positions or furthering one's career.
Skill Specific Certificate	Entrepreneurship—Innovation	12	Designed for entry-level positions or furthering one's career.

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Patrick Greek	586.286.2253	greekp@macomb.edu	Center Campus
Professor	Angela McLean	586.445.7216	mcleana@macomb.edu	South Campus

Program Description:

The Entrepreneurship-Innovation program is designed for students who desire to develop their own businesses or pursue a career in a corporation that requires continuous innovation. It provides a comprehensive knowledge of accounting, management, globalization, marketing, and computer information systems as these areas relate to entrepreneurial business. This includes an understanding of how to develop a new business plan, conduct marketing research to determine the feasibility of a new business, obtain capital resources for a new business enterprise, pursue global opportunities, manage the cash flow of a new business, and understand the legal issues related to entrepreneurial endeavors.

Career Opportunities:

Entrepreneurship & Small Business—Associate of Business Administration—Job titles such as Business Owner, General & Operations Managers and Managers (other) are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Entrepreneurship & Small Business—Certificate: Job titles such as Business Owner, General & Operations Managers and Managers (other) are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Entrepreneurship & Small Business—Skill Specific Certificate: Job titles such as Business Owner, General & Operations Managers and Managers (other) are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF BUSINESS ADMINISTRATION IN
ENTREPRENEURSHIP—INNOVATION**

Career preparation and related courses *(require successful completion of a minimum of 63 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF BUSINESS ADMINISTRATION IN
ENTREPRENEURSHIP—INNOVATION**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
ACCT 1070 –OR– ACCT-1080	Accounting for Entrepreneurs –OR– Principles of Accounting 1	–	3.0-4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
BLAW-1080	Business Law 1	–	4.0
Group III Courses: ECON-1160 –OR– PSYC-1010	Principles of Economics 1 –OR– Introductory Psychology	– –	3.0-4.0
SEMESTER 3 & 4			
BCOM-2050	Business Communications	–	4.0
BUSN-1210	Entrepreneurship Fundamentals	–	3.0
BUSN-1220	Franchising Fundamentals	–	3.0
BUSN-1240	Corporate Entrepreneurship	–	3.0
BUSN-2000	Global Entrepreneurship	–	3.0
BUSN-2030	Global Purchasing & Supply Chain Management	–	3.0
MGMT-1210	Entrepreneurship & Small Business Management	ACCT-1050, ACCT-1070 or ACCT-1080	3.0
MKTG-1210	Small Business Marketing	–	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

CERTIFICATE IN ENTREPRENEURSHIP—INNOVATION

Career preparation and related courses *(require successful completion of a minimum of 45 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN ENTREPRENEURSHIP—INNOVATION

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
ACCT 1070 –OR– ACCT-1080	Accounting for Entrepreneurs –OR– Principles of Accounting 1	–	3.0-4.0
SEMESTER 2			
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
BLAW-1080	Business Law 1	–	4.0
SEMESTER 3 & 4			
BCOM-2050	Business Communications	–	4.0
BUSN-1210	Entrepreneurship Fundamentals	–	3.0
BUSN-1220	Franchising Fundamentals	–	3.0
BUSN-1240	Corporate Entrepreneurship	–	3.0
BUSN-2000	Global Entrepreneurship	–	3.0
BUSN-2030	Global Purchasing & Supply Chain Management	–	3.0
MGMT-1210	Entrepreneurship & Small Business Management	ACCT-1050 or ACCT-1070 or ACCT-1080	3.0
MKTG-1210	Small Business Marketing	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ENTRINNCT.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN ENTREPRENEURSHIP—INNOVATION

Career preparation and related courses *(require successful completion of a minimum of 12 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN ENTREPRENEURSHIP—INNOVATION

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ACCT-1070	Accounting for Entrepreneurs	–	3.0
BUSN-1210	Entrepreneurship Fundamentals	–	3.0
MGMT-1210	Entrepreneurship & Small Business Management	ACCT- 1050, ACCT-1070 or ACCT-1080	3.0
MKTG-1210	Small Business Marketing	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ENTRINNSK.html>

See page 20 for Gainful Employment Information.

Entrepreneurship—Small Business

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Business Administration	Entrepreneurship—Small Business	64	Designed for transferring into a Bachelor of Business Administration program or entry into the field of Entrepreneurship.
Certificate	Entrepreneurship—Small Business	46-48	Designed for entry-level positions or furthering one's career.
Skill Specific Certificate	Entrepreneurship—Small Business	13	Designed for entry-level positions or furthering one's career.

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Patrick Greek	586.286.2253	greekp@macomb.edu	Center Campus
Professor	Angela McLean	586.445.7216	mcleana@macomb.edu	South Campus

Program Description:

The Entrepreneurship & Small Business program is designed for students who desire to develop their own small businesses. It provides a comprehensive knowledge of accounting, management, globalization, marketing, and computer information systems as these areas relate to entrepreneurial business. This includes an understanding of how to develop a new business plan, conduct marketing research to determine the feasibility of a new business, obtain capital resources for a new business enterprise, pursue global opportunities, manage the cash flow of a new business, and understand the legal issues related to entrepreneurial endeavors.

Career Opportunities:

Entrepreneurship & Small Business—Associate of Business Administration: Job titles such as Business Owner, General & Operations Managers and Managers (other) are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Entrepreneurship & Small Business—Certificate: Job titles such as Business Owner, General & Operations Managers and Managers (other) are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Entrepreneurship & Small Business—Skill Specific Certificate: Job titles such as Business Owner, General & Operations Managers and Managers (other) are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF BUSINESS ADMINISTRATION IN
ENTREPRENEURSHIP—SMALL BUSINESS**

Career preparation and related courses *(require successful completion of a minimum of 64 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF BUSINESS ADMINISTRATION IN
ENTREPRENEURSHIP—SMALL BUSINESS**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
BCOM-2050	Business Communications	–	4.0
Group III Course: ECON-1160 –OR– PSYC-1010	Principles of Economics 1 –OR– Introductory Psychology	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 3			
BUSN-1210	Entrepreneurship Fundamentals	–	3.0
ACCT-1050 –OR– ACCT 1070 –OR– ACCT-1080	Financial Record Keeping –OR– Accounting for Entrepreneurs –OR– Principles of Accounting 1	–	3.0-4.0
BLAW-1080	Business Law 1	–	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
SEMESTER 4			
BLAW-1090	Business Law 2	BLAW-1080	4.0
MKTG-1210	Small Business Marketing	–	3.0
MGMT-1210	Entrepreneurship & Small Business Management	ACCT-1050, ACCT-1070 or ACCT-1080	3.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF BUSINESS ADMINISTRATION IN
ENTREPRENEURSHIP—SMALL BUSINESS**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 5			
And 3 courses from the following:			
BUSN-1220	Franchising Fundamentals	–	3.0
BUSN-2060	Corporate Responsibility	–	3.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2235	3.0
ITWP-1400	SEO (Search Engine Optimization) for the Web	ITWP-1000	4.0
MKTG-1050	E-Marketing	–	3.0
MKTG-2010	Professional Selling	–	3.0
MKTG-1020	Dynamics of Retailing	–	3.0
MKTG-2060	Consumer Behavior	MKTG-1010	3.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
ENTREPRENEURSHIP—SMALL BUSINESS**

Career preparation and related courses *(require successful completion of a minimum of 46 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
ENTREPRENEURSHIP—SMALL BUSINESS**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
ACCT-1050	Financial Record Keeping		4.0
–OR–	–OR–		
ACCT 1070	Accounting for Entrepreneurs	–	3.0
–OR–	–OR–		
ACCT-1080	Principles of Accounting 1		4.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SEMESTER 2			
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
BLAW-1080	Business Law 1	–	4.0
SEMESTER 3 & 4			
BCOM-2050	Business Communications	–	4.0
BUSN-1210	Entrepreneurship Fundamentals	–	3.0
MGMT-1210	Entrepreneurship & Small Business Management	ACCT-1050, ACCT-1070 or ACCT-1080	3.0
MKTG-1210	Small Business Marketing	–	3.0
BLAW-1090	Business Law 2	–	4.0
And 3 courses from the following:			
BUSN-1220	Franchising Fundamentals	–	3.0
BUSN-2060	Corporate Responsibility	–	3.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2235	3.0
ITWP-1400	SEO (Search Engine Optimization) for the Web	ITWP-1000	4.0
MKTG-1020	Dynamics of Retailing	–	3.0
MKTG-1050	E-Marketing	–	3.0
MKTG-2010	Professional Selling	–	3.0
MKTG-2060	Consumer Behavior	MKTG-1010	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ENTRSMBUSCT.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
ENTREPRENEURSHIP—SMALL BUSINESS**

Career preparation and related courses *(require successful completion of a minimum of 13 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
SKILL SPECIFIC CERTIFICATE IN
ENTREPRENEURSHIP—SMALL BUSINESS**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ACCT-1050	Financial Record Keeping	–	4.0
BUSN-1210	Entrepreneurship Fundamentals	–	3.0
MGMT-1210	Entrepreneurship & Small Business Management	ACCT 1050, ACCT 1070 or ACCT 1080	3.0
MKTG-1210	Small Business Marketing	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ENTRSMBUSENTRSK.html>

See page 20 for Gainful Employment Information.

Finance

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Business Administration	Finance	63	Designed for transferring into a Bachelor of Business Administration program or entry into the field of Finance.
Certificate	Finance	45	Designed for entry-level positions or furthering one's career.
Skill Specific Certificate	Finance	16	Designed for entry-level positions or furthering one's career.

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Shirley Glass	586.445.7154	glasss@macomb.edu	South Campus
Professor	Fred Jex	586.286.2171	jexf@macomb.edu	Center Campus

Program Description:

The Finance program prepares students for entry-level positions in the field of corporate money management and enhances the skills of individuals currently employed in corporate finance, banking, lending, and investment. The program provides specialized knowledge in the various financial markets, financial decision making, and financial operations as they are practiced in American business.

Career Opportunities:

Finance—Associate of Business Administration: Job titles such as Credit Counselors, Financial Clerks, Financial Specialists, Loan Officers, and Loan Interviewers & Clerks are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Finance—Certificate: Job titles such as Credit Counselors, Financial Clerks, Financial Specialists, Loan Officers, and Loan Interviewers & Clerks are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF BUSINESS ADMINISTRATION IN FINANCE

Career preparation and related courses *(require successful completion of a minimum of 63 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF BUSINESS ADMINISTRATION IN FINANCE

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ACCT-1080	Principles of Accounting 1	–	4.0
BUSN-1010	Business Enterprise	–	3.0
FINC-1010	Introduction to Finance	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C–or better	3.0-4.0
SEMESTER 2			
FINC-2020	Bank & Lending Management	–	
ITCS-1010	Computer & Information Processing Principles	–	4.0
ACCT-1090	Principles of Accounting 2	ACCT-1080	4.0
BCOM-2050	Business Communications	–	4.0
SEMESTER 3			
FINC-2030	Corporate Finance	ACCT-1080, FINC-1010	3.0
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
SEMESTER 4			
FINC-2040	The Stock Market	–	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 5			
BLAW-1080	Business Law 1	–	4.0
Group III Course: ECON-1160	Principles of Economics I	–	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN FINANCE

Career preparation and related courses *(require successful completion of a minimum of 45 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN FINANCE

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ACCT-1080	Principles of Accounting 1	–	4.0
BUSN-1010	Business Enterprise	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SEMESTER 2			
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
ACCT-1090	Principles of Accounting 2	ACCT-1080	4.0
FINC-1010	Introduction to Finance	–	3.0
SEMESTER 3			
BLAW-1080	Business Law 1	–	4.0
ACCT-2270	Managerial Accounting	ACCT-1090	4.0
BCOM-2050	Business Communications	–	4.0
SEMESTER 4			
FINC-2020	Bank & Lending Management	–	3.0
FINC-2030	Corporate Finance	ACCT-1080, FINC-1010	3.0
FINC-2040	The Stock Market	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/FINCT.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN FINANCE

Career preparation and related courses *(require successful completion of a minimum of 16 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN FINANCE

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ACCT-1080	Principles of Accounting 1	–	4.0
FINC-1010	Introduction to Finance	–	3.0
FINC-2020	Bank & Lending Management	–	3.0
FINC-2030	Corporate Finance	–	3.0
FINC-2040	The Stock Market	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/FINCSK.html>

See page 20 for Gainful Employment Information

Fire Science

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Fire Science	64	–
Certificate	Fire Science Certificate	32	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Kenneth Staelgraeve	586.226.4991	staelgraevek@macomb.edu	Center Campus

Program Description:

The Fire Science program is designed to impart the skills, knowledge, and understanding necessary to be successful in and to increase the professionalization of the fire protection field.

This program develops technical competency and prepares the student for managerial and leadership positions in municipal, industrial, and business areas of fire protection, suppression, and prevention.

Requirements & Specific Information:

A student may be awarded credit if they have a current license as an Emergency Medical Technician–Basic (issued by the Michigan Department of Consumer & Industry Services–Division of Emergency Medical Services). Credit may be awarded for Fire Officer I, Fire Officer II, Fire Officer III, as well as certain National Fire Academy program(s).

Career Opportunities:

Fire Science–Associate of Applied Science: Job titles such as Firefighter, Fire Inspector & Investigator, and Security & Fire Alarm System Installer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Fire Science – Certificate: Job titles such as Firefighter, Fire Inspector & Investigator, and Security & Fire Alarm System Installer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN FIRE SCIENCE

Career preparation and related courses *(require successful completion of a minimum of 64 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN FIRE SCIENCE				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
EMSA-1215	Basic Emergency Medical Technician Lecture	Acceptable score on reading placement test	EMSA-1220, EMSA-1250	7.0
EMSA-1220	Basic EMT Lab	—	EMSA-1215, EMSA-1250	4.0
EMSA-1250	Clinical Rotation for the Basic EMT	—	EMSA-1215, EMSA-1220	1.0
FIRE-1000	Philosophy of Fire Protection	—	—	3.0
SEMESTER 2				
FIRE-1010	Fundamentals of Fire Protection	—	—	3.0
FIRE-2410	Building Construction for Fire Protection	—	—	3.0
Group I Course: ENGL-1180 —OR— ENGL-1210	Communications 1 —OR— Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C—or better	—	3.0-4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	—	—	2.0-4.0
BCOM-2080	Business Communications for Public Service	—	—	2.0
SEMESTER 3				
FIRE-1180	Fire Science 1	—	—	4.0
FIRE-1280	Fire Protection Equipment & Systems 1	—	—	3.0
FIRE-2130	Fire Hydraulics & Water Supply	—	—	3.0
FIRE-2300	Fire Department Administration	—	—	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	—	—	3.0-4.0
SEMESTER 4				
FIRE-1190	Fire Science 2	—	—	4.0
FIRE-1290	Fire Protection Equipment & Systems 2	—	—	3.0
FIRE-2510	Fire Fighting Tactics & Strategy	—	—	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	—	—	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	—	—	2.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule

CERTIFICATE IN FIRE SCIENCE

Career preparation and related courses *(require successful completion of a minimum of 32 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN FIRE SCIENCE

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 2			
FIRE-1010	Fundamentals of Fire Protection	–	3.0
SEMESTER 3			
FIRE-1000	Philosophy of Fire Protection	–	3.0
FIRE-1180	Fire Science 1	–	4.0
FIRE-1280	Fire Protection Equipment & Systems 1	–	3.0
FIRE-2130	Fire Hydraulics & Water Supply	–	3.0
FIRE-2300	Fire Department Administration	–	3.0
SEMESTER 3			
FIRE-1190	Fire Science 2	–	4.0
FIRE-1290	Fire Protection Equipment & Systems 2	–	3.0
FIRE-2410	Building Construction for Fire Protection	–	3.0
FIRE-2510	Fire Fighting Tactics & Strategy	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/FIRECT.html>

See page 20 for Gainful Employment Information.

Fire Science with Fire Academy

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Fire Science with Fire Academy	64	–
Certificate	Fire Science with Fire Academy	44	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Kenneth Staelgraeve	586.226.4991	staelgraevek@macomb.edu	Center Campus

Program Description:

The Fire Science program is designed to impart the skills, knowledge, and understanding necessary to be successful in and to increase the professionalization of the fire protection field.

This program develops technical competency and prepares the student for managerial and leadership positions in municipal, industrial, and business areas of fire protection, suppression, and prevention.

Requirements & Specific Information:

A student may be awarded credit if they have a current license as an Emergency Medical Technician–Basic (issued by the Michigan Department of Consumer & Industry Services–Division of Emergency Medical Services). Credit may be awarded for Fire Officer I, Fire Officer II, Fire Officer III, as well as certain National Fire Academy program(s).

Career Opportunities:

Fire Science with Fire Academy–Associate of Applied Science: Job titles such as Firefighter, Fire Inspector & Investigator, and Security & Fire Alarm System Installer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Fire Science with Fire Academy–Certificate: Job titles such as Firefighter, Fire Inspector & Investigator, and Security & Fire Alarm System Installer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN FIRE SCIENCE WITH FIRE ACADEMY

Career preparation and related courses *(require successful completion of a minimum of 64 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN FIRE SCIENCE WITH FIRE ACADEMY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
FIRE-2000	Basic Fire Academy–Firefighter 1	Consent of Department and acceptable score on reading placement test. Michigan State law mandates that persons taking this course must be at least 18 years of age, have a valid Michigan driver’s license, no felony convictions, and successfully pass the Michigan Municipal League Physical Agility test prior to being accepted.	6.0
FIRE-2010	Basic Fire Academy–Firefighter 2	FIRE-2000 and consent of department	6.0
FIRE-1000	Philosophy of Fire Protection	–	3.0
SEMESTER 2			
FIRE-1010	Fundamentals of Fire Protection	–	3.0
FIRE-2410	Building Construction for Fire Protection	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C–or better	3.0-4.0
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
BCOM-2080	Business Communications for Public Service	–	2.0
SEMESTER 3			
FIRE-1180	Fire Science 1	–	4.0
FIRE-1280	Fire Protection Equipment & Systems 1	–	3.0
FIRE-2130	Fire Hydraulics & Water Supply	–	3.0
FIRE-2300	Fire Department Administration	–	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
SEMESTER 4			
FIRE-1190	Fire Science 2	–	4.0
FIRE-1290	Fire Protection Equipment & Systems 2	–	3.0
FIRE-2510	Fire Fighting Tactics & Strategy	–	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule

CERTIFICATE IN FIRE SCIENCE WITH FIRE ACADEMY

Career preparation and related courses *(require successful completion of a minimum of 44 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN FIRE SCIENCE WITH FIRE ACADEMY			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
FIRE-2000	Basic Fire Academy–Firefighter 1	Consent of Department and acceptable score on reading placement test. Michigan State law mandates that persons taking this course must be at least 18 years of age, have a valid Michigan driver’s license, no felony convictions, and successfully pass the Michigan Municipal League Physical Agility test prior to being accepted.	6.0
FIRE-2010	Basic Fire Academy–Firefighter 2	FIRE-2000 and consent of department	6.0
SEMESTER 2			
FIRE-1010	Fundamentals of Fire Protection	–	3.0
SEMESTER 3			
FIRE-1000	Philosophy of Fire Protection	–	3.0
FIRE-1180	Fire Science 1	–	4.0
FIRE-1280	Fire Protection Equipment & Systems 1	–	3.0
FIRE-2130	Fire Hydraulics & Water Supply	–	3.0
FIRE-2300	Fire Department Administration	–	3.0
SEMESTER 4			
FIRE-1190	Fire Science 2	–	4.0
FIRE-1290	Fire Protection Equipment & Systems 2	–	3.0
FIRE-2410	Building Construction for Fire Protection	–	3.0
FIRE-2510	Fire Fighting Tactics & Strategy	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/FIREACADCT.html>

See page 20 for Gainful Employment Information.

General Business

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Business Administration	General Business	62	Designed for transferring into a Bachelor of Business Administration program or entry into the field of Business.
Certificate	General Business	36-37	Designed for entry-level positions or furthering one's career.
Skill Specific Certificate	General Business—International Business	12	Designed for entry-level positions or furthering one's career.
	General Business—Global Supply Chain Management	17	

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Patrick Greek	586.286.2253	greekp@macomb.edu	Center Campus
Professor	Angela McLean	586.445.7216	mcleana@macomb.edu	South Campus

Program Description:

The General Business program is designed to allow students the widest possible latitude in choosing business courses. Seven common core and one required business courses provide basic knowledge and skills. In addition, students must select a minimum of 9 semester hours in business electives enabling students to tailor a business program to their educational needs.

This program is compatible with many bachelor degree programs offered through local colleges and universities; see an academic advisor or counselor for full details. Refer to Degree & Certification section online.

The Skill Specific Certificate in General Business—International Business is designed for students who desire to pursue a career in international business and to enhance their knowledge of global business practices. This program provides comprehensive knowledge of international business practices, marketing, supply chain management, and global entrepreneurship. Emphasis is also placed on the study of culture, economic, social, and political aspects affecting global business operations.

The Skill Specific Certificate in General Business—Global Supply Chain Management is designed for students who desire to develop skills in purchasing, global sourcing, logistics, distribution, and retailing. This program also emphasizes the importance of creating a sustainable, competitive advantage through the efficient performance of the channel partners within the supply chain.

Career Opportunities:

General Business—Associate of Business Administration: Job titles such as Business Operations Specialist, Management and Manager are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

General Business—Certificate: Job titles such as Business Operations Specialist, Management and Manager are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

General Business—International Business - Skill Specific Certificate: Job titles such as Business Operations Specialist, Management and Manager are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF BUSINESS ADMINISTRATION IN GENERAL BUSINESS

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF BUSINESS ADMINISTRATION IN GENERAL BUSINESS			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
BCOM-2050	Business Communications	–	4.0
Group III Course: ECON-1160	Principles of Economics 1	–	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 3			
BLAW-1080	Business Law 1	–	4.0
BUSN-2060	Corporate Responsibility	–	3.0
ACCT-1050 –OR– ACCT-1070 –OR– ACCT-1080	Financial Record Keeping –OR– Accounting for Entrepreneurs –OR– Principles of Accounting 1	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
SEMESTER 4			
Electives	Chosen with assistance from counselor or academic advisor	–	7.0-8.0
And an additional 9 credit hours must be selected from courses with the following alpha codes: ACCT, BCOM, BLAW, BUSN, FINC, MGMT, MKTG; any Information Technology course beginning with IT including ITAP, ITBS, ITCS, ITIA, ITML, ITNC, ITNT, ITOS, ITWP.			9.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.
- Elective courses should be selected so they fit with a student’s transfer destination, career goals, and/or certificate requirements. Students should contact a counselor or academic advisor when planning elective coursework.

CERTIFICATE IN GENERAL BUSINESS

Career preparation and related courses *(require successful completion of a minimum of 36 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN GENERAL BUSINESS

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
ACCT-1050 –OR– ACCT-1070 –OR– ACCT-1080	Financial Record Keeping –OR– Accounting for Entrepreneurs –OR– Principles of Accounting 1	–	3.0-4.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SEMESTER 2			
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
BLAW-1080	Business Law 1	–	4.0
SEMESTER 3			
BCOM-2050	Business Communications	–	4.0
BUSN-2060	Corporate Responsibility	–	3.0
And an additional 9 credit hours must be selected from courses with the following alpha codes: ACCT, BCOM, BLAW, BUSN, FINC, MGMT, MKTG; any Information Technology course beginning with IT including ITAP, ITBS, ITCS, ITIA, ITML, ITNC, ITNT, ITOS, ITWP.			9.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/GENBUSCT.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN GENERAL BUSINESS—GLOBAL SUPPLY CHAIN MANAGEMENT

Career preparation and related courses *(require successful completion of a minimum of 17 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN GENERAL BUSINESS—GLOBAL SUPPLY CHAIN MANAGEMENT

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
BUSN-1060	Fundamentals of Global Logistics	–	3.0
BUSN-2030	Global Purchasing & Supply Chain Management	–	3.0
BUSN-2100	International Business	–	3.0
BUSN-1660	Business Negotiations	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
And 1 one of the following courses:			–
INTL-2000	Introduction to Latin America	–	4.0
INTL-2010	Introduction to Russia & Eastern Europe	–	4.0
INTL-2300	Introduction to Japan	–	4.0
INTL-2500	Introduction to Chinese Civilization	–	4.0
INTL-2700	Introduction to Africa	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/GENBUSGSSK.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
GENERAL BUSINESS—INTERNATIONAL BUSINESS**

Career preparation and related courses *(require successful completion of a minimum of 12 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN GENERAL BUSINESS—INTERNATIONAL BUSINESS			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
BUSN-2000	Global Entrepreneurship	–	3.0
BUSN-2030	Global Purchasing & Supply Chain Management	–	3.0
BUSN-2100	International Business	–	3.0
MKTG-2150	Global Marketing	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/GENBUSIBSK.html>

See page 20 for Gainful Employment Information.

Health Information Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Health Information Technology	72	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Kristin Dunsmore	586.226.4809	dunsmorek@macomb.edu	Center Campus

Program Description:

Admission Requirements: View Selective Admission for detailed information

The Health Information Technology program focuses on the information needs of health care. Its graduates are prepared with the knowledge and skills necessary to manage health care data used to support patient care, make business and clinical decisions, conduct research, evaluate services, and contribute to the development of computer-based patient record. The profession offers career flexibility and a variety of workplace options. Presently, opportunities for practice are found in numerous areas including hospitals, rehabilitation, pharmaceutical companies, mental health, home health, long term care, veterinary medicine, insurance companies, law firms, private industry, and colleges and universities. Graduates of the program are eligible to write the national accreditation examination for the designation of Registered Health Information Technician (RHIT). While providing students with the skills necessary for immediate employment, the Health Information Technology program also prepares the students for further study if they choose to pursue a Bachelor of Science Degree in Health Information Management.

Requirements & Specific Information:

Students must achieve grade “C” or better, or grade “Pass” (if the course is a Pass/Fail course) for all the Core and Arts and Sciences courses in this program.

Accreditation:

The program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM) (www.cahiim.org). CAHIIM recognizes degree-granting programs in Health Informatics and Information Management that have undergone a rigorous process of voluntary peer review and have met or exceeded the minimum accreditation standards set by the professional association in cooperation with CAHIIM.

Career Opportunities:

Health Information Technology– Associate of Applied Science: Job titles such as Medical Records and Health Information Technicians are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

ASSOCIATE OF APPLIED SCIENCE IN HEALTH INFORMATION TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 72 credit hours)*

ASSOCIATE OF APPLIED SCIENCE IN HEALTH INFORMATION TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
REQUIRED PRELIMINARY COURSES				
Group II Course: BIOL-2710*	Human Physiological Anatomy	–	–	6.0
HHSC-1700*	Medical Terminology	–	–	3.0
ITCS-1010*	Computer & Information Processing Principles	–	–	4.0
BCOM-2050*	Business Communications	–	–	4.0
SEMESTER 1				
HITT-1102	Introduction to Health Information Management & the Health Care Environment	Admission into Health Information Technology Program and BIOL-2710, HHSC-1700, ITCS-1010, and BCOM-2050 with grade C or better	HITT-1103, HITT-1104	3.0
HITT-1103	Legal Aspects of Health Information Management	Admission into Health Information Technology Program and BIOL-2710, HHSC-1700, ITCS-1010, and BCOM-2050 with grade C or better	HITT-1102, HITT-1104	3.0
HITT-1104	Health Information Statistics	Admission into Health Information Technology Program and BIOL-2710, HHSC-1700, ITCS-1010, and BCOM-2050 with grade C or better	HITT-1102, HITT-1103	4.0
Group I Course: ENGL 1180 –OR– ENGL 1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
SEMESTER 2				
HITT-1201	Pathophysiology & Pharmacology Applications in Health Information	Admission into the Health Information Technology Program, and HITT-1102, HITT-1103, and HITT-1104, with grade C or better	HITT-1206, HITT-1208, HITT-1209	3.0
HITT-1206	Health Information Management Systems	Admission into the Health Information Technology Program, and HITT-1102, HITT-1103, and HITT-1104 with grade C or better	HITT-1201, HITT-1208, HITT-1209	3.0
HITT-1208	Computers in Healthcare	Admission into the Health Information Technology Program, and HITT-1102, HITT-1103, and HITT-1104 with grade C or better	HITT-1201, HITT-1206, HITT-1209	2.0
HITT-1209	International Classification of Disease (ICD) Coding—Beginning Coding	Admission into the Health Information Technology Program, and HITT-1102, HITT-1103, and HITT-1104 with grade C or better	HITT-1201, HITT-1206, HITT-1208	3.0

ASSOCIATE OF APPLIED SCIENCE IN HEALTH INFORMATION TECHNOLOGY				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 3				
HITT-2101	Professional Practice Experience 1	Admission into the Health Information Technology Program and HITT-1201, HITT-1206, HITT-1208 and HITT-1209 with grade C or better	HITT-2105, HITT-2106, HITT-2108	3.0
HITT-2105	Healthcare Reimbursement Systems	Admission into the Health Information Technology Program and HITT-1201, HITT-1206, HITT-1208, and HITT-1209 with grade C or better	HITT-2101, HITT-2106, HITT-2108	3.0
HITT-2106	CPT/HCPCS & Outpatient Coding	Admission into the Health Information Technology Program, and HITT-1201, HITT-1206, HITT-1208, and HITT-1209 with grade C or better	HITT-2101, HITT-2105, HITT-2108	3.0
HITT-2108	International Classification of Disease (ICD) Coding—Intermediate Coding	Admission into the Health Information Technology Program, and HITT-1201, HITT-1206, HITT-1208, and HITT-1209, with grade C or better	HITT-2101, HITT-2105, HITT-2106	3.0
Group IV Course: PHIL-2100	Introduction to Ethics	–	–	3.0
SEMESTER 4				
HITT-2202	Organization Performance for Health Information Management Professionals	Admission into the Health Information Technology Program, and HITT-2101, HITT-2105, HITT-2106, and HITT-2108, with grade C or better	HITT-2203, HITT-2204, HITT-2205	3.0
HITT-2203	Management for Health Information Management Professionals	Admission into the Health Information Technology Program, and HITT-2101, HITT-2105, HITT-2106, and HITT-2108, with grade C or better	HITT-2202, HITT-2204, HITT-2205	3.0
HITT-2204	Health Information Technology Seminar	Admission into the Health Information Technology Program, and HITT-2101, HITT-2105, HITT-2106 and HITT-2108 with grade C or better	HITT-2202, HITT-2203, HITT-2205	1.0
HITT-2205	Professional Practice Experience 2	Admission into the Health Information Technology Program, HITT-2101, HITT-2105, HITT-2106, and HITT-2108, with grade C or better	HITT-2202, HITT-2203, HITT-2204	3.0
Group III Course: PSYC-1010 –OR– SOCY-1010	Introductory Psychology –OR– Principles of Sociology	–	–	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	–	2-3

NOTES:

- * Prerequisites needed to apply to the program.
- Students must apply through the selective admission process and be accepted into the health information technology program before taking any HITT course.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree.
- It is strongly encouraged that you work with a counselor, academic advisor, or faculty/department coordinator to plan your schedule.

Homeland Security

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Homeland Security	62	–
Certificate	Homeland Security	28	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Director	Carl Seitz	586.498.4066	seitzc@macomb.edu	Center Campus
Professor	Gino Hliebaj	586.286.2159	hliebaj@macomb.edu	Center Campus

Program Description:

The Homeland Security program provides students with a foundation of private and homeland security knowledge to build upon as a transfer to a specialty degree. The objectives of the Homeland Security Associate Degree Program are to upgrade personnel employed in the security industry and to prepare students for full-time employment in this field. The student will develop or improve skills and knowledge of criminal law, current issues in homeland security, evidence and criminal procedures and investigation, as well as other facets of law enforcement.

Career Opportunities:

Homeland Security—Associate of Applied Science: Job titles such as Transportation Security Screeners, Detectives & Criminal Investigators, Computer Network Support Specialist Security Systems Technician, and Security & Fire Alarm System Installers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Homeland Security—Certificate: Job titles such as Transportation Security Screeners, Detectives & Criminal Investigators, Computer Network Support Specialist Security Systems Technician, and Security & Fire Alarm System Installers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN HOMELAND SECURITY

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN HOMELAND SECURITY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2080	Business Communications for Public Service	–	2.0
HLND-1100	Introduction to Homeland Security	–	3.0
LAW-1320	Interviewing	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group II Course	Any ASTR, BIOL, CHEM, ENV, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 2			
HLND-1180	Intelligence Analysis & Security Management	–	3.0
LAW-1500	Analysis of Terrorism	–	3.0
Group III Course: PSYC-1010 –OR– SOCY-1010	Introductory Psychology –OR– Principles of Sociology	–	4.0
And 2 courses from the following:			
FIRE-1000	Philosophy of Fire Protection	–	3.0
FIRE-2300	Fire Department Administration	–	3.0
LAW-1100	Criminal Justice	–	3.0
LAW-1120	Introduction to Corrections	–	3.0
LAW-1280	The Police Function	–	3.0
LAW-1290	Current Issues in Policing	–	3.0
LAW-1400	Crime Causation	–	3.0
LAW-1410	Delinquency Prevention & Control	–	3.0
LAW-2350	Criminal Investigation & Laboratory Techniques	–	4.0
LAW-2700	Advanced Court Procedures	LAW-1100 and either LAW-1280 or LAW-1290	3.0
LAW-2903	Directed Study	Approval of directed study agreement	3.0
SECR-1000	Introduction to Security	–	3.0
SECR-1120	Principles of Loss Prevention	–	3.0
HLND-1000	Citizen Emergency Preparedness	–	2.0
SEMESTER 3			
LAW-2680	Evidence & Criminal Procedures	–	4.0
HLND-1190	Border Security & Transportation	–	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN HOMELAND SECURITY			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 4			
LAWE-2690	Criminal law	–	4.0
HLND-2800	Introduction to Emergency Management	–	3.0
And 2 courses from the following, not chosen in semester 2:			
FIRE-1000	Philosophy of Fire Protection	–	3.0
FIRE-2300	Fire Department Administration	–	3.0
LAWE-1100	Criminal Justice	–	3.0
LAWE-1120	Introduction to Corrections	–	3.0
LAWE-1280	The Police Function	–	3.0
LAWE-1290	Current Issues in Policing	–	3.0
LAWE-1400	Crime Causation	–	3.0
LAWE-1410	Delinquency Prevention & Control	–	3.0
LAWE-2350	Criminal Investigation & Laboratory Techniques	–	4.0
LAWE-2700	Advanced Court Procedures	LAWE-1100 and either LAW-1280 or LAW-1290	3.0
LAWE-2903	Directed Study	Approval of directed study agreement	3.0
SECR-1000	Introduction to Security	–	3.0
SECR-1120	Principles of Loss Prevention	–	3.0
HLND-1000	Citizen Emergency Preparedness	–	2.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor or advisor to plan your schedule.
- Students planning to obtain a Bachelor’s degree in Homeland Security should seek the advice of a program advisor, counselor, or academic advisor when selecting elective courses.
- (Alternative Selection) The student may arrange to take courses specifically directed to the educational occupational goal for employment (of the student) with the consent of the faculty advisor and the department. The courses must be applicable to specific fields in Homeland Security that would provide the student an improved background for the desired specific employment opportunities at the federal, state or local levels.

CERTIFICATE IN HOMELAND SECURITY

Career preparation and related courses *(require successful completion of a minimum of 28 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN HOMELAND SECURITY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2080	Business Communications for Public Service	–	2.0
HLND-1100	Introduction to Homeland Security	–	3.0
LAWE-1320	Interviewing	–	3.0
SEMESTER 2			
HLND-1180	Intelligence Analysis & Security Management	–	3.0
LAWE-1500	Analysis of Terrorism	–	3.0
SEMESTER 3			
LAWE-2680	Evidence & Criminal Procedures	–	4.0
HLND-1190	Border Security & Transportation	–	3.0
SEMESTER 4			
LAWE-2690	Criminal Law	–	4.0
HLND-2000	Introduction to Emergency Management	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/HLNDCT.html>

See page 20 for Gainful Employment Information.

Hospitality Management

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Business Administration	Hospitality Management	65	Designed for transferring into a Bachelor of Business Administration program or entry into the field of Hospitality Management.
Certificate	Hospitality Management	47	Designed for entry-level positions or furthering one's career.
Skill Specific Certificate	Hospitality Management	22	Designed for entry-level positions or furthering one's career.

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Tanya Balcom	586.286.4830	balcomt@macomb.edu	South Campus

Program Description:

The Hospitality Management program prepares students for entry-level positions in hospitality management as well as enhancing the skills of individuals currently employed in lodging, gaming, entertainment venues, and restaurants. The program provides specialized knowledge in the various management techniques and skills as they are practiced in the hospitality industry.

Career Opportunities:

Hospitality Management–Associate of Business Administration: Job titles such as Concierge, Hotel/Motel/Resort Desk Clerks, Lodging Managers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Hospitality Management–Certificate: Job titles such as Concierge, Hotel/Motel/Resort Desk Clerks, Lodging Managers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Hospitality Management–Skill Specific Certificate: Job titles such as Concierge, Hotel/Motel/Resort Desk Clerks, Lodging Managers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF BUSINESS ADMINISTRATION IN HOSPITALITY MANAGEMENT

Career preparation and related courses *(require successful completion of a minimum of 65 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF BUSINESS ADMINISTRATION IN HOSPITALITY MANAGEMENT

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
HTMT 1010	Introduction to the Hospitality Industry	–	3.0
CULH-1155	Sanitation	–	2.0
MGMT-1010	Principles of Management	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
MKTG-1010	Principles of Marketing	–	3.0
CULH-1255	Table Service	–	3.0
CULH-1440	Beverage Service	–	2.0
BUSN 1010	Business Enterprise	–	4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS		2.0-4.0
SEMESTER 3			
ACCT-1050 –OR– ACCT-1070 –OR– ACCT-1080	Financial Record Keeping –OR– Accounting for Entrepreneurs –OR– Principles of Accounting 1	–	3.0-4.0
BLAW-1080	Business Law 1	–	4.0
HTMT-1020	Lodging Management 1	–	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC		3.0-4.0
SEMESTER 4			
BLAW 1080	Business Law 1	–	4.0
HTMT-1030	Event Planning	–	3.0
HTMT-1040	Hospitality Sales & Marketing	–	4.0
CRER-2100 –OR– CRER-2200	Internship Experience Part-Time –OR– Internship Experience Full-Time	–	0.0
CRER-1510	Internship Seminar Workplace Success Strategies	–	1.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

CERTIFICATE IN HOSPITALITY MANAGEMENT

Career preparation and related courses *(require successful completion of a minimum of 47 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN HOSPITALITY MANAGEMENT			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
CULH-1155	Sanitation	–	2.0
MGMT-1010	Principles of Management	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SEMESTER 2			
MKTG-1010	Principles of Marketing	–	3.0
CULH-1255	Table Service	–	3.0
CULH-1440	Beverage Service	–	2.0
HTMT-1010	Introduction to the Hospitality Industry	–	4.0
SEMESTER 2			
ACCT-1050 –OR– ACCT-1070 –OR– ACCT-1080	Financial Record Keeping –OR– Accounting for Entrepreneurs –OR– Principles of Accounting 1	–	3.0-4.0
BLAW-1080	Business Law 1	–	4.0
HTMT-1020	Lodging Management 1	–	3.0
SEMESTER 3			
BCOM-2050	Business Communications	–	4.0
HTMT-1030	Event Planning	–	3.0
HTMT-1040	Hospitality Sales & Marketing	–	4.0
CRER-2100 –OR– CRER-2200	Internship Experience Part-Time –OR– Internship Experience Full-Time	–	0.0
CRER-1510	Internship Seminar Workplace Success Strategies	–	1.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/HTMTCT.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN HOSPITALITY MANAGEMENT

Career preparation and related courses *(require successful completion of a minimum of 22 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN HOSPITALITY MANAGEMENT

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
CULH-1155	Sanitation	–	2.0
CULH-1255	Table Service	–	3.0
CULH-1440	Beverage Service	–	2.0
HTMT-1010	Introduction to the Hospitality Industry	–	4.0
HTMT-1020	Lodging Management 1	–	3.0
HTMT-1030	Event Planning	–	3.0
HTMT-1040	Hospitality Sales & Marketing	–	4.0
CRER-2100 –OR– CRER-2200	Internship Experience Part-Time –OR– Internship Experience Full-Time	–	0.0
CRER-1510	Internship Seminar Workplace Success Strategies	–	1.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/HTMTSK.html>

See page 20 for Gainful Employment Information.

Information Technology—Applications Professional

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Information Technology–Applications Professional	64	–
Certificate	Information Technology-Applications Professional	28	–
Skill Specific Certificate	Information Technology-Applications Professional-Strategic Database	17	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Cheryl Sypniewski	586.226.4762	sypniewskic@macomb.edu	Center Campus
Professor	Martin Kohl	586.286.2078	kohlM@macomb.edu	Center Campus
Professor	Elizabeth Jenaway	586.445.7412	jenawaye@macomb.edu	Center Campus

Program Description:

The IT program emphasizes the use of computers to solve business problems. The curriculum currently consists of the following six specialties: IT Applications Professional, IT Professional, IT Networking Specialist, IT Programming, IT Programming for Electronic Games, and IT Web Programming.

Today's knowledge workers need to know how to take data and transform it into useful information that enhances productivity in the workplace. The Information Technology—Applications Professional program emphasizes software applications and communication skills required in business. The program focus is on developing expert level application skills with special emphasis on enhancing critical thinking and decision making capabilities while being sufficiently prepared for professional certification (Microsoft Office Specialist (MOS)). In addition to becoming proficient in the use of software applications, the program also emphasizes the development of effective communications skills so important in business today. Students will create focused, concise, thorough, applicable reports and proposals that include a specific level of critical detail used in the decision making process. Additionally, the program provides coverage of critical content management, compliance, and legislative issues that business is required to comply with in today's increasingly regulated world. Students also can develop skills in database management and marketing research methods.

Career Opportunities:

Job titles such as Applications Professional and IT Professional are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
INFORMATION TECHNOLOGY—APPLICATIONS PROFESSIONAL**

Career preparation and related courses *(require successful completion of a minimum of 64 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—APPLICATIONS PROFESSIONAL**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	IT program major –OR– Admitted into Walsh College Fast Track program	4.0
MGMT-1010	Principles of Management	–	3.0
BCOM-2050	Business Communications	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C or better	3.0-4.0
SEMESTER 2			
ITCS-1400	Micros in Business	ITCS-1010 or ITCS-2335	4.0
ITAP-1510	Advanced Business Document Design & Publication	ITCS-1400	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Elective	See Following Note	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 3			
MGMT-2000	Business Management Software Applications	MGMT-1010 and ITCS-1010	3.0
ITAP-1610	Business Intelligence Systems & Analysis	ITCS-1400	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
Elective	See Following Note	–	3.0-4.0
BCOM-2060	Advanced Business Communications	BCOM-2050	4.0
ITAP-1610	Business Intelligence Systems & Analysis	ITCS-1400	3.0
SEMESTER 4			
ITAP-1710	Database Analysis & Design	ITCS-1400	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY) FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
BCOM-2070	Technical Business Communications & Project Management Principles	BCOM-2050	3.0
And 12 credit hours from the following:			–
ITAP-2001	Enterprise Content Management 1	–	3
ITAP-2010	Fundamentals of Electronic Records Management (ERM)	–	3
ITAP-2020	Enterprise Content Management 2	ITAP-2001	3
ITAP-2100	Enterprise Collaboration for the Web	ITWP-1000	3
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3
ITWP-1400	SEO (Search Engine Optimization) for the Web	ITWP-1000	4
MKTG-1010	Principles of Marketing	–	3
MKTG-2080	Marketing Research	MKTG-1010 and ITCS-1010	3

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
INFORMATION TECHNOLOGY—APPLICATIONS PROFESSIONAL**

Career preparation and related courses *(require successful completion of a minimum of 28 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN INFORMATION TECHNOLOGY—APPLICATIONS PROFESSIONAL			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	IT program major or admitted into Walsh College Fast Track program	4.0
BCOM-2050	Business Communications	–	4.0
SEMESTER 2			
ITCS-1400	Micros in Business	ITCS-1010 or ITCS-2335	4.0
ITAP-1510	Advanced Business Document Design & Publication	ITCS-1400	3.0
SEMESTER 3			
BCOM-2060	Advanced Business Communications	BCOM-2050	4.0
ITAP-1610	Business Intelligence Systems & Analysis	ITCS-1400	3.0
BCOM-2070	Technical Business Communications & Project Management Principles	BCOM-2050	3.0
SEMESTER 4			
ITAP-1710	Database Analysis & Design	ITCS-1400	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITAPPROCT.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—APPLICATIONS PROFESSIONAL—STRATEGIC DATABASE**

Career preparation and related courses *(require successful completion of a minimum of 17 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN INFORMATION TECHNOLOGY—APPLICATIONS PROFESSIONAL—STRATEGIC DATABASE			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	–	4.0
MKTG-1010	Principles of Marketing	–	3.0
MKTG-2080	Marketing Research	MKTG-1010 and ITCS -1010	3.0
ITCS-1400	Micros in Business	ITCS-1010 or ITCS-2335	4.0
ITAP-1710	Database Analysis & Design	ITCS-1400	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITAPPROSK.html>

See page 20 for Gainful Employment Information.

Information Technology—IT Professional

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Information Technology-IT Professional	63	–
Certificate	Information Technology-IT Professional	36	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Yi-Li Zhuang	586.445.7353	zhuangy@macomb.edu	South Campus

Program Description:

The IT program emphasizes the use of computers to solve business problems. The curriculum currently consists of the following six specialties: IT Applications Professional, IT Professional, IT Networking Specialist, IT Programming, IT Programming for Electronic Games, and IT Web Programming.

The Information Technology—IT Professional program is designed to prepare students for two types of Information Technology positions—inexperienced students seeking entry-level positions and experienced students seeking either IT management positions or IT project management positions where breadth of technical knowledge is required. The program will give the student a background in windows-based applications (word processing, spreadsheet applications, presentations, database management), web design, programming, and networking. The program will give the student the broad background in computers necessary for business, industry, and government job environments.

Career Opportunities:

Information Technology—IT Professional—Associate of Applied Science: To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology-IT Professional—Certificate: To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—IT PROFESSIONAL

Career preparation and related courses *(require successful completion of a minimum of 63 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—IT PROFESSIONAL**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	–	4.0
ITCS-1140	Introduction to Program Design & Development	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C or better	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 2			
ITCS-1170	Database Design & Implementation with SQL & XML	ITCS-1140 and either ITCS-1010 or ITCS-2335	4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	3.0-4.0
ITCS-1400	Micros in Business	ITCS-1010 or ITCS-2335	4.0
ITNT-1500	Principles of Networking	–	4.0
SEMESTER 3			
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
BCOM-2050	Business Communications	–	4.0
ITIA-1200	Introduction to Information Systems Security	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
SEMESTER 4			
BUSN-1010	Business Communications	–	4.0
BCOM-2070	Technical Business Communications & Project Management Principles	BCOM-2050	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY) FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
And a minimum of 6 credit hours from the following:			
ITCS-1250	C# Programming	ITCS-1140 or ITCS-1950	4.0
ITCS-2530	C++ Programming 1	ITCS-1140 or ITCS-1950	4.0
ITCS-2590	Java 1	ITCS-1140 or ITCS-1950	4.0
ITOS-1410	Windows Server Administration 1	ITNT-1500 or ITNC-1000	4.0
ITWP-1050	Basic Web Design With Cascading Style Sheets	ITWP-1000	3.0
ITWP-1100	Web Programming with JavaScript & Dynamic HTML	ITWP-1000	3.0
ITCS-2250	Advanced C# Programming	ITCS-1250 or ITCS-1950	3.0
ITCS-2550	C++ Programming 2	ITCS-2530	3.0
ITCS-2620	Java 2	ITCS-2590	3.0
ITOS-1710	Introduction to Linux	–	4.0
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.NET	ITCS-1140, ITCS-1170 and ITWP-1000	3.0
ITWP-2750	Web Programming: PHP	ITWP-1000 and ITOS-1710 and one of the following: ITCS-1230 or ITWP-1100 or ITCS-2530 or ITCS-2590	3.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—IT PROFESSIONAL**

And 1 course from the following::			3.0-4.0
ACCT-1080	Principles of Accounting 1	–	4.0
FINC-1010	Introduction to Finance	–	3.0
MGMT-1010	Principles of Management	–	3.0
MKTG-1010	Principles of Marketing	–	3.0

NOTES:

- See Skill Specific Options. In Information Technology—Programming you may earn one of two Skill Specific Certificates by selecting appropriate course from this section. In some cases, by taking one additional course, you may earn a Skill Specific in .net C#, C++, Java, or Web Programming.
- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule

**CERTIFICATE IN
INFORMATION TECHNOLOGY—IT PROFESSIONAL**

Career preparation and related courses *(require successful completion of a minimum of 36 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
INFORMATION TECHNOLOGY—IT PROFESSIONAL**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	–	4.0
ITCS-1140	Introduction to Program Design & Development	–	4.0
SEMESTER 2			
ITCS-1170	Database Design & Implementation with SQL & XML	ITCS-1140 and either ITCS-1010 or ITCS-2335	4.0
ITCS-1400	Micros in Business	ITCS-1010 or ITCS-2335	4.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
BCOM-2050	Business Communications	–	4.0
SEMESTER 3			
BCOM-2070	Technical Business Communications & Project Management Principles	BCOM-2050	3.0
ITIA-1200	Introduction to Information Systems Security	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITNT-1500	Principles of Networking	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITITPCT.html>

See page 20 for Gainful Employment Information.

Information Technology— Networking Specialist—Cisco Network Professional

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Information Technology–Networking Specialist–Cisco Network Professional	63	–
Certificate	Information Technology–Networking Specialist–Cisco Network Professional	45–47	–
Skill Specific Certificate	Information Technology–Networking Specialist–Cisco CCNA Networking	16	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	John Koss	586.445.7166	kossjo@macomb.edu	South Campus

Program Description:

The IT program emphasizes the use of computers to solve business problems. The curriculum currently consists of the following six specialties: IT Applications Professional, IT Professional, IT Networking Specialist, IT Programming, IT Programming for Electronic Games, and IT Web Programming.

The Cisco Network Professional program focuses on the Cisco Networking Academy, preparation for the CCNA (Cisco Certified Network Associate) certification exam, wired and wireless networking technologies, network security, and troubleshooting techniques necessary to enter the networking industry as a Cisco professional.

Career Opportunities:

Information Technology–Networking Specialist–Cisco–Network Professional–Associate of Applied Science: Career Opportunities: Job titles such as Computer User Support Specialist, Network & Computer System Administrator, Computer Network Support Specialist, and Network Architect are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology–Networking Specialist–Cisco–Network Professional–Certificate: Career Opportunities: Job titles such as Computer User Support Specialist, Network & Computer System Administrator, Computer Network Support Specialist, and Network Architect are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—
NETWORKING SPECIALIST—CISCO NETWORK PROFESSIONAL**

Career preparation and related courses *(require successful completion of a minimum of 63 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—CISCO NETWORK PROFESSIONAL			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2050	Business Communications	–	4.0
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	–	4.0
ITNC-1000	Cisco Networking 1	MATH-0070 proficiency (demonstrated by math placement score, completing MATH-0070 with grade C or better, being enrolled in a higher level math, or having higher level math on college transcript)	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0500 or EAPP-1500 with grade C–or better	3.0-4.0
SEMESTER 2			
ITNC-1100	Cisco Networking 2	ITNC-1000 or ITNC-1030	4.0
ITOS-1400	Managing a Microsoft Windows Server Environment	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITIA-1200	Introduction to Information Systems Security	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
Group II Course	MATH-1410	Grade C or better in MATH-1000, or an equivalent college course, or an acceptable score on a placement prerequisite exam	4.0
SEMESTER 3			
ITNC-2000	CISCO Networking 3	ITNC-1100	4.0
ITNT-1600	Introduction to Wireless Networks	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITOS-1710	Introduction to Linux	–	3.0
ITOS-2400	Managing a Microsoft Windows Server Network	ITOS-1310 or ITOS-1400	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
SEMESTER 4			
ITNT-2130 –OR– ITOS-1720	Network Design 1 –OR– Linux Server Administration	ITOS-1400 or ITOS-1710 and either ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITNC-2100	Cisco Networking 4	ITNC-2000	4.0
ITNT-1700	Wireless Network Integration	ITNT-1600	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2#### (CREATIVE WRITING OR LITERATURE ONLY) FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—CISCO NETWORK PROFESSIONAL**

Career preparation and related courses *(require successful completion of a minimum of 45 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—CISCO NETWORK PROFESSIONAL**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2050	Business Communications	–	4.0
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	–	4.0
ITNC-1000	Cisco Networking 1	MATH-0070 proficiency (demonstrated by math placement score, completing MATH-0070 with grade C or better, being enrolled in a higher level math, or having higher level math on college transcript)	4.0
SEMESTER 2			
ITNC-1100	Cisco Networking 2	ITNC-1000 or ITNC-1030	4.0
ITOS-1400	Managing a Microsoft Windows Server Environment	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
SEMESTER 3			
ITIA-1200	Introduction to Information Systems Security	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITNC-2000	Cisco Networking 3	ITNC-1100	4.0
ITNT-1600	Introduction to Wireless Networks	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITOS-1710	Introduction to Linux	–	3.0
ITOS-2400	Managing a Microsoft Windows Server Network	ITOS-1310 or ITOS-1400	3.0
SEMESTER 4			
ITNT-2130 –OR– ITOS-1720	Network Design 1 –OR– Linux Server Administration	ITOS-1400 or ITOS-1710 and either ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITNC-2100	Cisco Networking 4	ITNC-2000	4.0
ITNT-1700	Wireless Network Integration	ITNT-1600	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITNETCISCOPROCT.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—CISCO CCNA NETWORKING**

Career preparation and related courses *(require successful completion of a minimum of 16 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—CISCO CCNA NETWORKING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITNC-1000	Cisco Networking 1	MATH-0070 proficiency (demonstrated by math placement score, completing MATH-0070 with grade C or better, being enrolled in a higher level math, or having higher level math on college transcript)	4.0
ITNC-1100	Cisco Networking 2	ITNC-1000 or ITNC-1030	4.0
ITNC-2000	Cisco Networking 3	ITNC-1100	4.0
ITNC-2100	Cisco Networking 4	ITNC-2000	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITNETCISCOCCNASK.html>

See page 20 for Gainful Employment Information.

Information Technology—Networking Specialist— Microsoft Enterprise Administrator

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Information Technology—Networking Specialist—Microsoft Enterprise Administrator	66	–
Certificate	Information Technology—Networking Specialist—Microsoft Enterprise Administrator	48	–
Skill Specific Certificate	Information Technology—Networking Specialist—Microsoft Enterprise Administrator	18	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Patrick Hornung	586.445.7178	hornungp@macomb.edu	South Campus

Program Description:

The Microsoft Enterprise Administrator program provides fundamental skills in operating and managing a Microsoft network. Skills include Microsoft Active Directory, network infrastructure technologies, Windows client and server operating systems, Windows policy administration, Windows client deployment, security best practices, client and server virtualization, high availability systems, and disaster recovery. The program also includes supplementary topics such as wireless networking, Linux, and network design. The program focuses on preparing students for relevant and current industry certification.

Career Opportunities:

Information Technology—Networking Specialist—Microsoft Enterprise Administrator—Associate of Applied Science: Career Opportunities: Job titles such as Computer User Support Specialist, Network & Computer System Administrator, Computer Network Support Specialist, and Network Architect are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology—Networking Specialist—Microsoft Enterprise Administrator—Certificate: Career Opportunities: Job titles such as Computer User Support Specialist, Network & Computer System Administrator, Computer Network Support Specialist, and Network Architect are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology—Networking Specialist—Microsoft Enterprise Administrator—Skill Specific Certificate: Career Opportunities: Job titles such as Computer User Support Specialist, Network & Computer System Administrator, Computer Network Support Specialist, and Network Architect are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—MICROSOFT ENTERPRISE ADMINISTRATOR**

Career preparation and related courses *(require successful completion of a minimum of 66 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—MICROSOFT ENTERPRISE ADMINISTRATOR			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2050	Business Communications	–	4.0
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	–	4.0
ITNT-1500 –OR– ITNC-1000	Principles of Networking –OR– Cisco Networking 1	MATH-0070 proficiency (demonstrated by math placement score, completing MATH-0070 with grade C or better, being enrolled in a higher level math, or having higher level math on college transcript)	4.0
SEMESTER 2			
ITOS-1310	Managing a MS Windows Client Environment	ITNT-1500 or ITNC-1000	3.0
ITIA-1200	Introduction to Information Systems Security	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITNT-1600	Introduction to Wireless Networks	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITNT-1700	Wireless Network Integration	ITNT-1600	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 3			
ITOS-1500	Implementing Microsoft Windows Server Active Directory	ITOS-1310 or ITOS-1400	3.0
ITOS-2400	Managing a Microsoft Windows Server Network	ITOS-1310 or ITOS-1400	3.0
ITOS-1600	Managing a Microsoft Windows Application Infrastructure	ITOS-1310	3.0
ITOS-1710	Introduction to Linux	–	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
SEMESTER 4			
ITNT-2130	Network Design 1	ITOS-1400 or ITOS-1410	3.0
ITOS-1720	Linux Server Administration	ITOS-1710 and either ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITOS-2600	Windows Server Administration	ITOS-1500 and ITOS-2400	3.0
ITOS-2700	Windows Server Enterprise Administration	ITOS-1510 and ITOS-1600 and ITOS-2400	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY) FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule

**CERTIFICATE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—MICROSOFT ENTERPRISE ADMINISTRATOR**

Career preparation and related courses *(require successful completion of a minimum of 48 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—MICROSOFT ENTERPRISE ADMINISTRATOR**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	IT program major or admitted into Walsh College Fast Track program	4.0
ITNT-1500 –OR– ITNC-1000	Principles of Networking –OR– Cisco Networking 1	MATH-0070 proficiency (demonstrated by math placement score, completing MATH-0070 with grade C or better, being enrolled in a higher level math, or having higher level math on college transcript)	4.0
BCOM-2050	Business Communications	–	4.0
SEMESTER 2			
ITOS-1310	Managing a MS Windows Client Environment	ITNT-1500 or ITNC-1000	3.0
ITIA-1200	Introduction to Information Systems Security	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITOS-1410	Windows Server Administration 1	ITNT-1500 or ITNC-1000	4.0
ITOS-1710	Introduction to Linux	–	3.0
SEMESTER 3			
ITOS-1510	Windows Server Administration 2	ITOS-1410 or ITOS-1400	4.0
ITOS-1720	Linux Server Administration	ITOS-1710 and either ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITNT-1600	Introduction to Wireless Networks	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITNT-1700	Wireless Network Integration	ITNT-1600	3.0
SEMESTER 4			
ITNT-2130	Network Design 1	ITOS-1400	3.0
ITOS-2410	Windows Server Administration 3	ITOS-1510	4.0
ITOS-2510	Virtualization Technologies	ITOS-1510 and ITOS-1710	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITMICSTADMCT.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—WINDOWS SERVER**

Career preparation and related courses *(require successful completion of a minimum of 18 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—WINDOWS SERVER**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITOS-1310	Managing a MS Windows Client Environment	ITNT-1500 or ITNC-1000	3.0
ITOS-1410	Windows Server Administration 1	ITNT-1500 or ITNC-1000	4.0
ITOS-1510	Windows Server Administration 2	ITOS-1410 or ITOS-1400	4.0
ITOS-2410	Windows Server Administration 3	ITOS-1510	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITMICSTADMSK.html>

See page 20 for Gainful Employment Information.

Information Technology—Networking Specialist— Network Security Professional

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate Applied Science	Information Technology— Networking Specialist— Network Security Professional	70	–
Certificate	Information Technology— Networking Specialist— Network Security Professional	51	–
Skill Specific Certificate	Information Technology— Networking Specialist— Information Assurance	18	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Keith Nabozny	586.445.7304	naboznyk@macomb.edu	South Campus

Program Description:

The IT program emphasizes the use of computers to solve business problems. The curriculum currently consists of the following six specialties: IT Applications Professional, IT Professional, IT Networking Specialist, IT Programming, IT Programming for Electronic Games, and IT Web Programming.

The Network Security Professional program focuses on information assurance issues, techniques, and policy as they relate to computer and information systems. The security option was developed to transfer to Walsh College, not specifically for a certification.

Accreditation:

CNSS Certified to conform to NSTISSI 4011.

Career Opportunities:

Information Technology—Networking Specialist—Network Security Professional—Associate of Applied Science Career Opportunities: Job titles such as Information Security Analysts, Computer User Support Specialist, Network & Computer System Administrator, Computer Network Support Specialist, and Network Architect are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology—Networking Specialist—Network Security Professional—Certificate: Career Opportunities: Job titles such as Information Security Analysts, Computer User Support Specialist, Network & Computer System Administrator, Computer Network Support Specialist, and Network Architect are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—NETWORK SECURITY PROFESSIONAL**

Career preparation and related courses *(require successful completion of a minimum of 69 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—NETWORK SECURITY PROFESSIONAL**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2050	Business Communications	–	4.0
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	IT program major or admitted into Walsh College Fast Track program	4.0
ITNT-1500	Principles of Networking	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C or better	3.0-4.0
SEMESTER 2			
ITIA-1200	Introduction to Information Systems Security	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITOS 1400	Managing a Microsoft Windows Server Environment	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
ITOS 1710	Introduction to Linux	–	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 3			
ITIA-1300	Information Security Safeguards	ITIA-1200	4.0
ITIA-1400	Building an Information Protection Program	ITIA-1200 ITOS-1720	3.0
ITNT 1600	Introduction to Wireless Networks	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITNT 1700	Wireless Network Integration	ITNT-1600	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
SEMESTER 4			
ITIA-2300	Information Systems Threat Assessment	ITIA-1200 with grade C or better	3.0
ITIA-2600	Principles of Cryptography	ITIA-1200 with grade C or better	3.0
ITOS 1720	Linux Server Administration	ITOS-1710 and either ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
SEMESTER 5			
ITIA 2700	Computer Forensics	ITOS-1310 or ITOS-1400; and ITOS-1710; and ITIA-1200 with grade C or better	3.0
ITNT 2130	Network Design 1	ITOS-1400	3.0
ITWP 1600	Web Security	ITWP-1000	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—NETWORK SECURITY PROFESSIONAL			
Career preparation and related courses <i>(require successful completion of a minimum of 51 credit hours)</i>			
REQUIREMENTS FOR CERTIFICATE IN INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—NETWORK SECURITY PROFESSIONAL			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2050	Business Communications	–	4.0
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	IT program major or admitted into Walsh College Fast Track program	4.0
ITIA-1200	Introduction to Information Systems Security	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITIA-1200	Information Security Safeguards	ITIA-1200	3.0
ITNT-1500	Principles of Networking	–	4.0
SEMESTER 2			
ITIA-1400	Building an Information Protection Program	ITIA-1200 with grade C or better	3.0
ITIA-2300	Information Systems Threat Assessment	ITIA-1200 with grade C or better	3.0
ITOS-1400	Managing a Microsoft Windows Server Environment	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
SEMESTER 3			
ITIA-2600	Principles of Cryptography	ITIA-1200 with grade C or better	3.0
ITNT-1600	Introduction to Wireless Networks	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITNT-1700	Wireless Network Integration	ITNT-1600	3.0
ITNT-2130	Network Design 1	ITWP-1000	3.0
ITWP-1600	Web Security	ITWP-1000	3.0
SEMESTER 4			
ITIA-2700	Computer Forensics	ITOS-1310 or ITOS-1400; and ITOS-1710; and ITIA-1200 with grade C or better	3.0
ITOS-1710	Introduction to Linux	–	3.0
ITOS-1720	Linux Server Administration	ITOS-1710 and either ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
			51.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITNETSECPROCT.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—INFORMATION ASSURANCE**

Career preparation and related courses *(require successful completion of a minimum of 18 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—NETWORKING SPECIALIST—INFORMATION ASSURANCE**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITIA-1200	Introduction to Information Systems Security	ITNT-1500 or ITNC-1000 or ITNC-1030	3.0
ITIA-1300	Information Security Safeguards	ITIA-1200	3.0
ITIA-1400	Building an Information Protection Program	ITIA-1200 with grade C or better	3.0
ITIA-2300	Information Systems Threat Assessment	ITIA-1200 with grade C or better	3.0
ITIA-2600	Principles of Cryptography	ITIA-1200 with grade C or better	3.0
ITIA-2700	Computer Forensics	ITOS-1310 or ITOS-1400; and ITOS-1710; and ITIA-1200 with grade C or better	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITNETIASK.html>

See page 20 for Gainful Employment Information.

Information Technology—Programming

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Information Technology–Programming	67-68	–
Certificate	Information Technology–Programming	49-50	–
Skill Specific Certificate	Information Technology–Programming–C++ Programming	15	–
Skill Specific Certificate	Information Technology–Programming–Database Programming	16	–
Skill Specific Certificate	Information Technology–Programming–Java Programming	14	–
Skill Specific Certificate	Information Technology–Programming–.Net C# Programming	14	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Elizabeth Jenaway	586.445.7412	jenawaye@macomb.edu	Center Campus
Professor	Martin Kohl	586.286.2078	kohlm@macomb.edu	Center Campus

Program Description:

The IT program emphasizes the use of computers to solve business problems. The curriculum currently consists of the following six specialties: IT Applications Professional, IT Professional, IT Networking Specialist, IT Programming, IT Programming for Electronic Games, and IT Web Programming.

The Information Technology–Programming program is aimed at preparing students for entry-level positions as programmers. Students who complete this sequence will be qualified to enter careers in which they function as a systems analyst (trainee) or a business applications programmer.

Career Opportunities:

Information Technology–Programming–Associate of Applied Science Career Opportunities: Job titles such as Computer Programmers, Computer User Support Specialist, Database Administrator, Software Developers/System Software, and System Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology–Programming–Certificate: Career Opportunities: Job titles such as Computer Programmers, Computer User Support Specialist, Database Administrator, Software Developers/System Software, and System Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology–Programming–C++ Programming–Skill Specific Certificate: Career Opportunities: Job titles such as Computer Programmers, Computer User Support Specialist, Database Administrator, Software Developers/System Software, and System Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology–Programming–Database Programming–Skill Specific Certificate: Career Opportunities: Job titles such as Computer Programmers, Computer User Support Specialist, Database Administrator, Software Developers/System Software, and System Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology–Programming–Java Programming–Skill Specific Certificate: Career Opportunities: Job titles such as Computer Programmers, Computer User Support Specialist, Database Administrator, Software Developers/System Software, and System Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology—Programming—.Net C# Programming—Skill Specific Certificate: Career Opportunities: Job titles such as Computer Programmers, Computer User Support Specialist, Database Administrator, Software Developers/System Software, and System Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—PROGRAMMING

Career preparation and related courses *(require successful completion of a minimum of 67 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—PROGRAMMING

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2050	Business Communications	–	4.0
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	–	4.0
ITCS-1140	Introduction to Program Design & Development	–	4.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
SEMESTER 2			
ITCS-1170	Database Design & Implementation with SQL & XML	ITCS-1140 and either ITCS-1010 or ITCS-2335	4.0
ITNT-1500	Principles of Networking	–	4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL 0050, or EAPP 1500 with grade C or better	3.0-4.0
SEMESTER 3			
BUSN 1010	Introduction to Business	–	3.0
ITWP-2400	Web Programming with XML	ITWP-1000 and ITCS-1130 or ITCS-1140 and ITCS-1160 or ITCS-1170	3.0
BCOM-2070	Technical Business Communications & Project Management Principles	BCOM-2050	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
SEMESTER 4			
ITCS-2830	Applications Implementation & Testing	BCOM-2070 and either ITCS-1230 or ITCS-2590	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING or LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

**SELECT ONE CONCENTRATION FROM LIST BELOW FOR
ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—PROGRAMMING
(MINIMUM 13 SEMESTER HOURS)**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
JAVA & MOBILE PROGRAMMING			
ITCS-2500	Introduction to Mobile Development	ITCS-1140 or ITCS-1950	3.0
ITCS-2590	Java 1	ITCS-1140 or ITCS-1950	4.0
ITCS-2620	Java 2	ITCS-2590	3.0
AND	ITCS, ITNT, or ITWP Elective	–	3.0
C++ PROGRAMMING			
ITCS-2530	C++ Programming 1	ITCS-1140 or ITCS-1950	4.0
ITCS-2550	C++ Programming 2	ITCS-2530	3.0
ITCS-2000	Game Programming in Direct X with C++	ITCS-2530 and ITCS-1950	4.0
AND	ITCS, ITNT, or ITWP Elective	–	3.0
.NET PROGRAMMING			
ITCS-1250	C# Programming	ITCS-1140 or ITCS-1950	4.0
ITCS-2250	Advanced C# Programming	ITCS-1250 or ITCS-1950	3.0
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.NET	ITCS-1140, ITCS-1170, and ITWP-1000	3.0
AND	ITCS, ITNT, or ITWP Elective	–	3.0
DATABASE PROGRAMMING			
ITCS-2140	Database Programming using Microsoft SQL Server	ITCS-1170 and either ITCS-1140 or ITCS-1130	3.0
ITCS-2430	Database Maintenance using Microsoft SQL Server	ITCS-1170	3.0
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.Net	ITCS-1140, ITCS-1170, and ITWP-1000	3.0
ITCS-1250	C# Programming	ITCS-1140 or ITCS-1950	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITPROGCT.html>

See page 20 for Gainful Employment Information.

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING**

Career preparation and related courses *(require successful completion of a minimum of 49 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Introduction to Business	–	3.0
BCOM-2050	Business Communications	–	4.0
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	–	4.0
ITCS-1140	Introduction to Program Design & Development	–	4.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
SEMESTER 2			
ITCS-1170	Database Design & Implementation with SQL & XML	ITCS-1140 and either ITCS-1010 or ITCS-2335	4.0
ITNT-1500	Principles of Networking	–	4.0
SEMESTER 3			
ITWP-2400	Web Programming with XML	ITWP-1000 and ITCS-1130 or ITCS-1140, and ITCS-1160 or ITCS-1170	3.0
BCOM-2070	Technical Business Communications & Project Management Principles	BCOM-2050	3.0
SEMESTER 4			
ITCS-2830	Applications Implementation & Testing	BCOM-2070 and either ITCS-1230 or ITCS-2590	4.0

SELECT ONE CONCENTRATION FROM LIST BELOW FOR CERTIFICATE IN INFORMATION TECHNOLOGY—PROGRAMMING			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
JAVA & MOBILE PROGRAMMING			
ITCS-2500	Introduction to Mobile Development	ITCS-1140 or ITCS-1950	3.0
ITCS-2590	Java 1	ITCS-1140 or ITCS-1950	4.0
ITCS-2620	Java 2	ITCS-2590	3.0
AND	ITCS, ITNT, or ITWP Elective		3.0
C++ PROGRAMMING			
ITCS-2530	C++ Programming 1	ITCS-1140 or ITCS-1950	4.0
ITCS-2550	C++ Programming 2	ITCS-2530	3.0
ITCS-2000	Game Programming in Direct X with C++	ITCS-2530 and ITCS-1950	4.0
AND	ITCS, ITNT, or ITWP Elective	–	3.0
.NET PROGRAMMING			
ITCS-1250	C# Programming	ITCS-1140 or ITCS-1950	4.0
ITCS-2250	Advanced C# Programming	ITCS-1250 or ITCS-1950	3.0
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.NET	ITCS-1140, ITCS-1170, and ITWP-1000	3.0
AND	ITCS, ITNT, or ITWP Elective	–	3.0
DATABASE PROGRAMMING			
ITCS-2140	Database Programming using Microsoft SQL Server	ITCS-1170 and either ITCS-1140 or ITCS-1130	3.0
ITCS-2430	Database Maintenance using Microsoft SQL Server	ITCS-1170	3.0
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.Net	ITCS-1140, ITCS-1170, and ITWP-1000	3.0
ITCS-1250	C# Programming	ITCS-1140 or ITCS-1950	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITPROGCT.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING—C++ PROGRAMMING**

Career preparation and related courses *(require successful completion of a minimum of 15 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING—C++ PROGRAMMING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITCS-1170	Database Design & Implementation with SQL & XML	ITCS-1140 and either ITCS-1010 or ITCS-2335	4.0
ITCS-2530	C++ Programming 1	ITCS-1140 or ITCS-1950	4.0
ITCS-2550	C++ Programming 2	ITCS-2530	3.0
ITCS-2000	Game Programming in Direct X with C++	ITCS-2530 and ITCS-1950	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITC++SK.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING—DATABASE PROGRAMMING**

Career preparation and related courses *(require successful completion of a minimum of 16 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING—DATABASE PROGRAMMING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITCS-1170	Database Design & Implementation with SQL & XML	ITCS-1140 and either ITCS-1010 or ITCS-2335	4.0
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.NET	ITCS-1140, ITCS-1170, and ITWP-1000	3.0
ITCS-2140	Database Programming using Microsoft SQL Server	ITCS-1170 and either ITCS-1140 or ITCS-1130	3.0
ITCS-2430	Database Maintenance using Microsoft SQL Server	ITCS-1170	3.0
ITWP-2400	Web Programming with XML	ITWP-1000 and ITCS-1130 or ITCS-1140, and ITCS-1160 or ITCS-1170	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITDBSK.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING—JAVA PROGRAMMING**

Career preparation and related courses *(require successful completion of a minimum of 14 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING—JAVA PROGRAMMING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITCS-1170	Database Design & Implementation with SQL & XML	ITCS-1140 and either ITCS-1010 or ITCS-2335	4.0
ITCS-2590	Java 1	ITCS-1140 or ITCS-1950	4.0
ITCS-2620	Java 2	ITCS-2590	3.0
ITCS-2500	Introduction to Mobile Development	ITCS-1140 or ITCS-1950	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITJAVASK.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING—.NET C# PROGRAMMING**

Career preparation and related courses *(require successful completion of a minimum of 14 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING—.NET C# PROGRAMMING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITCS-1170	Database Design & Implementation with SQL & XML	ITCS-1140 and either ITCS-1010 or ITCS-2335	4.0
ITCS-1250	C# Programming	ITCS-1140 or ITCS-1950	4.0
ITCS-2250	Advanced C# Programming	ITCS-1250 or ITCS-1950	3.0
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.NET	ITCS-1140, ITCS-1170, and ITWP-1000	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITVBSK.html>

See page 20 for Gainful Employment Information.

Information Technology—Programming for Electronic Games

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate Applied Science	Information Technology-Programming for Electronic Games	65	–
Certificate	Information Technology-Programming for Electronic Games	51	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	George Schleis	586.286.2214	schleisg@macomb.edu	Center Campus

Program Description:

The IT program emphasizes the use of computers to solve business problems. The curriculum currently consists of the following six specialties: IT Applications Professional, IT Professional, IT Networking Specialist, IT Programming, IT Programming for Electronic Games, and IT Web Programming.

The Information Technology—Programming for Electronic Games program will allow students who are interested in programming techniques used in the electronic gaming industry to gain critical base line skills in techniques involved in the programming of electronic games and simulation applications. Students will learn about trends and career opportunities in the electronic games industry. Students will learn skills necessary to become viable developers in a myriad of programming fields. These skills may be applied in the advertising industry which has realized the value of electronic games to assist in the marketing of products and services. There has been an explosion of internet based games in a race to capture customer loyalty and persistence, games that have been developed using object oriented programming, Flash and games development tools utilizing Uniform Modeling Language (UML).

Career Opportunities:

Information Technology—Programming for Electronic Games—Associate of Applied Science Career Opportunities: Job titles such as Computer Programmers, Game Developer, Software Developers/System Software, Graphic Designer, Multimedia Artist & Animator, and Web Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology—Programming for Electronic Games—Certificate: Career Opportunities: Job titles such as Computer Programmers, Game Developer, Software Developers/System Software, Graphic Designer, Multimedia Artist & Animator, and Web Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
INFORMATION TECHNOLOGY—PROGRAMMING FOR ELECTRONIC GAMES**

Career preparation and related courses *(require successful completion of a minimum of 65 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
INFORMATION TECHNOLOGY—PROGRAMMING FOR ELECTRONIC GAMES**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2050	Business Communications	–	4.0
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	–	4.0
ITCS-1950	Introduction to Game Development	–	4.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
ITCS-2530	C++ Programming 1	ITCS-1140 or ITCS-1950	4.0
MACA-1055	Digital Layout: Adobe	–	4.0
MACA-1160	Previsualization	–	4.0
Group II Course: MATH-1410	College Algebra	Grade of C or better in MATH-1000, or an equivalent college course, or an acceptable score on a placement prerequisite exam	4.0
SEMESTER 3			
ITCS-2000	Game Programming in Direct X with C++	ITCS-2530 and ITCS-1950	4.0
MACA-1320	Introduction to Photoshop	–	4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 4			
MACA-2720	Flash Multimedia 1	MACA-1320	4.0
ITCS-2050	Advanced Game Development	ITCS-1950 and MACA-1040	4.0
MACA-2510	Introduction to 3D	MACA-1320	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING FOR ELECTRONIC GAMES**

Career preparation and related courses *(require successful completion of a minimum of 51 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
INFORMATION TECHNOLOGY—PROGRAMMING FOR ELECTRONIC GAMES**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2050	Business Communications	–	4.0
ITCS-1010– –OR– ITCS-2335	Computer & Information Processing Principles –OR– Foundations of Business Information Technology	IT program major or admitted into Walsh College Fast Track program	4.0
ITCS-1950	Introduction to Game Development	–	4.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
SEMESTER 2			
ITCS-2530	C++ Programming 1	ITCS-1140 or ITCS-1950	4.0
MACA-1055	Digital Layout: Adobe	–	4.0
MACA-1160	Previsualization	–	4.0
SEMESTER 3			
ITCS-2000	Game Programming in Direct X with C++	ITCS-2530 and ITCS-1950	4.0
MACA-1320	Introduction to Photoshop	–	4.0
MATH-1410	College Algebra	Grade C or better in MATH-1000, or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
SEMESTER 4			
MACA-2720	Flash Multimedia 1	MACA-1320	4.0
ITCS-2050	Advanced Game Development	ITCS-1950 and MACA-1040	4.0
MACA-2510	Introduction to 3D	MACA-1320	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITPROGEGAMESCT.html>

See page 20 for Gainful Employment Information.

Information Technology—Website Programming

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Information Technology—Website Programming	68	–
Certificate	Information Technology—Website Programming	50-51	–
Skill Specific Certificate	Information Technology—Website Programming—Web Programming—Level 1	14	–
Skill Specific Certificate	Information Technology—Website Programming—Web Programming—Level 2	9	–
Skill Specific Certificate	Information Technology—Website Programming—Web Programming—Level 3	9	–
Skill Specific Certificate	E-Marketing	17	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Jacqueline Wanner	586.286.2053	wannerj@macomb.edu	Center Campus

Program Description:

The IT program emphasizes the use of computers to solve business problems. The curriculum currently consists of the following six specialties: IT Applications Professional, IT Professional, IT Networking Specialist, IT Programming, IT Programming for Electronic Games, and IT Website Programming.

The Website Programming program offers degree and certificate options aimed at preparing students for positions that require knowledge of site design, site architecture, SEO (search engine optimization), development, deployment, maintenance, and support for the World Wide Web, Corporate Internet and/or Intranet. Graduates will have the fundamental skills necessary to serve the industry in positions ranging from Webmaster, Web Developer, and Web Designer. Students who complete the sequence of classes will have sufficient training to sit for one or more CIW (Certified Internet Web Professional) Certifications. Additional studying may be necessary depending on the type of certification sought.

Career Opportunities:

Information Technology—Website Programming—Associate of Applied Science Career Opportunities: Job titles such as Web Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology—Website Programming—Certificate: Career Opportunities: Job titles such as Web Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology—Website Programming—Web Programming Level 1—Skill Specific Certificate: Career Opportunities: Job titles such as Web Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology—Website Programming—Web Programming Level 2—Skill Specific Certificate: Career Opportunities: Job titles such as Web Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Information Technology—Website Programming—Web Programming Level 3—Skill Specific Certificate: Career Opportunities: Job titles such as Web Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING

Career preparation and related courses *(require successful completion of a minimum of 68 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ITCS-1010 –OR– ITCS-2335	Computer & Information Processing Principles or Foundations of Business Information Technology	–	4.0
ITCS-1140	Introduction to Program Design & Development	–	4.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL 0050 or EAPP 1500 with grade C or better	3.0-4.0
SEMESTER 2			
BCOM-2050	Business Communications	–	4.0
ITWP-1400	SEO (Search Engine Optimization) for the Web	ITWP-1000	4.0
ITCS-1170	Database Design & Implementation with SQL & XML	ITCS-1140 and either ITCS-1010 or ITCS-2335	4.0
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 3			
ITOS-1710	Introduction to Linux	–	3.0
ITWP-2750	Web Programming: PHP	ITWP-1000 and ITOS-1710 and one of the following: ITCS-1230 or ITWP-1100 or ITCS-2530 or ITCS-2590	3.0
ITWP-1100	Web Programming with JavaScript & Dynamic HTML	ITWP-1000	3.0
ITWP-1050	Basic Web Design With Cascading Style Sheets	ITWP-1000	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 4			
ITWP-2400	Web Programming with XML	ITWP-1000 and ITCS-1130 or ITCS-1140 and ITCS-1160 or ITCS-1170	3.0
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.NET	ITCS-1140, ITCS-1170 and ITWP-1000	3.0
ITWP-2600	Web Commerce (E-Commerce)	ITWP-1000 and ITWP-1050	3.0
ITWP-2810	Web Principles for Industry	ITWP-1100, ITWP-1400, ITWP-2600 and ITWP-2300 or ITWP-2750	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING or LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
And 3-4 credit hours from the following:			
ITCS-2530	C++ Programming 1	ITCS-1140 or ITCS-1950	4.0
ITCS-2590	Java 1	ITCS-1140 or ITCS-1950	4.0
ITNT-1500	Principles of Networking	–	4.0
ITCS-2500	Introduction to Mobile Programming	ITCS-1140 or ITCS-1950	3.0
ITCS-1250	Introduction to Programming C#	ITCS-1140 or ITCS-1950	4.0

CERTIFICATE IN INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING

Career preparation and related courses *(require successful completion of a minimum of 50 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ITCS-1010– –OR– ITCS-2335	Computer & Information Processing Principles or Foundations of Business Information Technology	IT program major or admitted into Walsh College Fast Track program	4.0
ITCS-1140	Introduction to Program Design & Development	–	4.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
SEMESTER 2			
BCOM-2050	Business Communications	–	4.0
ITWP-1400	SEO (Search Engine Optimization) for the Web	ITWP-1000	4.0
ITCS-1170	Database Design & Implementation with SQL & XML	ITCS-1140 and either ITCS-1010 or ITCS-2335	4.0
SEMESTER 3			
ITOS-1710	Introduction to Linux	–	3.0
ITWP-2750	Web Programming: PHP	ITWP-1000 and ITOS-1710 and one of the following: ITCS-1230 or ITWP-1100 or ITCS-2530 or ITCS-2590	3.0
ITWP-1100	Web Programming with JavaScript & Dynamic HTML	ITWP-1000	3.0
ITWP-1050	Basic Web Design With Cascading Style Sheets	ITWP-1000	3.0
ITWP-2400	Web Programming with XML	ITWP-1000 and ITCS-1130 or ITCS-1140 and ITCS-1160 or ITCS-1170	3.0
SEMESTER 4			
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.NET	ITCS-1140, ITCS-1170 and ITWP-1000	3.0
ITWP-2600	Web Commerce (E-Commerce)	ITWP-1000 and ITWP-1050	3.0
ITWP-2810	Web Principles for Industry	ITWP-1100, ITWP-1400, ITWP-2600 and ITWP-2300 or ITWP-2750	3.0
And 3-4 credit hours from the following:			
ITCS-2530	C++ Programming 1	ITCS-1140 or ITCS-1950	4.0
ITCS-2590	Java 1	ITCS-1140 or ITCS-1950	4.0
ITNT-1500	Principles of Networking	–	4.0
ITCS-2500	Introduction to Mobile Programming	ITCS-1140 or ITCS-1950	3.0
ITCS-1250	Introduction to Programming C#	ITCS-1140 or ITCS-1950	4.0

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING—WEB PROGRAMMING—LEVEL 1**

Career preparation and related courses *(require successful completion of a minimum of 14 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING—WEB PROGRAMMING—LEVEL 1**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
ITWP-1050	Basic Web Design With Cascading Style Sheets	ITWP-1000	3.0
ITWP-1400	SEO (Search Engine Optimization) for the Web	ITWP-1000	4.0
MACA-1320	Introduction to Photoshop	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITWEBMST11SK.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING—WEB PROGRAMMING—LEVEL 2**

Career preparation and related courses *(require successful completion of a minimum of 9 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING—WEB PROGRAMMING—LEVEL 2**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITWP-1100	Web Programming with JavaScript & Dynamic HTML	ITWP-1000	3.0
ITWP-2750	Web Programming: PHP	ITWP-1000 and ITOS-1710 and one of the following: ITCS-1230 or ITWP-1100 or ITCS-2530 or ITCS-2590	3.0
ITWP-2400	Web Programming with XML	ITWP-1000 and ITCS-1130 or ITCS-1140 and ITCS-1160 or ITCS-1170	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITWEBMST21SK.html>

See page 20 for Gainful Employment Information.

**SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING—WEB PROGRAMMING—LEVEL 3**

Career preparation and related courses *(require successful completion of a minimum of 9 credit hours)*

**REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN
INFORMATION TECHNOLOGY—WEBSITE PROGRAMMING—WEB PROGRAMMING—LEVEL 3**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.NET	ITCS-1140, ITCS-1170 and ITWP-1000	3.0
ITWP-2600	Web Commerce (E-Commerce)	ITWP-1000 and ITWP-1050	3.0
ITWP-2810	Web Principles for Industry	ITWP-1100, ITWP-1400, ITWP-2600 and ITWP-2300 or ITWP-2750	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/ITWEBMST31SK.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN MARKETING—E-MARKETING

Career preparation and related courses *(require successful completion of a minimum of 17 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN MARKETING—E-MARKETING

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
MKTG-1010	Principles of Marketing	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
MKTG-1050	E-Marketing	–	3.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
ITWP-1400	SEO (Search Engine Optimization) for the Web	ITWP 100	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MKTGEMKTGSK.html>

See page 20 for Gainful Employment Information.

International & Global Studies: Europe

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Arts	International & Global Studies: Europe	62	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The borders of Macomb County, the State of Michigan, and even the United States are no longer barriers to, but opportunities for, residents to cross. The world is smaller than ever before...not by physical size, but by the ability to connect, talk, share information, or do business with people from all over the world in the blink of an eye. Having a degree or certificate in International and Global Studies will position students to succeed and advance in a rapidly changing world.

Career Opportunities:

International & Global Studies: Europe—Associate of Arts Career Opportunities: Job titles such as Interpreter/Translator, Public Relations Specialist, Reporters & Correspondents, International Sales Manager, Immigrations & Customs Inspectors, Community & Social Service Specialists, and Broadcast News Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF ARTS IN
INTERNATIONAL & GLOBAL STUDIES: EUROPE**

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF ARTS IN INTERNATIONAL & GLOBAL STUDIES: EUROPE**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group IV Course: ARTT-2610 –OR– ARTT-2620	Art of the Western World 1 –OR– Art of the Western World 2	–	3.0
Group IV Course: HUMN-1750	Introduction to Mythology	–	3.0
Group IV Course: MUSC-1030	Music Appreciation	–	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
Group IIB or IIC Course: MATH-1### –OR– Any Science Course	Any MATH course, 1000 or above –OR– ENVS-1050 is recommended	–	3.0-6.0
HIST-1600	Western Civilization Since 1648	–	4.0
SOSC-2010	Introduction to International Studies	–	4.0
Group IV Course: FREN-1260 –OR– GRMN-1260 –OR– ITAL-1260 –OR– SPAN-1260	Elementary French 1 –OR– Elementary German 1 –OR– Elementary Italian 1 –OR– Elementary Spanish 1	–	4.0
SEMESTER 3			
Group IB Course: ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210 or ENGL-1180 or ENGL-1210	3.0-4.0
Group II Course	1000—level or higher science course with lab	–	4.0-6.0
Group III Course: GEOG-2000 –OR– ANTH-1000	World Regional Geography –OR– Introduction to Anthropology	–	4.0

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF ARTS IN INTERNATIONAL & GLOBAL STUDIES: EUROPE			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
Group IV Course: FREN-1270 –OR– GRMN-1270 –OR– ITAL-1270 –OR– SPAN-1270	Elementary French 2 –OR– Elementary German 2 –OR– Elementary Italian 2 –OR– Elementary Spanish 2	FREN-1260 –OR– GRMN-1260 –OR– ITAL-1260 –OR– SPAN-1260	4.0
SEMESTER 4			
Group IIIC Course: POLS-1000	Introduction to American Politics	–	4.0
Group IIIB Course: PSYC-2600	Social Psychology 1	PSYC-1010	3.0
Group IV Course: FREN-2360 –OR– GRMN-2360 –OR– ITAL-2360 –OR– SPAN-2360	Intermediate French 1 –OR– Intermediate German 1 –OR– Intermediate Italian 1 –OR– Intermediate Spanish 1	FREN-1270 –OR– GRMN-1270 –OR– ITAL-1270 –OR– SPAN-1270	4.0
INTL-2000 –OR– INTL-2010 –OR– INTL-2300 –OR– INTL-2500 –OR– INTL-2700	Introduction to Latin America –OR– Introduction to Russia & Eastern Europe –OR– Introduction to Japan –OR– Introduction to Chinese Civilization –OR– Introduction to Africa	–	4.0
SEMESTER 5			
Group IV Course: FREN-2370 –OR– GRMN-2370 –OR– ITAL-2370 –OR– SPAN-2370	Intermediate French 2 –OR– Intermediate German 2 –OR– Intermediate Italian 2 –OR– Intermediate Spanish 2	FREN-2360 –OR– GRMN-2360 –OR– ITAL-2360 –OR– SPAN-2360	4.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- Select elective courses based on your transfer college/university.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

International & Global Studies: Global Business Fundamentals

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Certificate	Global Business Fundamentals	25	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

With globalization now a fundamental part of business and industry, this certificate will give students knowledge and information about performing business activities on an international stage.

Career Opportunities:

International & Global Studies: Global Business Fundamentals—Certificate Career Opportunities: Job titles such as Interpreter/Translator, Public Relations Specialist, Reporters & Correspondents, International Sales Manager, Immigrations & Customs Inspectors, Community & Social Service Specialists, and Broadcast News Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

CERTIFICATE IN INTERNATIONAL & GLOBAL STUDIES: GLOBAL BUSINESS FUNDAMENTALS

Career preparation and related courses *(require successful completion of a minimum of 25 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN GLOBAL BUSINESS FUNDAMENTALS			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2050	Business Communications	–	4.0
BUSN-2100	International Business	–	3.0
SEMESTER 2			
ACCT-1080	Principles of Accounting 1	–	4.0
BLAW-1080	Business Law 1	–	4.0
MKTG-2200	Global Marketing	–	4.0
SEMESTER 3			
BUSN-2000	Global Entrepreneurship	–	3.0
BUSN-2030	Global Purchasing & Supply Chain Management	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/IGSTGBUSCT.html>

See page 20 for Gainful Employment Information.

International & Global Studies: Global Communication & Understanding

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Certificate	International & Global Studies: Global Communication & Understanding	18	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

With globalization now a fundamental part of everyday life, this certificate will give students information about the culture of a specific region, along with practice in a core language. These courses will especially help to prepare students interested in pursuing a career in international studies or business.

Requirements & Specific Information:

Students interested in emphasizing international business while earning an Associate of General Studies degree may combine this certificate with the Certificate in Modern Language and Culture and the Certificate in Global Business Fundamentals to fulfill the degree requirements.

Career Opportunities:

International & Global Studies: Global Communications & Understanding—Certificate Career Opportunities: Job titles such as Interpreter/Translator, Public Relations Specialist, Reporters & Correspondents, International Sales Manager, Immigrations & Customs Inspectors, Community & Social Service Specialists, and Broadcast News Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**CERTIFICATE IN
INTERNATIONAL & GLOBAL STUDIES:
GLOBAL COMMUNICATION & UNDERSTANDING**

Career preparation and related courses *(require successful completion of a minimum of 18 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
INTERNATIONAL & GLOBAL STUDIES:
GLOBAL COMMUNICATION & UNDERSTANDING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
SOSC-2010	Introduction to International Studies	–	4.0
SPCH-1400	Mass Media Communication in a Global Culture	–	3.0
SPCH-2300	Intercultural communication	–	4.0
SPCH-2700	Change, Conflict, & Crisis Communication	–	4.0
And 1 course from the following:			–
POLS-1600 –OR– POLS-1900	International Politics –OR– Comparative Systems: USA	POLS-1000	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/IGSTGCOMCT.html>

See page 20 for Gainful Employment Information.

International & Global Studies: Modern Language & Culture—Asia

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Certificate	International & Global Studies: Modern Language & Culture—Asia	23	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

With globalization now a fundamental part of everyday life, this certificate will give students information about the culture of a specific region, along with practice in a core language. These courses will especially help to prepare students interested in pursuing a career in international studies or business.

Requirements & Specific Information:

Students who are interested in emphasizing international business while earning an Associate of General Studies degree may combine this certificate with the Certificate in Global Business Fundamentals and the Certificate in Global Communications and Understanding to fulfill the degree requirements.

Career Opportunities:

International & Global Studies: Modern Language & Culture—Asia—Certificate Career Opportunities: Job titles such as Interpreter/Translator, Public Relations Specialist, Reporters & Correspondents, International Sales Manager, Immigrations & Customs Inspectors, Community & Social Service Specialists, and Broadcast News Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**CERTIFICATE IN
INTERNATIONAL & GLOBAL STUDIES:
MODERN LANGUAGE & CULTURE—ASIA**

Career preparation and related courses *(require successful completion of a minimum of 23 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
INTERNATIONAL & GLOBAL STUDIES:
MODERN LANGUAGE & CULTURE—ASIA**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
INTL-2300	Introduction to Japan	–	4.0
INTL-2500	Introduction to Chinese Civilization	–	4.0
CHIN-1260	Introduction to Chinese Language & Culture	–	4.0
SEMESTER 2			
CHIN-1270	Chinese Language & Culture 2	CHIN-1260 or two or more years of high school Chinese	4.0
HIST-2520	Asia in the Modern World	–	4.0
HUMN-2000	Introduction to Asian Religions & Culture	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/IGSTASIACT.html>

See page 20 for Gainful Employment Information.

International & Global Studies: Modern Language & Culture—Europe

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Certificate	International & Global Studies: Modern Language & Culture—Europe	24	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

With globalization now a fundamental part of everyday life, this certificate will give students information about the culture of a specific region, along with practice in a core language. These courses will especially help to prepare students interested in pursuing a career in international studies or business.

Requirements & Specific Information:

NOTE: Students interested in emphasizing international business while earning an Associate of General Studies degree may combine this certificate with the Certificate in Global Business Fundamentals.

Career Opportunities:

International & Global Studies: Modern Language & Culture—Europe—Certificate Career Opportunities: Job titles such as Interpreter/Translator, Public Relations Specialist, Reporters & Correspondents, International Sales Manager, Immigrations & Customs Inspectors, Community & Social Service Specialists, and Broadcast News Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**CERTIFICATE IN
INTERNATIONAL & GLOBAL STUDIES:
MODERN LANGUAGE & CULTURE—EUROPE**

Career preparation and related courses *(require successful completion of a minimum of 24 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
INTERNATIONAL & GLOBAL STUDIES:
MODERN LANGUAGE & CULTURE—EUROPE**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
INTL-2000 –OR– INTL-2010	Introduction to Latin America –OR– Introduction to Russia & Eastern Europe	–	4.0
HIST-1600	Western Civilization Since 1648	–	4.0
And select 1 language course:			
FREN-1260	Elementary French 1	–	4.0
GRMN-1260	Elementary German 1	–	
ITAL-1260	Elementary Italian 1	–	
SPAN-1260	Elementary Spanish 1	–	
SEMESTER 2			
FREN-1270 –OR– GRMN-1270 –OR– ITAL-1270 –OR– SPAN-1270	Elementary French 2 –OR– Elementary German 2 –OR– Elementary Italian 2 –OR– Elementary Spanish 2	FREN-1260 or two or more years of high school French –OR– GRMN-1260 or two or more years of high school German –OR– ITAL-1260 or two or more years of high school Italian –OR– SPAN-1260 or two or more years of high school Spanish	4.0
SEMESTER 3			
FREN-2360 –OR– GRMN-2360 –OR– ITAL-2360 –OR– SPAN-2360	Intermediate French 1 –OR– Intermediate German 1 –OR– Intermediate Italian 1 –OR– Intermediate Spanish 2	FREN-1270 –OR– GRMN-1270 –OR– ITAL-1270 –OR– SPAN-1270	4.0
SEMESTER 4			
FREN-2370 –OR– GRMN-2370 –OR– ITAL-2370 –OR– SPAN-2370	Intermediate French 2 –OR– Intermediate German 2 –OR– Intermediate Italian 2 –OR– Intermediate Spanish 2	FREN-2360 –OR– GRMN-2360 –OR– ITAL-2360 –OR– SPAN-2360	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/IGSTEUROCT.html>

See page 20 for Gainful Employment Information.

International & Global Studies: Modern Language & Culture—Latin America

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Certificate	International & Global Studies: Modern Language & Culture—Latin America	23	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

With globalization now a fundamental part of everyday life, this certificate will give students information about the culture of a specific region, along with practice in a core language. These courses will especially help to prepare students interested in pursuing a career in international studies or business.

Requirements & Specific Information:

Students interested in emphasizing international business while earning an Associate of General Studies degree may combine this certificate with the Certificate in Global Business fundamentals and the Certificate in Global Communications & Understanding to fulfill the degree requirements.

Career Opportunities:

International & Global Studies: Modern Language & Culture—Latin America—Certificate Career Opportunities: Job titles such as Interpreter/Translator, Public Relations Specialist, Reporters & Correspondents, International Sales Manager, Immigrations & Customs Inspectors, Community & Social Service Specialists, and Broadcast News Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**CERTIFICATE IN
INTERNATIONAL & GLOBAL STUDIES:
MODERN LANGUAGE & CULTURE—LATIN AMERICA**

Career preparation and related courses *(require successful completion of a minimum of 23 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
INTERNATIONAL & GLOBAL STUDIES:
MODERN LANGUAGE & CULTURE—LATIN AMERICA**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
INTL-2000	Introduction to Latin America	–	4.0
HIST-2420	Latin America in the Modern World	–	3.0
SPAN-1260	Elementary Spanish 1	–	4.0
SEMESTER 2			
SPAN-1270	Elementary Spanish 2	SPAN-1260 or two or more years of high school Spanish	4.0
SEMESTER 3			
SPAN-2360	Intermediate Spanish 1	SPAN-1270	4.0
SEMESTER 4			
SPAN-2370	Intermediate Spanish 2	SPAN-2360	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/IGSTLATINCT.html>

See page 20 for Gainful Employment Information.

International & Global Studies: Speech (Intercultural Communication)

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Arts	International & Global Studies: Speech (Intercultural Communication)	57-65	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The borders of Macomb County, the State of Michigan, and even the United States are no longer barriers to, but opportunities for, residents to cross. The world is smaller than ever before... not by physical size, but by the ability to connect, talk, share information, or do business with people from all over the world in the blink of an eye. Having a degree or certificate in International and Global Studies will position students to succeed and advance in a rapidly changing world. Graduates from this program can transfer courses to 4-year institutions, whether to continue in global studies or other related fields.

Career Opportunities:

International & Global Studies: Speech (Intercultural Communication)—Associate of Arts Career Opportunities: Job titles such as Interpreter/Translator, Public Relations Specialist, Reporters & Correspondents, International Sales Manager, Immigrations & Customs Inspectors, Community & Social Service Specialists, and Broadcast News Analysts are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF ARTS IN
INTERNATIONAL & GLOBAL STUDIES: SPEECH (INTERCULTURAL COMMUNICATION)**

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF ARTS IN
INTERNATIONAL & GLOBAL STUDIES: SPEECH (INTERCULTURAL COMMUNICATION)**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group IA Course: ENGL-1180 or ENGL-1210	Communications 1 or Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SPCH-1060	Speech Communication	-	3.0
Group IV Course: FREN-1260 -OR- GRMN-1260 -OR- ITAL-1260 -OR- SPAN-1260	Elementary French 1 -OR- Elementary German 1 -OR- Elementary Italian 1 -OR- Elementary Spanish 1	-	4.0
Group III Course: ANTH-1000 -OR- PSYC-2600	Introduction to Anthropology -OR- Social Psychology	PSYC-1010	3.0 - 4.0
SEMESTER 2			
Group IB Course: ENGL-1190 -OR- ENGL-1220	Communications 2 -OR- Composition 2	ENGL-1180 -OR- ENGL-1190	3.0-4.0
Group IV Course: FREN-1270 -OR- GRMN-1270 -OR- ITAL-1270 -OR- SPAN-1270	Elementary French 2 -OR- Elementary German 2 -OR- Elementary Italian 2 -OR- Elementary Spanish 2	FREN-1260 -OR- GRMN-1260 -OR- ITAL-1260 -OR- SPAN-1260	4.0
SOSC-2010	Introduction to International Studies	-	4.0
GEOG-2000	World Regional Geography	-	4.0
SPCH-1200 -OR- SPCH-1400 -OR- SPCH-2100 -OR- SPCH-2300 -OR- SPCH-2700	Group Discussion & Leadership -OR- Mass Media Communication in a Global Culture -OR- Interpersonal Communication -OR- Intercultural Communication -OR- Change, Conflict, & Crisis Communication	-	3.0 - 4.0

SEMESTER 3			
Group IIIC Course: POLS-1000	Introduction to American Politics	–	4.0
Group IIB or IIC Course: MATH-1### –OR– Any Science Course	Any MATH course, 1000 or above –OR– ENVS-1050 is recommended	–	2.0-6.0
SPCH-1200 –OR– SPCH-1400 –OR– SPCH-2100 –OR– SPCH-2300 –OR– SPCH-2700	Group Discussion & Leadership –OR– Mass Media Communication in a Global Culture –OR– Interpersonal Communication –OR– Intercultural Communication –OR– Change, Conflict, & Crisis Communication	–	3.0 – 4.0
Group IIIB Course INTL-2000 –OR– INTL-2010 –OR– INTL-2300 –OR– INTL-2500 –OR– INTL-2700	Introduction to Latin America –OR– Introduction to Russia & Eastern Europe –OR– Introduction to Japan –OR– Introduction to Chinese Civilization –OR– Introduction to Africa	–	4.0
SEMESTER 4			
SPCH-1200 –OR– SPCH-1400 –OR– SPCH-2100 –OR– SPCH-2300 –OR– SPCH-2700	Group Discussion & Leadership –OR– Mass Media Communication in a Global Culture –OR– Interpersonal Communication –OR– Intercultural Communication –OR– Change, Conflict, & Crisis Communication	–	3.0 – 4.0
Group II Course	1000—level or higher science course with lab	–	4.0-6.0
POLS-1600	International Politics	–	3.0
Group V Course	Any PHED Wellness course – 2000 or above	–	2.0-3.0
INTL-2000 –OR– INTL-2010 –OR– INTL-2300 –OR– INTL-2500 –OR– INTL-2700	Introduction to Latin America –OR– Introduction to Russia & Eastern Europe –OR– Introduction to Japan –OR– Introduction to Chinese Civilization –OR– Introduction to Africa	–	4.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I – V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I – V can be taken in any semester.
- Select elective courses based on your transfer college/university.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Land Surveying Technology—Field Technician

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Land Surveying Technology—Field Technician	62	–
Certificate	Land Surveying Technology—Technician, Land Surveying	22-35	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Christopher Christian	586.445.7480	christianc@macomb.edu	South Campus, M212

Program Description:

The Land Surveying Technology program offers specialty options in either Survey Office Technician or Survey Field Technician. Either specialty is designed to provide students the opportunity to develop skills, knowledge, and abilities for entry level and intermediate positions in the land surveying and construction industry. Students successfully completing this program will have the technical background to assist registered surveyors and civil engineers in completion of project tasks. The program offers both an Associate of Applied Science degree in Land surveying Technology and Certificate option for those students already In the industry wishing to improve their skills.

Students who successfully complete the program will develop a solid foundation in surveying and will be prepared to take the Certification for Land Surveying Technicians exams (Levels I, II, III, IV), offered through the National Society of Professional Surveyors and Michigan Society of Professional Surveyors. These certifications (Levels I, II, III IV) are recognized nationally for qualified survey technicians. The curriculum reflects a strong emphasis in state of the art surveying instrument operation, computer aided design drafting, and procedures for advanced construction layout control.

Career Opportunities:

Land Surveying—Certificate Career Opportunities: Job titles such as Surveying & Mapping Technician, Architectural & Civil Drafters, Appraiser & Assessors of Real Estate, Construction & Building Inspector, Surveyors, and Cartographer & Photogrammetrist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Land Surveying Technology—Field Technician—Associate of Applied Science—Career Opportunities: Job titles such as Surveying & Mapping Technician, Architectural & Civil Drafters, Appraiser & Assessors of Real Estate, Construction & Building Inspector, Surveyors, and Cartographer & Photogrammetrist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Land Surveying Technology—Field Technician—Certificate Career Opportunities: Job titles such as Surveying & Mapping Technician, Architectural & Civil Drafters, Appraiser & Assessors of Real Estate, Construction & Building Inspector, Surveyors, and Cartographer & Photogrammetrist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
LAND SURVEYING TECHNOLOGY—FIELD TECHNICIAN**

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN LAND SURVEYING TECHNOLOGY—OFFICE TECHNICIAN**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
DRAD-1110	Introduction to Architectural Drafting	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SURV-1100	Elementary Surveying	–	3.0
Group II Course: Math-1430	College Trigonometry	Grade C or better in MATH-1410 or an equivalent college course or an acceptable score on a placement or prerequisite exam	3.0
Group V Course	Any PHED Wellness course–2000 or above	–	2.0-3.0
Elective	Suggest elective areas: Architectural Technology, Business Law, Civil Technology, Construction Technology, Computer Information Systems	–	3.0-5.0
SEMESTER 2			
SURV-1200	Route Surveying	SURV-1100	3.0
ATBC-1510	Construction–Layout Surveying	–	2.0
SURV-1110	Field Procedures	MATH-1430, SURV-1100, and MATH-1420 or MATH-1450	2.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Elective	Suggest elective areas: Architectural Technology, Business Law, Civil Technology, Construction Technology, Computer Information Systems	–	3.0-5.0
SEMESTER 3			
SURV-2300	Boundary Surveying	SURV-1100	3.0
SURV-2400	Topographic Surveying	SURV-1100	3.0
SURV-2500	Introduction to Control Surveys	SURV-1200, or SURV-2300	3.0
Group III Course: POLS-1200	Local & State Government	–	3.0
Elective	Suggest elective areas: Architectural Technology, Business Law, Civil Technology, Construction Technology, Computer Information Systems	–	3.0-5.0
SEMESTER 4			
SURV-2600	Advanced Construction Layout–Surveying 2	SURV-1200, ATBC-1510	3.0
SURV-2700	Advanced Survey Instrumentation	SURV-1100	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Elective	Suggest elective areas: Architectural Technology, Business Law, Civil Technology, Construction Technology, Computer Information Systems	–	3.0-5.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I-V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I-V can be taken in any semester.
- It is strongly encouraged that you work with a counselor or advisor to plan your schedule.

**CERTIFICATE IN
LAND SURVEYING**

Career preparation and related courses *(require successful completion of a minimum of 22 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN LAND SURVEYING			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
DRAD-1110	Introduction to Architectural Drafting	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
MATH-1430	College Trigonometry	Grade C or better in MATH-1410 or an equivalent college course or an acceptable score on a placement or prerequisite exam	3.0
SURV-1100	Elementary Surveying	–	3.0
SEMESTER 2			
SURV-1200	Route Surveying	SURV-1100	3.0
SEMESTER 3			
SURV-2300	Boundary Surveying	SURV-1100	3.0
SURV-2400	Topographic Surveying	SURV-1100	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/LNDSURCT.html>

See page 20 for Gainful Employment Information.

**CERTIFICATE IN
LAND SURVEYING TECHNOLOGY—FIELD TECHNICIAN**

Career preparation and related courses *(require successful completion of a minimum of 35 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN LAND SURVEYING TECHNOLOGY—FIELD TECHNICIAN			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
DRAD-1110	Introduction to Architectural Drafting	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
MATH-1430	College Trigonometry	Grade C or better in MATH-1410 or an equivalent college course or an acceptable score on a placement or prerequisite exam	3.0
SURV-1100	Elementary Surveying	–	3.0
SEMESTER 2			
SURV-1200	Route Surveying	SURV-1100	3.0
ATBC-1510	Construction-Layout Surveying	–	2.0
SURV-1110	Field Procedures	MATH-1430, SURV-1100, and MATH-1420 or MATH1450	2.0
SEMESTER 3			
SURV-2300	Boundary Surveying	SURV-1100	3.0
SURV-2400	Topographic Surveying	SURV-1100	3.0
SURV-2500	Introduction to Control Surveys	SURV-1200, or SURV-2300	3.0
SEMESTER 4			
SURV-2600	Advanced Construction Layout-Surveying 2	SURV-1200, ATBC-1510	3.0
SURV-2700	Advanced Survey Instrumentation	SURV-1100	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/LNDFLDCT.html>

See page 20 for Gainful Employment Information.

Land Surveying Technology—Office Technician

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Land Surveying Technology—Office Technician	62	–
Certificate	Land Surveying Technology—Office Technician	34	–
Certificate	Land Surveying	22	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Christopher Christian	586.445.7480	christianc@macomb.edu	South Campus

Program Description:

The Land Surveying Technology program offers specialty options in either Survey Office Technician or Survey Field Technician. Either specialty is designed to provide students the opportunity to develop skills, knowledge, and abilities for entry level and intermediate positions in the land surveying and construction industry. Students successfully completing this program will have the technical background to assist registered surveyors and civil engineers in completion of project tasks. The program offers both an Associate of Applied Science degree in Land surveying Technology and Certificate option for those students already in the industry wishing to improve their skills.

Students who successfully complete the program will develop a solid foundation in surveying and will be prepared to take the Certification for Land Surveying Technicians exams (Levels I, II, III, IV), offered through the National Society of Professional Surveyors and Michigan Society of Professional Surveyors. These certifications (Levels I, II, III IV) are recognized nationally for qualified survey technicians. The curriculum reflects a strong emphasis in state of the art surveying instrument operation, computer aided design drafting, and procedures for advanced construction layout control.

Career Opportunities:

Land Surveying—Certificate Career Opportunities: Job titles such as Surveying & Mapping Technician, Architectural & Civil Drafters, Appraiser & Assessors of Real Estate, Construction & Building Inspector, Surveyors, and Cartographer & Photogrammetrist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Land Surveying Technology—Office Technician—Associate of Applied Science—Career Opportunities: Job titles such as Surveying & Mapping Technician, Architectural & Civil Drafters, Appraiser & Assessors of Real Estate, Construction & Building Inspector, Surveyors, and Cartographer & Photogrammetrist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Land Surveying Technology—Office Technician—Certificate Career Opportunities: Job titles such as Surveying & Mapping Technician, Architectural & Civil Drafters, Appraiser & Assessors of Real Estate, Construction & Building Inspector, Surveyors, and Cartographer & Photogrammetrist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
LAND SURVEYING TECHNOLOGY—OFFICE TECHNICIAN**

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN LAND SURVEYING TECHNOLOGY—OFFICE TECHNICIAN**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
DRAD-1110	Introduction to Architectural Drafting	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SURV-1100	Elementary Surveying	–	3.0
Group II Course: Math-1430	College Trigonometry	Grade C or better in MATH-1410 or an equivalent college course or an acceptable score on a placement or prerequisite exam	3.0
Group V Course	Any PHED Wellness course–2000 or above	–	2.0-3.0
Elective	Suggest elective areas: Architectural Technology, Business Law, Civil Technology, Construction Technology, Computer Information Systems	–	3.0-5.0
SEMESTER 2			
ATTR-1150	Technical Report Writing	–	2.0
SURV-1200	Route Surveying	SURV-1100	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Elective	Suggest elective areas: Architectural Technology, Business Law, Civil Technology, Construction Technology, Computer Information Systems	–	3.0-5.0
SEMESTER 3			
SURV-2300	Boundary Surveying	SURV-1100	3.0
SURV-2400	Topographic Surveying	SURV-1100	3.0
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
Group III Course: POLS-1200	Local & State Government	–	3.0
Elective	Suggest elective areas: Architectural Technology, Business Law, Civil Technology, Construction Technology, Computer Information Systems	–	3.0-5.0
SEMESTER 4			
CIVL-2210	Drainage & Geology	–	3.0
SURV-2220	Civil & Survey Drafting	SURV-1100, DRCG-1140, DRAD-1110	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2#### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Elective	Suggest elective areas: Architectural Technology, Business Law, Civil Technology, Construction Technology, Computer Information Systems	–	3.0-5.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I-V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I-V can be taken in any semester.
- It is strongly encouraged that you work with a counselor or advisor to plan your schedule.

**CERTIFICATE IN
LAND SURVEYING**

Career preparation and related courses *(require successful completion of a minimum of 22 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN LAND SURVEYING			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
DRAD-1110	Introduction to Architectural Drafting	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
MATH-1430	College Trigonometry	Grade C or better in MATH-1410 or an equivalent college course or an acceptable score on a placement or prerequisite exam	3.0
SURV-1100	Elementary Surveying	–	3.0
SEMESTER 2			
SURV-1200	Route Surveying	SURV-1100	3.0
SEMESTER 3			
SURV-2300	Boundary Surveying	SURV-1100	3.0
SURV-2400	Topographic Surveying	SURV-1100	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/LNDSURCT.html>

See page 20 for Gainful Employment Information.

**CERTIFICATE IN
LAND SURVEYING—OFFICE TECHNICIAN**

Career preparation and related courses *(require successful completion of a minimum of 34 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN LAND SURVEYING—OFFICE TECHNICIAN			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
DRAD-1110	Introduction to Architectural Drafting	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
MATH-1430	College Trigonometry	Grade C or better in MATH-1410 or an equivalent college course or an acceptable score on a placement or prerequisite exam	3.0
SURV-1100	Elementary Surveying	–	3.0
SEMESTER 2			
ATTR-1150	Technical Report Writing	–	2.0
SURV-1200	Route Surveying	SURV-1100	3.0
SEMESTER 3			
SURV-2300	Boundary Surveying	SURV-1100	3.0
SURV-2400	Topographic Surveying	SURV-1100	3.0
DRCG-1140	Interactive Computer Graphics-Introduction to 2D & 3D AutoCAD	–	4.0
SEMESTER 4			
CIVL-2210	Drainage & Geology	–	3.0
SURV-2220	Civil & Survey Drafting	SURV-1100, DRCG-1140, DRAD-1110	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/LNDOFFCT.html>

See page 20 for Gainful Employment Information.

Law Enforcement

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Law Enforcement	62	–
Certificate	Law Enforcement	27	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Donna Sherwood	586.286.2071	sherwoodd@macomb.edu	Center Campus
Professor	Gino Hliebay	586.286.2159	hliebaye@macomb.edu	Center Campus

Program Description:

The Law Enforcement program prepares students for entry-level positions in agencies identified with the criminal justice system in the United States and offers opportunities to current practitioners for improvement of their skills, knowledge and abilities. Students will develop or improve skills and knowledge of criminal law, current issues in policing, evidence and criminal procedures and investigation, as well as other facets of law enforcement.

Career Opportunities:

Law Enforcement—Associate of Applied Science—Career Opportunities: Job titles such as Police & Sheriff Patrol Officer, Correctional Officer/Jailer, Dispatcher, Bailiff, Private Detectives & Investigators, and Security Guards are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Law Enforcement—Certificate Career Opportunities: Job titles such as Police & Sheriff Patrol Officer, Correctional Officer/Jailer, Dispatcher, Bailiff, Private Detectives & Investigators, and Security Guards are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN LAW ENFORCEMENT

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN LAW ENFORCEMENT

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2080	Business Communications for Public Service	–	2.0
LAWE-1100	Criminal Justice	–	3.0
LAWE-1280	The Police Function	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	–	3.0-4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 2			
LAWE-1290	Current Issues in Policing	–	3.0
LAWE-1320	Interviewing	–	3.0
Group III Course: PSYC-1010 –OR– SOCY-1010	Introductory Psychology –OR– Principles of Sociology	–	4.0
And 2 courses from the following:			
ITCS-1010	Computer & Information Processing Principles	–	4.0
LAWE-1120	Introduction to Corrections	–	3.0
LAWE-1300	Police Field Study	30 semester hours of credit and faculty approval	3.0
LAWE-1410	Delinquency Prevention & Control	–	3.0
LAWE-1500	Analysis of Terrorism	–	3.0
LAWE-1600	Introduction to Cyber Crime Investigation	–	3.0
LAWE-2320	Police Leadership, Management & Supervision	–	3.0
LAWE-2330	Introduction to Criminal Investigations	–	3.0
LAWE-2700	Advanced Court Procedures	LAWE-1100 and either LAW-1280 or LAW-1290	3.0
LAWE-2903	Directed Study	Approval of directed study agreement	3.0
SECR-1000	Introduction to Security	–	3.0
SECR-1120	Principles of Loss Prevention	–	3.0
SOCY-1100	Modern Social Problems	–	3.0
SOCY-2000	Sociology of Health & Human Behavior	–	4.0
SOCY-2450	Marriage & Family	–	3.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN LAW ENFORCEMENT**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 3			
LAWE-2350	Criminal Investigation & Laboratory Techniques	–	4.0
LAWE-2680	Evidence & Criminal Procedures	–	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0
SEMESTER 4			
LAWE-1400	Crime Causation	–	3.0
LAWE-2690	Criminal Law	–	4.0
Add 2 of the following courses not chosen in semester 2:			
ITCS-1010	Computer & Information Processing Principles	–	4.0
LAWE-1120	Introduction to Corrections	–	3.0
LAWE-1300	Police Field Study	30 semester hours of credit and faculty approval	3.0
LAWE-1410	Delinquency Prevention & Control	–	3.0
LAWE-1500	Analysis of Terrorism	–	3.0
LAWE-1600	Introduction to Cyber Crime Investigation	–	3.0
LAWE-2320	Police Leadership, Management & Supervision	–	3.0
LAWE-2330	Introduction to Criminal Investigations	–	3.0
LAWE-2700	Advanced Court Procedures	LAWE-1100 and either LAW-1280 or LAW-1290	3.0
LAWE-2903	Directed Study	Approval of directed study agreement	3.0
SECR-1000	Introduction to Security	–	3.0
SECR-1120	Principles of Loss Prevention	–	3.0
SOCY-1100	Modern Social Problems	–	3.0
SOCY-2000	Sociology of Health & Human Behavior	–	4.0
SOCY-2450	Marriage & Family	–	3.0

NOTES:

- Students planning to obtain a Bachelor’s degree in Criminal Justice should seek the advice of a Law Enforcement program advisor, counselor, or academic advisor when selecting elective courses.
- (Alternative Selection) The student may arrange to take courses specifically directed to the educational occupational goal for employment (of the student) with the consent of the faculty advisor and the department. The courses must be applicable to specific fields in Law Enforcement (corrections, courts, investigations, law, etc.) that would provide the student an improved background for the desired specific employment opportunities at the federal, state or local levels. Credit may be awarded for completion of an MCOLES-approved police academy.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor or advisor to plan your schedule.

**CERTIFICATE IN
LAW ENFORCEMENT**

Career preparation and related courses *(require successful completion of a minimum of 27 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN LAW ENFORCEMENT			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
LAWE-1100	Criminal Justice	–	3.0
LAWE-1280	The Police Function	–	3.0
LAWE-1290	Current Issues in Policing	–	3.0
LAWE-1320	Interviewing	–	3.0
SEMESTER 2			
LAWE-1400	Crime Causation	–	3.0
LAWE-2350	Criminal Investigation & Laboratory Techniques	–	4.0
LAWE-2680	Evidence & Criminal Procedures	–	4.0
LAWE-2690	Criminal Law	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/LAWCT.html>

See page 20 for Gainful Employment Information.

Law Enforcement with Police Academy

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Law Enforcement with Police Academy	68	–
Certificate	Law Enforcement with Police Academy	42	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Donna Sherwood	586.286.2071	sherwoodd@macomb.edu	Center Campus
Professor	Gino Hliebaya	586.286.2159	hliebaya@macomb.edu	Center Campus

Program Description:

The Law Enforcement with Police Academy program prepares students for entry-level positions in agencies identified with the criminal justice system in the United States as well as offers opportunities to current practitioners for improvement of their skills, knowledge, and abilities. Students will develop or improve skills and knowledge of criminal law, current issues in policing, evidence and criminal procedures and investigation as well as other facets of law enforcement.

Career Opportunities:

Law Enforcement with Police Academy—Associate of Applied Science—Career Opportunities: Job titles such as Police & Sheriff Patrol Officer, Correctional Officer/Jailer, Dispatcher, Bailiff, Private Detectives & Investigators, and Security Guards are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Law Enforcement with Police Academy—Certificate Career Opportunities: Job titles such as Police & Sheriff Patrol Officer, Correctional Officer/Jailer, Dispatcher, Bailiff, Private Detectives & Investigators, and Security Guards are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
LAW ENFORCEMENT WITH POLICE ACADEMY**

Career preparation and related courses *(require successful completion of a minimum of 68 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN LAW ENFORCEMENT WITH POLICE ACADEMY**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BCOM-2080	Business Communications for Public Service	–	2.0
LAWE-1100	Criminal Justice	–	3.0
LAWE-1280	The Police Function	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 2			
LAWE-1290	Current Issues in Policing	–	3.0
LAWE-1320	Interviewing	–	3.0
Group III Course: PSYC-1010 –OR– SOCY-1010	Introductory Psychology –OR– Principles of Sociology	–	4.0
And 2 courses from the following:			
ITCS-1010	Computer & Information Processing Principles	–	4.0
LAWE-1120	Introduction to Corrections	–	3.0
LAWE-1300	Police Field Study	30 semester hours of credit and faculty approval	3.0
LAWE-1410	Delinquency Prevention & Control	–	3.0
LAWE-1500	Analysis of Terrorism	–	3.0
LAWE-1600	Introduction to Cyber Crime Investigation	–	3.0
LAWE-2320	Police Leadership, Management & Supervision	–	3.0
LAWE-2330	Introduction to Criminal Investigations	–	3.0
LAWE-2700	Advanced Court Procedures	LAWE-1100 and either LAW-1280 or LAW-1290	3.0
LAWE-2903	Directed Study	Approval of directed study agreement	3.0
SECR-1000	Introduction to Security	–	3.0
SECR-1120	Principles of Loss Prevention	–	3.0
SOCY-1100	Modern Social Problems	–	3.0
SOCY-2000	Sociology of Health & Human Behavior	–	4.0
SOCY-2450	Marriage & Family	–	3.0
SEMESTER 3			
LAWE-2350	Criminal Investigation & Laboratory Techniques	–	4.0
LAWE-2680	Evidence & Criminal Procedures	–	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN LAW ENFORCEMENT WITH POLICE ACADEMY**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 4			
LAWE-1400	Crime Causation	–	3.0
LAWE-2690	Criminal Law	–	4.0
LAWE-2810	Basic Police Academy	Consent of department. Pre-service students must score a minimum level 4 on the ACT Work Keys reading for information examination. Students must meet the admissions standards as set by the Michigan Commission on Law Enforcement Standards (MCOLES). At a minimum, persons taking this course must be at least 18 years of age, have a valid Michigan driver's license, no felony convictions, and successfully pass the Michigan Commission on Law Enforcement Standards (MCOLES) reading and writing and physical fitness pre-employment tests.	15.0
And 2 courses from the following, not chosen in semester 2:			–
ITCS-1010	Computer & Information Processing Principles	–	4.0
LAWE-1120	Introduction to Corrections	–	3.0
LAWE-1300	Police Field Study	30 semester hours of credit and faculty approval	3.0
LAWE-1410	Delinquency Prevention & Control	–	3.0
LAWE-1500	Analysis of Terrorism	–	3.0
LAWE-1600	Introduction to Cyber Crime Investigation	–	3.0
LAWE-2320	Police Leadership, Management & Supervision		3.0
LAWE-2330	Introduction to Criminal Investigations	–	3.0
LAWE-2700	Advanced Court Procedures	LAWE-1100 and either LAW-1280 or LAW-1290	3.0
LAWE-2903	Directed Study	Approval of directed study agreement	3.0
SECR-1000	Introduction to Security	–	3.0
SECR-1120	Principles of Loss Prevention	–	3.0
SOCY-1100	Modern Social Problems	–	3.0
SOCY-2000	Sociology of Health & Human Behavior	–	4.0
SOCY-2450	Marriage & Family	–	3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group II–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor or advisor to plan your schedule.

CERTIFICATE IN LAW ENFORCEMENT WITH POLICE ACADEMY

Career preparation and related courses *(require successful completion of a minimum of 42 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN LAW ENFORCEMENT WITH POLICE ACADEMY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
LAWE-1100	Criminal Justice	–	3.0
LAWE-1280	The Police Function	–	3.0
LAWE-1290	Current Issues in Policing	–	3.0
LAWE-1320	Interviewing	–	3.0
SEMESTER 2			
LAWE-1400	Crime Causation	–	3.0
LAWE-2350	Criminal Investigation & Laboratory Techniques	–	4.0
LAWE-2680	Evidence & Criminal Procedures	–	4.0
LAWE-2690	Criminal Law	–	4.0
SEMESTER 3			
LAWE-2810	Basic Police Academy	Consent of department. Pre-service students must score a minimum level 4 on the ACT Work Keys reading for information examination. Students must meet the admissions standards as set by the Michigan Commission on Law Enforcement Standards (MCOLES). At a minimum, persons taking this course must be at least 18 years of age, have a valid Michigan driver's license, no felony convictions, and successfully pass the Michigan Commission on Law Enforcement Standards (MCOLES) reading and writing and physical fitness pre-employment tests.	15.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/LAWACADCT.html>

See page 20 for Gainful Employment Information.

Legal Assistant

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Legal Assistant	67	Designed for transferring into a Bachelor of Business Administration program or entry into the field of Legal Assisting.

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Jennifer Gornicki	586.445.7176	gornickij@macomb.edu	South Campus

Program Description:

Students admitted to the Legal Assistant program are encouraged to attend a scheduled orientation session within their first year. Students do not need to complete the orientation prior to registering for classes. Please call 586.445.7167 to make arrangements.

Legal Assistant courses are geared to prepare a student to relieve an attorney from those portions of the legal practice that require routine legal processes. At the completion of this program, the student will be able to assist and work under the control and supervision of an attorney but must not practice law or give legal advice.

The goals of the Legal Assistant program are that students will:

- Know their ethical and professional responsibilities as professional members of the legal services delivery team.
- Be able to conduct legal research, accurately prepare legal forms and documents.
- Know the purpose and function of legal pleadings, and conduct and summarize factual investigations.
- Know the purpose and function of discovery and use electronic evidence.
- Know substantive law in family law, wills and estates, real estate, administrative law, bankruptcy, court procedure, corporations and other business organizations.
- Demonstrate competence in related courses in general education, business law, accounting, communications, mathematics, office management, keyboarding, and computer information systems.

Requirements & Specific Information:

In order to receive a Macomb Community College Associate of Applied Science degree in Legal Assistant, a minimum of 15 semester hours must be taken at Macomb. At least 10 of those 15 semester hours must be taken in traditional classroom instruction in Legal Assistant specialty courses. No more than 6 semester hours of legal specialty courses may be obtained through Credit for Prior Learning.

Accreditation:

The Associate of Applied Science degree in Legal Assistant program is approved by the American Bar Association, 321 North Clark Street, Chicago Illinois 60610.

Career Opportunities:

Legal Assistant—Associate of Applied Science—Career Opportunities: Job titles such as Paralegal/Legal Assistants and Legal Secretary are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN LEGAL ASSISTANT

Career preparation and related courses *(require successful completion of a minimum of 67 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN LEGAL ASSISTANT

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BLAW-1080	Business Law 1	–	4.0
LEGA-2010	Michigan Legal System & Ethics	–	2.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
BCOM-2050	Business Communication	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	– Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
BLAW-1090	Business Law 2	BLAW-1080	4.0
ACCT-1070 –OR– ACCT-1080	Accounting for Entrepreneurs –OR– Principles of Accounting 1	–	3.0-4.0
LEGA-2100	Mechanics of Real Estate Law	LEGA-2010	3.0
LEGA-2120	Administration of Estates	LEGA-2010	2.0
LEGA-2090	Legal Procedure	LEGA-2010	4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 3			
LEGA-2030	Legal Research & Writing 1	BLAW-1090 & LEGA-2010	3.0
BCOM-2060	Advanced Business Communications	BCOM-2050	4.0
LEGA-2210	Electronic Evidence & Discovery	LEGA-2010 & LEGA-2090	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 4			
LEGA-2040	Legal Research & Writing 2	LEGA-2030	3.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
And 5-6 credit hours from the following:			–
HHSC-1700	Medical Terminology	–	3.0
LEGA-2110	Principles of Family Law	LEGA-2010	2.0
LEGA-2180	Business Associations	LEGA-2010	2.0
LEGA-2220	Computerized Litigation Support Concepts (CLSC)	ITCS-1010 & LEGA-2010	3.0
CRER-2510	Internship Seminar	–	1.0
LEGA-2130	Proceedings Under the Federal Bankruptcy Code & Debt Collection	LEGA-2010	2.0
LEGA-2160	Proceedings Under Administrative Agencies	LEGA-2010	2.0
LEGA-2170	Criminal Law & Procedures	LEGA-2010	2.0
BUSN-1010	Business Enterprise	–	3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Manufacturing Engineering

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Manufacturing Engineering	62	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Dr. Harry J. Buhalis	586.445.7450	buhalish@macomb.edu	South Campus

Program Description:

The Manufacturing Engineering program will prepare the learner for a career in Manufacturing Engineering and provide a learning environment with the relevant experiences, allowing the learner to develop the appropriate skills necessary to provide solutions to real world manufacturing engineering situations.

Career Opportunities:

Manufacturing Engineering—Associate of Applied Science—Career Opportunities: Job titles such as industrial engineering technician, mechanical engineering technician, manufacturing engineering technician_ are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN MANUFACTURING ENGINEERING

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN MANUFACTURING ENGINEERING			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ATMT-1300	Metallurgy—Characteristics of Ferrous Metals	–	2.0
PRDE-1250	Basic Blueprint Reading	–	2.0
PRDE-1300	Industrial & Materials Processes	–	4.0
ATMT-1150	Machine Theory—Machine Tool Laboratory 1	–	3.0
PRDE-1450	AutoCAD: Detailing & Assemblies	DRCG-1140	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better ENGL 1210	3.0-4.0
SEMESTER 2			
ATMT-1310	Metallurgy—Characteristics of Non-Ferrous Metals	ATMT-1300	2.0
ENGR-1000	Introduction to Engineering	–	3.0
PRDE-2200	Jig & Fixture Detailing & Design	PRDE-1410 or PRDE-1450 or PRDE-1520 or PRDE-1620 or consent of advisor; and PRDE-1300	3.0
Group IB Course: SPCH-1060	Speech Communication	–	3.0
Group II Course: MATH-1760	Analytic Geometry & Calculus 1	Grade C or better in MATH-1430 or MATH-1460, or equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
SEMESTER 3			
QUAL-1011	Quality Fundamentals	Students should contact the Tech Academic Advisor for QUAL 1011 Substitution Options.	3.0
Group II Course: MATH-1770	Analytic Geometry & Calculus 2	Grade C or better in MATH-1760, or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group II Course: PHYS-2220	Analytical Physics 1	PHYS-1180 with grade C or better, or passing score on the Physics Area Placement Test and MATH-1760 with grade C or better	5.0
Group III Course: ECON-1160	Principles of Economics 1	–	3.0
SEMESTER 4			
Group II Course: MATH-2760	Analytic Geometry & Calculus 2	Grade C or better in MATH-1770 or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group II Course: PHYS-2230	Analytical Physics 2	PHYS-2220 with grade C or better and MATH-1760 with grade C or better	5.0
Group IV Course: PHIL-2010 –OR– PHIL-2100	Introduction to Philosophy –OR– Introduction to Ethics	–	3.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0

Manufacturing Engineering Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Manufacturing Engineering Technology	64	—

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Dr. Harry J. Buhalis	586.445.7450	buhalish@macomb.edu	South Campus

Program Description:

The Manufacturing Engineering Technology program will prepare individuals as qualified technologists to provide support for routine engineering operations in product design, development, and manufacturing, with focus on hands-on experience to contribute resourceful and innovative solutions to today's technical problems.

Career Opportunities:

Manufacturing Engineering Technology—Associate of Applied Science—Career Opportunities: Job titles such as Industrial Engineering Technicians are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN MANUFACTURING ENGINEERING TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 64 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN MANUFACTURING ENGINEERING TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ATMT-1300	Metallurgy—Characteristics of Ferrous Metals	—	2.0
PRDE-1250	Basic Blueprint Reading	—	2.0
PRDE-1300	Industrial & Materials Processes	—	4.0
ATMT-1150	Machine Theory—Machine Tool Laboratory 1	—	3.0
PRDE-1450	AutoCAD: Detailing & Assemblies	DRCG-1140	3.0
Group IA Course: ENGL-1180 —OR— ENGL-1210	Communications 1 —OR— Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
ATMT-1310	Metallurgy—Characteristics of Non-Ferrous Metals	ATMT-1300	2.0
ENGR-1000	Introduction to Engineering	—	3.0
PRDE-2200	Jig & Fixture Detailing & Design	PRDE-1410 or PRDE-1450 or PRDE-1520 or PRDE-1620 or consent of advisor; and PRDE-1300	3.0
Group IB Course: ENGL-1190 —OR— ENGL-1220	Communication 2 —OR— Composition 2	ENGL 1180 or ENGL 1210	3.0-4.0
SPCH-1060	Speech Communication		3.0
SEMESTER 3			
ELEC-1161	Electronic Technology 1	—	3.0
ELEC-1171	Electronic Technology 2	ELEC-1161	3.0
QUAL-1011	Quality Fundamentals	Students should contact the Tech Academic Advisor for QUAL 1011 Substitution Options.	3.0
Group II Course: MATH-1460	Precalculus	Grade B or better in MATH 1000, or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group II Course: PHYS-1180	College Physics 1	MATH 1000 with grade C or better, or higher level math course, or math placement score	4.0
Group II Course: CHEM-1050	Introduction to General Chemistry	MATH 0070 proficiency (demonstrated by math placement score, completing MATH 0070 with grade C or better, being enrolled in a higher level math, or having higher level math on college transcript)	4.0
Group II Course: PHYS-1190	College Physics 2	PHYS 1180 with grade C or better	4.0
SEMESTER 4			
Group III Course: ECON 1160	Principles of Economics 1	—	3.0
Group IV Course: PHIL-2010 —OR— PHIL-2100	Introduction to Philosophy —OR— Introduction to Ethics	—	3.0
Group V Course	Any PHED Wellness course—2000 or above	—	2.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups II–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Marketing

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Business Administration	Marketing	62	Designed for transferring into a Bachelor of Business Administration program or entry into the field of Entrepreneurship.
Certificate	Marketing	42-43	Designed for entry-level positions or furthering one's career.
Certificate	Advertising	33	Designed for entry-level positions or furthering one's career.
Skill Specific Certificate	Professional Selling E-Marketing	14 17	Designed for entry-level positions or furthering one's career.

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Monique Doll	586.445.7008	dollm@macomb.edu	South Campus
Professor	Joseph Rice	586.286.2040	ricej@macomb.edu	Center Campus

Program Description:

A business won't survive unless it can satisfy its customers while making a profit. This is what marketing is all about—providing value to customers. In the Marketing program, students will learn to identify, understand, and create relationships with the target market. They will also learn to analyze marketplace dynamics—changes in such things as the economy, social trends, technology, or competition. Finally, students will blend creativity and analysis to design marketing strategies. This includes designing a product or service, developing a pricing strategy, determining distribution points, and creating advertisements, incentives, or sales force strategies to promote it.

Certificate options are offered in Marketing, Advertising, Professional Selling, and E-Marketing.

Requirements & Specific Information:

Students choosing to complete ACCT-1070 will need at least one additional credit hour—taking an additional MKTG class and/or CRER-1510 (Workplace Success Strategies) is recommended.

Career Opportunities:

Marketing—Associate of Business Administration—Job titles such as Supervisors of Retail Sales Workers, Market Research Analysts & Marketing Specialists, Sales Representative (Wholesale & Manufacturing), Advertising Sales Agents, Wholesale & Retail Buyers, Demonstrators & Product Promoters, Sales Managers, and Merchandise Displayer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Marketing—Certificate: Job titles such as Supervisors of Retail Sales Workers, Market Research Analysts & Marketing Specialists, Sales Representative (Wholesale & Manufacturing), Advertising Sales Agents, Wholesale & Retail Buyers, Demonstrators & Product Promoters, Sales Managers, and Merchandise Displayer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Marketing—Advertising—Certificate: Job titles such as Supervisors of Retail Sales Workers, Market Research Analysts & Marketing Specialists, Sales Representative (Wholesale & Manufacturing), Advertising Sales Agents, Wholesale & Retail Buyers, Demonstrators & Product Promoters, Sales Managers, and Merchandise Displayer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Marketing—E-Marketing—Skill Specific Certificate: Job titles such as Supervisors of Retail Sales Workers, Market Research Analysts & Marketing Specialists, Sales Representative (Wholesale & Manufacturing), Advertising Sales Agents, Wholesale & Retail Buyers, Demonstrators & Product Promoters, Sales Managers, and Merchandise Displayer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Marketing—Professional Selling—Skill Specific Certificate: Job titles such as Supervisors of Retail Sales Workers, Market Research Analysts & Marketing Specialists, Sales Representative (Wholesale & Manufacturing), Advertising Sales Agents, Wholesale & Retail Buyers, Demonstrators & Product Promoters, Sales Managers, and Merchandise Displayer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF BUSINESS ADMINISTRATION IN MARKETING

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF BUSINESS ADMINISTRATION IN MARKETING			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BUSN-1010	Business Enterprise	–	3.0
BCOM-2050	Business Communications	–	4.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
ACCT-1070 –OR– ACCT-1080	Accounting for Entrepreneurs –OR– Principles of Accounting 1	–	3.0-4.0
MKTG-1010	Principles of Marketing	–	3.0
MGMT-1010	Principles of Management	–	3.0
Group III Course: ECON-1160 –OR– PSYC-1010	Principles of Economics 1 –OR– Introductory Psychology	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 3			
BLAW-1080	Business Law 1	–	4.0
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
SEMESTER 4			
MKTG-2060	Consumer Behavior	MKTG-1010	3.0
MKTG-2080	Marketing Research	MKTG-1010 & ITCS-1010	3.0
MKTG-2150	Global Marketing	MKTG-1010	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2#### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF BUSINESS ADMINISTRATION IN MARKETING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
And 3 courses from the following:			–
MKTG-1020	Dynamics of Retailing	–	3.0
MKTG-1050	E-Marketing	–	3.0
MKTG-1210	Small Business Marketing	–	3.0
MKTG-2010	Professional Selling	–	3.0
MKTG-2020	Advertising & Promotion Management	–	3.0
BUSN-2060	Corporate Responsibility	–	3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN MARKETING

Career preparation and related courses *(require successful completion of a minimum of 43 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN MARKETING

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MKTG-1010	Principles of Marketing	–	3.0
BUSN-1010	Business Enterprise	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
BCOM-2050	Business Communications	–	4.0
SEMESTER 2			
MGMT-1010	Principles of Management	–	3.0
ACCT-1070	Accounting for Entrepreneurs	–	3.0-4.0
–OR–	–OR–	–	3.0-4.0
ACCT-1080	Principles of Accounting 1	–	3.0-4.0
SEMESTER 3			
BLAW-1080	Business Law 1	–	4.0
MKTG-2060	Consumer Behavior	MKTG-1010	3.0
MKTG-2080	Marketing Research	MKTG-1010 ITCS-1010	3.0
MKTG-2150	Global Marketing	MKTG-1010	3.0
And 3 courses from the following:			–
MKTG-1020	Dynamics of Retailing	–	3.0
MKTG-1050	E-Marketing	–	3.0
MKTG-1210	Small Business Marketing	–	3.0
MKTG-2010	Professional Selling	–	3.0
MKTG-2020	Advertising & Promotion Management	–	3.0
BUSN-2060	Corporate Responsibility	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MKTGCT.html>

See page 20 for Gainful Employment Information.

CERTIFICATE IN ADVERTISING

Career preparation and related courses *(require successful completion of a minimum of 33 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN ADVERTISING

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MKTG-1010	Principles of Marketing	–	3.0
MKTG-2020	Advertising & Promotion Management	–	3.0
BCOM-2050	Business Communications	–	4.0
MKTG-2060	Consumer Behavior	MKTG-1010	3.0
SEMESTER 2			
MACA-1020	Fundamentals of Design	–	4.0
MACA-1055	Digital Layout: Adobe	–	4.0
SEMESTER 3			
MACA-1130	Advertising Art	MACA-1020 , and MACA-1050 or MACA-1055	4.0
MACA-1200 –OR– MACA-1320	Digital Illustration –OR– Introduction to Photoshop	MACA-1050 or MACA-1055	4.0
MACA-2020	Design for Advertising	MACA-1020 and MACA-1050 or MACA-1055, and MACA-1200 or MACA-1320	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MKTGADVCT.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN MARKETING—E-MARKETING

Career preparation and related courses *(require successful completion of a minimum of 17 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN MARKETING—E-MARKETING

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
MKTG-1010	Principles of Marketing	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
MKTG-1050	E-Marketing	–	3.0
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
ITWP-1400	SEO (Search Engine Optimization) for the Web	ITWP-1000	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MKTGEMKTGSK.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN MARKETING—PROFESSIONAL SELLING

Career preparation and related courses *(require successful completion of a minimum of 14 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN MARKETING—PROFESSIONAL SELLING

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
BCOM-2050	Business Communications	–	4.0
SPCH-2100	Interpersonal Communication Relationships	–	4.0
MKTG-2010	Professional Selling	–	3.0
MGMT-1180	Human Relations	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MKTGPSSK.html>

See page 20 for Gainful Employment Information.

Mathematics

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Arts	Mathematics	62	Associate of Science also available

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	Mathematics Department	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	Mathematics Department	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Mathematics program is designed to provide students with the basic competencies, knowledge, and skills essential to transfer to a baccalaureate degree program in Mathematics.

Career Opportunities:

A variety of employment opportunities are attainable upon completion of a 4 year degree in this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF ARTS IN MATHEMATICS

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF ARTS IN MATHEMATICS			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HRS
SEMESTER 1			
MATH-1760	Analytic Geometry & Calculus 1	C or better in MATH-1430 or MATH-1460, or equivalent	4.0
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group IIIA Course	ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, SOSC-1010	–	9.0-12.0
SEMESTER 2			
MATH-1770	Analytic Geometry & Calculus 2	C or better in MATH-1760, or equivalent	4.0
MATH-2000	Introduction to Linear Algebra	C or better in MATH-1760, or equivalent	3.0
Group IB Course: ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
Group IV Course	2 courses from any foreign language –OR– 2 courses from different areas ARTT, ENGL-2###, HUMN, INTL-2000, INTL-2300, MUSC, PHIL	–	8.0-9.0
SEMESTER 3			
MATH-2760	Analytic Geometry & Calculus 3	C or better in MATH-1770 or equivalent	4.0
Group IV Course	2 courses from any foreign language –OR– 2 courses from different areas ARTT, ENGL-2###, HUMN, INTL-2000, INTL-2300, MUSC, PHIL	–	8.0-9.0
Group IIIB Course	Any ANTH, PSYC, SOCY, SOSC-1010	–	9.0-12.0
SEMESTER 4			
MATH-2770	Differential Equations	C or better in MATH-2000 and MATH-2760 or equivalent	4.0
Group IIA/B Course	Any ASTR, BIOL, CHEM, GEOL, ENV5, NATS, PHSA, PHYS	–	6.0-8.0
Group IIIC Course: POLS-1000 –OR– HIST-2100 and HIST-2200	Introduction to American Politics –OR– History of the United States to 1877 –OR– History of the United States Since 1877	–	4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTE:

- Students should take elective courses to meet the minimum requirement of 62 hours required for the Associate of Science degree and that are appropriate to their transfer objective. Some of these courses could be prerequisites for core courses. Students should consult with a counselor, academic advisor or program advisor (586.286.2288 Center Campus or 586.445.7211 South Campus).

Mathematics

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Science	Mathematics	62	Associate of Arts also available

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	Mathematics Department	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	Mathematics Department	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Mathematics program is designed to provide students with the basic competencies, knowledge, and skills essential to transfer to a baccalaureate degree program in Mathematics.

Career Opportunities:

A variety of employment opportunities are attainable upon completion of a 4 year degree in this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF SCIENCE IN MATHEMATICS

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF SCIENCE IN MATHEMATICS			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HRS
SEMESTER 1			
MATH-1760	Analytic Geometry & Calculus 1	Grade C or better in MATH-1430 or MATH-1460, or equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communication 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
SEMESTER 2			
MATH-1770	Analytic Geometry & Calculus 2	Grade C or better in MATH-1760, or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
MATH-2000	Introduction to Linear Algebra	Grade C or better in MATH-1760 or equivalent college course, or an acceptable score on a placement or prerequisite exam	3.0
Group IB Course: ENGL-1190 –OR– ENGL-1220	Communication 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
SEMESTER 3			
MATH-2760	Analytic Geometry & Calculus 3	Grade C or better in MATH-1770 or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 4			
MATH-2770	Differential Equations	Grade C or better in MATH-2000 and MATH-2760 or equivalent college courses	4.0
Group II Course	Any BIOL, CHEM, GEOL, PHYS	–	3.0-6.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0

NOTES:

- Students should take elective courses to meet the minimum requirement of 62 hours required for the Associate of Science degree and that are appropriate to their transfer objective. Some of these courses could be prerequisites for core courses. Students should consult with a counselor, academic advisor or program advisor (586.286.2288 Center Campus or 586.445.7211 South Campus).

Media & Communication Arts—3D Animation

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Media & Communication Arts—3D Animation	78	–
Certificate	Media & Communication Arts—3D Animation	60	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Brian Sauriol	586.445.7435	sauriolb@macomb.edu	South Campus
Professor	Shaun Sarcona	586.445.7435	sarconas@macomb.edu	South Campus

Program Description:

The Media & Communication Arts—3D Animation program specialty provides training in the most powerful character and product animation software in use today. Students learn modeling, texturing, lighting, animating, and rendering techniques that will give them entry-level skills for a variety of positions that are currently defined within the 3D Animation industry.

Career Opportunities:

Media & Communication Arts—3D animation— Associate of Applied Science: Job titles such as Multimedia Artists & Animators are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Media & Communication Arts—3D animation— Certificate: Job titles such as Multimedia Artists & Animators are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—3D ANIMATION**

Career preparation and related courses *(require successful completion of a minimum of 78 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN MEDIA & COMMUNICATION ARTS—3D ANIMATION**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1090	Figure Illustration 1	–	4.0
MACA-1320	Introduction to Photoshop	–	4.0
SEMESTER 2			
MACA-1160	Previsualization	–	4.0
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1400	Introduction to Digital Video	–	4.0
MACA-2510	Introduction to 3D	MACA-1320	4.0
SEMESTER 3			
MACA-1310	Typography & Spacial Development	MACA-1200, MACA 1320, and MACA-1050 or MACA-1055	4.0
MACA-2200	Digital Editing	MACA-1200	4.0
MACA-2250	Compositing & 2D Animatics	MACA-1160, MACA 1200	4.0
MACA-2520	3D Modeling & Rendering	MACA-2510	4.0
SEMESTER 4			
MACA-2530	Advanced 3D Rendering	MACA-2510	4.0
MACA-2540	3D Animation	MACA-2510	4.0
MACA-2550 –OR– MACA-2560	3D Dynamic Simulation –OR– Compositing with After Effects and Nuke	MACA-2510 or permission of instructor –OR– MACA-2510 or permission of instructor	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 5			
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2#### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
MEDIA & COMMUNICATION ARTS—3D ANIMATION**

Career preparation and related courses *(require successful completion of a minimum of 60 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN MEDIA & COMMUNICATION ARTS—3D ANIMATION			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1090	Figure Illustration 1	–	4.0
MACA-1320	Introduction to Photoshop	–	4.0
SEMESTER 2			
MACA-1160	Previsualization	–	4.0
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1400	Introduction to Digital Video	–	4.0
MACA-2510	Introduction to 3D	MACA-1320	4.0
SEMESTER 3			
MACA-1310	Typography & Spacial Development	MACA-1200, MACA 1320, and MACA-1050 or MACA-1055	4.0
MACA-2200	Digital Editing	MACA-1200	4.0
MACA-2250	Compositing & 2D Animatics	MACA-1160, MACA 1200	4.0
MACA-2520	3D Modeling & Rendering	MACA-2510	4.0
SEMESTER 4			
MACA-2530	Advanced 3D Rendering	MACA-1200, MACA 1320, and MACA-1050 or MACA-1055	4.0
MACA-2540	3D Animation	MACA-1040, MACA 1200	4.0
MACA-2550	3D Dynamic Simulation	MACA-2510 or permission of instructor	4.0
–OR–	–OR–	–OR–	
MACA-2560	Compositing with After Effects and Nuke	MACA-2510 or permission of instructor	

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MCA3DCT.html>

See page 20 for Gainful Employment Information.

Media & Communication Arts—Collaborative Media

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Media & Communication Arts—Collaborative Media	86	–
Certificate	Media & Communication Arts—Collaborative Media	68	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Matt Busch	586.445.7435	buschm@macomb.edu	South Campus
Professor	Michael Crumb	586.445.7435	crumbm@macomb.edu	South Campus
Professor	Ron Hood	586.445.7435	hoodr@macomb.edu	South Campus
Professor	Kris Mellebrand	586.445.7435	mellebrandk@macomb.edu	South Campus
Professor	Shawn Sarcona	586.445.7435	sarconas@macomb.edu	South Campus
Professor	Brian Sauriol	586.445.7435	sauriolb@macomb.edu	South Campus
Professor	Bill Soule Jr	586.445.7435	souleb@macomb.edu	South Campus
Professor	Bill Soule Sr	586.445.7435	soulew@macomb.edu	South Campus

Program Description:

The Media & Communication Arts—Collaborative Media program provides training in all Media and Communication Arts specialties. Students learn the basics skills inherent within the specialized fields of illustration, photo imaging, design, Web/interactive, digital video, and animation. This program was designed to offer students a collaborative Associate Degree or Certificate as an overview of the MACA programs.

Career Opportunities:

Media & Communication Arts—Collaborative Media— Associate of Applied Science: Job titles such as Multimedia Artists & Animators and other related specialties are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Media & Communication Arts—Collaborative Media— Certificate: Job titles such as Multimedia Artists & Animators and other related specialties are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—COLLABORATIVE MEDIA**

Career preparation and related courses *(require successful completion of a minimum of 86 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN MEDIA & COMMUNICATION ARTS—COLLABORATIVE MEDIA			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1160	Previsualization	–	4.0
MACA-1320	Introduction to Photoshop	–	4.0
SEMESTER 2			
MACA-1130	Advertising Art	MACA-1020 and MACA-1050 or MACA-1055	4.0
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1400	Introduction to Digital Video	–	4.0
MACA-1720	Web Page Design: Dreamweaver	MACA-1320	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
SEMESTER 3			
MACA-2510	Introduction to 3D	MACA-1320	4.0
MACA-2720	Flash Multimedia 1	MACA-1320	4.0
MACA-2200	Digital Editing	MACA-1200	4.0
SEMESTER 4			
MACA-1310	Typography & Spacial Development	MACA-1200, MACA-1320, and MACA-1050 or MACA-1055	4.0
MACA-2180	Concept Illustration	MACA-1040, MACA-1200	4.0
MACA-2250 –OR– MACA-2570	Compositing & 2D Animatics –OR– Advanced After Effects	MACA-1160, MACA-1200 –OR– MACA-1160, MACA-1200	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 5			
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2#### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
MEDIA & COMMUNICATION ARTS—COLLABORATIVE MEDIA**

Career preparation and related courses *(require successful completion of a minimum of 68 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
MEDIA & COMMUNICATION ARTS—COLLABORATIVE MEDIA**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1160	Previsualization	–	4.0
MACA-1320	Introduction to Photoshop	–	4.0
SEMESTER 2			
MACA-1130	Advertising Art	MACA-1020 and MACA-1050 or MACA-1055	4.0
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1400	Introduction to Digital Video	–	4.0
MACA-1720	Web Page Design: Dreamweaver	MACA-1320	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
SEMESTER 3			
MACA-2510	Introduction to 3D	MACA-1320	4.0
MACA-2720	Flash Multimedia 1	MACA-1320	4.0
MACA-2200	Digital Editing	MACA-1200	4.0
SEMESTER 4			
MACA-1310	Typography & Spacial Development	MACA-1200, MACA 1320, and MACA-1050 or MACA-1055	4.0
MACA-2180	Concept Illustration	MACA-1040, MACA 1200	4.0
MACA-2250	Compositing & 2D Animatics	MACA-1160, MACA 1200	4.0
–OR–	–OR–	–OR–	
MACA-2570	Advanced After Effects	MACA-1160, MACA 1200	

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MCACMCT.html>

See page 20 for Gainful Employment Information.

Media & Communication Arts—Creative Imaging & Illustration

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Media & Communication Arts—Creative Imaging & Illustration	86	–
Certificate	Media & Communication Arts—Creative Imaging & Illustration	68	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Matt Busch	586.445.7435	buschm@macomb.edu	South Campus
Professor	Brian Sauriol	586.445.7435	sauriolb@macomb.edu	South Campus

Program Description:

The Media & Communication Arts—Creative Imaging & Illustration program provides training in both the traditional and digital skill areas of media arts. Advanced illustration and rendering techniques are covered. Students learn how to translate traditional techniques into digital art and imaging applications creating industry ready artwork.

Career Opportunities:

Media & Communication Arts—Creative Imaging & Illustration— Associate of Applied Science: Job titles such as Illustrator, Medical Illustrator, Cartoonist/Comic Illustrator, and Artist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Media & Communication Arts—Creative Imaging & Illustration—Certificate: Job titles such as Illustrator, Medical Illustrator, Cartoonist/Comic Illustrator, and Artist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—CREATIVE IMAGING & ILLUSTRATION**

Career preparation and related courses *(require successful completion of a minimum of 86 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—CREATIVE IMAGING & ILLUSTRATION**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1090	Figure Illustration 1	–	4.0
SEMESTER 2			
MACA-1070	Rendering	–	4.0
MACA-1160	Previsualization	–	4.0
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1320	Introduction to Photoshop	–	4.0
MACA-1310	Typography & Spacial Development	MACA-1200, MACA 1320, and MACA-1050 or MACA-1055	4.0
SEMESTER 3			
MACA-2020	Design for Advertising	MACA-1020 and MACA-1050 or MACA-1055 and MACA-1200 or MACA-1320	4.0
MACA-2176	Painted Illustration	MACA-1040	4.0
MACA-2190	Figure Illustration 2	MACA-1090	4.0
MACA-1400	Introduction to Digital Video	–	4.0
SEMESTER 4			
MACA-2180	Concept Illustration	MACA-1040, MACA-1200	4.0
MACA-2250	Compositing & 2D Animatics	MACA-1160, MACA 1200	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 5			
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
MEDIA & COMMUNICATION ARTS—CREATIVE IMAGING & ILLUSTRATION**

Career preparation and related courses *(require successful completion of a minimum of 68 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN MEDIA & COMMUNICATION ARTS—CREATIVE IMAGING & ILLUSTRATION			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1090	Figure Illustration 1	–	4.0
SEMESTER 2			
MACA-1070	Rendering	–	4.0
MACA-1160	Previsualization	–	4.0
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1320	Introduction to Photoshop	–	4.0
MACA-1310	Typography & Spacial Development	MACA-1200, MACA 1320, and MACA-1050 or MACA-1055	4.0
SEMESTER 3			
MACA-2020	Design for Advertising	MACA-1020 and MACA-1050 or MACA-1055 and MACA-1200 or MACA-1320	4.0
MACA-2176	Painted Illustration	MACA-1040	4.0
MACA-2190	Figure Illustration 2	MACA-1090	4.0
MACA-1400	Introduction to Digital Video	–	4.0
SEMESTER 4			
MACA-2180	Concept Illustration	MACA-1040, MACA-1200	4.0
MACA-2250	Compositing & 2D Animatics	MACA-1160, MACA 1200	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MCACICT.html>

See page 20 for Gainful Employment Information.

Media & Communication Arts—Design & Layout

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Media & Communication Arts—Design & Layout	86	–
Certificate	Media & Communication Arts—Design & Layout	68	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Ron Hood	586.445.7435	hoodr@macomb.edu	South Campus
Professor	Kris Mellebrand	586.445.7435	mellebrandk@macomb.edu	South Campus
Professor	Brian Sauriol	586.445.7435	sauriolb@macomb.edu	South Campus

Program Description:

The Media & Communication Arts—Design & Layout program provides training in various industry standard page layout applications and printing output specifications. Students learn on various hardware platforms such as Mac OS and Windows XP. Vector, raster, and multimedia non-linear based applications are included.

Career Opportunities:

Media & Communication Arts—Design & Layout—Associate of Applied Science: Job titles such as Graphic Designer, Motion Designer, Creative Director, and Art Director, are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Media & Communication Arts—Design & Layout—Certificate: J Job titles such as Graphic Designer, Motion Designer, Creative Director, and Art Director, are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—DESIGN & LAYOUT**

Career preparation and related courses *(require successful completion of a minimum of 86 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN MEDIA & COMMUNICATION ARTS—DESIGN & LAYOUT**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1050	Digital Layout	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
SEMESTER 2			
MACA-1130	Advertising Art	MACA-1020 and MACA-1050 or MACA-1055	4.0
MACA-1160	Previsualization	–	4.0
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1320	Introduction to Photoshop	–	4.0
SEMESTER 3			
MACA-1310	Typography & Spacial Development	MACA-1200, MACA 1320, and MACA-1050 or MACA-1055	4.0
MACA-2020	Design for Advertising	MACA-1020, and MACA-1050 or MACA-1055, and MACA-1200 or MACA-1320	4.0
MACA-2150	Advanced Digital Layout	MACA-1320, MACA 1200 and MACA-1050 or MACA-1055	4.0
MACA-1720	Web Page Design: Dreamweaver	MACA-1320	4.0
SEMESTER 4			
MACA-2200	Digital Editing	MACA-1200	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
MACA-2510	Introduction to 3D	MACA-1320	4.0
MACA-2720	Flash Multimedia 1	MACA-1320	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 5			
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2#### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN MEDIA & COMMUNICATION ARTS—DESIGN & LAYOUT

Career preparation and related courses *(require successful completion of a minimum of 68 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN MEDIA & COMMUNICATION ARTS—DESIGN & LAYOUT

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1050	Digital Layout	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
SEMESTER 2			
MACA-1130	Advertising Art	MACA-1020 and MACA-1050 or MACA-1055	4.0
MACA-1160	Previsualization	–	4.0
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1320	Introduction to Photoshop	–	4.0
SEMESTER 3			
MACA-1310	Typography & Spacial Development	MACA-1200, MACA-1320, and MACA-1050 or MACA-1055	4.0
MACA-2020	Design for Advertising	MACA-1020, and MACA-1050 or MACA-1055, and MACA-1200 or MACA-1320	4.0
MACA-2150	Advanced Digital Layout	MACA-1320, MACA-1200 and MACA-1050 or MACA-1055	4.0
MACA-1720	Web Page Design: Dreamweaver	MACA-1320	4.0
SEMESTER 4			
MACA-2200	Digital Editing	MACA-1200	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
MACA-2510	Introduction to 3D	MACA-1320	4.0
MACA-2720	Flash Multimedia 1	MACA-1320	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MCADLCT.html>

See page 20 for Gainful Employment Information.

Media & Communication Arts—Interactive Web Media

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Media & Communication Arts—Interactive Web Media	82	–
Certificate	Media & Communication Arts—Interactive Web Media	64	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Michael Crumb	586.445.7435	crumbm@macomb.edu	South Campus
Professor	Brian Sauriol	586.445.7435	sauriolb@macomb.edu	South Campus

Program Description:

The Media & Communication Arts—Interactive Web Media program provides training in both Adobe and Macromedia Web Applications. These courses provide skill training in web design, animation and streaming techniques utilized within this industry.

Career Opportunities:

Media & Communication Arts—Interactive Web Media—Associate of Applied Science: Job titles such as Art Director, Graphic Designer, Website Designer, Web Developer, Web Master, and Computer Programmer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Media & Communication Arts—Interactive Web Media—Certificate: Job titles such as Art Director, Graphic Designer, Website Designer, Web Developer, Web Master, and Computer Programmer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

**ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—INTERACTIVE WEB MEDIA**

Career preparation and related courses *(require successful completion of a minimum of 82 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN MEDIA & COMMUNICATION ARTS—INTERACTIVE WEB MEDIA**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1160	Previsualization	–	4.0
SEMESTER 2			
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1320	Introduction to Photoshop	–	4.0
MACA-1400	Introduction to Digital Video	–	4.0
MACA-1310	Typography & Spacial Development	MACA-1200, MACA-1320, and MACA-1050 or MACA-1055	4.0
SEMESTER 3			
MACA-1720	Web Page Design: Dreamweaver	MACA-1320	4.0
MACA-2150	Advanced Digital Layout	MACA-1320, MACA-1200 and MACA-1050 or MACA-1055	4.0
MACA-2720	Flash Multimedia 1	MACA-1320	4.0
MACA-2020	Design for Advertising	MACA-1020 and MACA-1050 or MACA-1055 and MACA-1200 or MACA-1320	4.0
SEMESTER 4			
MACA-2760	Flash Multimedia 2	MACA-2720	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
MACA-2770	Flash Multimedia 3	MACA-1320	4.0
MACA-2800	Advanced Web Media	MACA-2720	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 5			
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
MEDIA & COMMUNICATION ARTS—INTERACTIVE WEB MEDIA**

Career preparation and related courses *(require successful completion of a minimum of 64 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN MEDIA & COMMUNICATION ARTS—INTERACTIVE WEB MEDIA			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1160	Previsualization	–	4.0
SEMESTER 2			
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1320	Introduction to Photoshop	–	4.0
MACA-1400	Introduction to Digital Video	–	4.0
MACA-1310	Typography & Spacial Development	MACA-1200, MACA-1320, and MACA-1050 or MACA-1055	4.0
SEMESTER 3			
MACA-1720	Web Page Design: Dreamweaver	MACA-1320	4.0
MACA-2150	Advanced Digital Layout	MACA-1320, MACA-1200 and MACA-1050 or MACA-1055	4.0
MACA-2720	Flash Multimedia 1	MACA-1320	4.0
MACA-2020	Design for Advertising	MACA-1020 and MACA-1050 or MACA-1055 and MACA-1200 or MACA-1320	4.0
SEMESTER 4			
MACA-2760	Flash Multimedia 2	MACA-2720	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
MACA-2770	Flash Multimedia 3	MACA-1320	4.0
MACA-2800	Advanced Web Media	MACA-2720	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MCAIWACT.html>

See page 20 for Gainful Employment Information.

Media & Communication Arts—Photographic Technologies

Program Options			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Media & Communication Arts—Photographic Technologies	86	–
Certificate	Media & Communication Arts—Photographic Technologies	68	–

Contact Information				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Bill Soule, Jr.	586.445.7435	souleb@macomb.edu	South Campus
Professor	Brian Sauriol	586.445.7435	sauriolb@macomb.edu	South Campus

Program Description:

The Media & Communication Arts—Photographic Technologies program provides skill training in black and white, color, and digital photography. Students learn camera operation and how to capture, process, and print images in a wide variety of formats.

Career Opportunities:

Media & Communication Arts—Photographic Technologies—Associate of Applied Science: Job titles such as Photographer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Media & Communication Arts—Photographic Technologies—Certificate: Job titles such as Photographer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—PHOTOGRAPHIC TECHNOLOGY**

Career preparation and related courses *(require successful completion of a minimum of 86 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—PHOTOGRAPHIC TECHNOLOGY**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1070	Rendering	–	4.0
SEMESTER 2			
MACA-1065	Black & White Photography	–	4.0
MACA-1130	Advertising Art	MACA-1020 and MACA-1050 or MACA-1055	4.0
MACA-1160	Previsualization	–	4.0
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1320	Introduction to Photoshop	–	4.0
SEMESTER 3			
MACA-1310	Typography & Spacial Development	MACA-1200, MACA-1320, and MACA-1050 or MACA-1055	4.0
MACA-1400	Introduction to Digital Video	–	4.0
MACA-2110	Photojournalism	MACA-1010	4.0
MACA-2210	Studio Photography	MACA-1010, MACA-1065	4.0
SEMESTER 4			
MACA-2200	Digital Editing	MACA-1200	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
MACA-2310	Advanced Photographic Techniques	MACA-1010, MACA-1065, MACA-2110, MACA-2210	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 5			
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
MEDIA & COMMUNICATION ARTS—PHOTOGRAPHIC TECHNOLOGY**

Career preparation and related courses *(require successful completion of a minimum of 68 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
MEDIA & COMMUNICATION ARTS—PHOTOGRAPHIC TECHNOLOGY**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1070	Rendering	–	4.0
SEMESTER 2			
MACA-1065	Black & White Photography	–	4.0
MACA-1130	Advertising Art	MACA-1020 and MACA-1050 or MACA-1055	4.0
MACA-1160	Previsualization	–	4.0
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1320	Introduction to Photoshop	–	4.0
SEMESTER 3			
MACA-1310	Typography & Spacial Development	MACA-1200, MACA-1320, and MACA-1050 or MACA-1055	4.0
MACA-1400	Introduction to Digital Video	–	4.0
MACA-2110	Photojournalism	MACA-1010	4.0
MACA-2210	Studio Photography	MACA-1010, MACA-1065	4.0
SEMESTER 4			
MACA-2200	Digital Editing	MACA-1200	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
MACA-2310	Advanced Photographic Techniques	MACA-1010, MACA-1065, MACA-2110, MACA-2210	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MCAPHOTOTEECT.html>

See page 20 for Gainful Employment Information.

Media & Communication Arts—Video Production

Program Options			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Media & Communication Arts—Video Production	83	–
Certificate	Media & Communication Arts—Video Production	65	–

Contact Information				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Brian Sauriol	586.445.7435	sauriolb@macomb.edu	South Campus
Professor	Bill Soule Sr.	586.445.7435	soulew@macomb.edu	South Campus

Program Description:

The Media & Communication Arts–Video Production program provides training in technical and occupational related skills desired by digital video companies. Students learn how to work in a team environment, developing the skills to become a camera and lighting operator, gaffer technician, sound and video editor, and to direct and produce projects within the team. Students will also learn how to verbally communicate within a team environment to develop a concise method of idea gathering and delivery that are both to and from a client’s point of view.

Career Opportunities:

Media & Communication Arts—Video Production—Associate of Applied Science: Job titles such as Film Editor, Producer, and Video Game Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Media & Communication Arts—Video Production—Certificate: Job titles such as Film Editor, Producer, and Video Game Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—VIDEO PRODUCTION**

Career preparation and related courses *(require successful completion of a minimum of 83 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—VIDEO PRODUCTION**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1400	Introduction to Digital Video	–	4.0
MACA-1410	Television/Video Studio Production	–	4.0
SEMESTER 2			
MGMT-1010	Principles of Management	–	3.0
ELEC-1250	Introduction to Audio & Video Technology	–	2.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1160	Previsualization	–	4.0
MACA-1320	Introduction to Photoshop	–	4.0
SEMESTER 3			
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1310	Typography & Spacial Development	MACA-1200, MACA-1320, and MACA-1050 or MACA-1055	4.0
MACA-1420	Film Production 1	MACA-1400	4.0
MACA-2110	Photojournalism	MACA-1010	4.0
SEMESTER 3			
Group IV Course: HUMN-1460	The Film As Art	–	3.0
SEMESTER 4			
MACA-2200	Digital Editing	MACA-1200	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
MACA-2400	Advanced Digital Video	MACA-1400	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 5			
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN MEDIA & COMMUNICATION ARTS—VIDEO PRODUCTION

Career preparation and related courses *(require successful completion of a minimum of 65 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN MEDIA & COMMUNICATION ARTS—VIDEO PRODUCTION			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1010	Introduction to Photography	–	4.0
MACA-1020	Fundamentals of Design	–	4.0
MACA-1040	Illustration Fundamentals	–	4.0
MACA-1400	Introduction to Digital Video	–	4.0
MACA-1410	Television/Video Studio Production	–	4.0
SEMESTER 2			
MGMT-1010	Principles of Management	–	3.0
ELEC-1250	Introduction to Audio & Video Technology	–	2.0
MACA-1055	Digital Layout Adobe	–	4.0
MACA-1160	Previsualization	–	4.0
MACA-1320	Introduction to Photoshop	–	4.0
SEMESTER 3			
MACA-1200	Digital Illustration	MACA-1050 or MACA-1055	4.0
MACA-1310	Typography & Spacial Development	MACA-1200, MACA-1320, and MACA-1050 or MACA-1055	4.0
MACA-1420	Film Production 1	MACA-1400	4.0
MACA-2110	Photojournalism	MACA-1010	4.0
SEMESTER 4			
MACA-2200	Digital Editing	MACA-1200	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
MACA-2400	Advanced Digital Video	MACA-1400	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MCAVPCT.html>

See page 20 for Gainful Employment Information.

Medical Assistant

Program Options				
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES	
Associate of Applied Science	Medical Assistant	67	–	
Certificate	Medical Assistant	59-60	–	

Contact Information				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Professor	Delena Austin	586.286.2194	austind@macomb.edu	Center Campus

Program Description:

The Medical Assistant program is designed to prepare students with the necessary skills and abilities to assist physicians in rendering professional services to patients. Employment may be available in private offices, clinics, hospitals, and federal and public health facilities. Students graduating from the Medical Assistant Certificate program are qualified to sit for the American Association of Medical Assistant's (AAMA) National Certification exam to become a Certified Medical Assistant [CMA (AAMA)]. The CMA (AAMA) credential is awarded to candidates who have successfully completed the CMA (AAMA) examination administered by the Certifying Board of the American Association of Medical Assistants (AAMA). Like other professional designations, the CMA (AAMA) credential is evidence of competence in a demanding field. Certified Medical Assistants [CMA (AAMA)] may benefit from broader career advancement opportunities and job security.

Requirements & Specific Information:

Additional expenses to be met by the student are: (1) a health history and physical examination including diagnostic testing, drug screening and immunizations; (2) uniforms; (3) a wristwatch with a second hand; (4) stethoscope and blood pressure cuff; (5) CPR for the professional rescuer and Standard First Aid certification; (6) hospitalization insurance as neither the hospital nor the college insures the student against accidents or illnesses, and (7) professional liability insurance (highly recommended) during administrative practicum and continuing through clinical practicum.

NOTE: Students must achieve an acceptable mathematics and reading placement test score in order to enter the Medical Assistant program.

All students must apply for their certificate and/or degree and submit the application form to Enrollment Services during the semester the certificate or degree will be earned.

Students must achieve grade "C" or better, or grade "Pass" (if the course is a Pass/Fail course) for all the Core and Arts and Sciences courses in this program.

Career Opportunities:

Medical Assistant–Associate of Applied Science: Job titles such as Medical Assistant and Medical Secretary are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Medical Assistant–Certificate: Job titles such as Medical Assistant and Medical Secretary are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN MEDICAL ASSISTANT

Career preparation and related courses *(require successful completion of a minimum of 67 credit hours)*

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN MEDICAL ASSISTANT

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
BCOM-2050	Business Communications	–	–	4.0
HHSC-1700	Medical Terminology	–	–	3.0
Group III Course: PSYC-1010	Introductory Psychology	–	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
SEMESTER 2				
HLND-1010	Citizen Emergency Preparedness for Medical Assistants	–	MAST-1360, MAST-1400, MAST-1500, MAST-1800	2.0
MAST-1360	Medical Assistant Administration 1	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, and PSYC-1010, all with grade C or better, and an acceptable score on the math and reading placement exams.	HLND-1010, MAST-1400, MAST-1500, MAST-1800	3.0
MAST-1400	Medical Assistant Insurance Forms	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, and PSYC-1010, all with grade C or better.	HLND-1010, MAST-1360, MAST-1500, MAST-1800	3.0
MAST-1500	Basic Practice Finances for Medical Assistants	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, and PSYC-1010; all with grade C or better. Previous computer knowledge is recommended.	HLND-1010, MAST-1360, MAST-1400, MAST-1800	4.0
MAST-1800	Basic Practice Finances for Medical Assistants	Admission into the Medical Assistant program and BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, PSYC-1010, all with grade C or better.	HLND-1010, MAST-1360, MAST-1400, MAST-1500	3.0
SEMESTER 3				
MAST-2300	Medical Assistant Administration Practicum	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010, all with grade C or better	MAST-1150, MAST-1320, MAST-1720, MAST-1730	1.0
MAST-1720	Body Systems 1	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010, all with grade C or better	MAST-1150, MAST-1320, MAST-1730, MAST-2300	3.0
MAST-1730	Body Systems 2	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010, all with grade C or better	MAST-1150, MAST-1320, MAST-1720, MAST-2300	3.0
MAST-1150	Applied Math for Medical Assistants	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010, all with grade C or better	MAST-1320, MAST-1720, MAST-1730, MAST-2300	2.0
MAST-1320	Medical Assistant Laboratory Techniques	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010, all with grade C or better	MAST-1150, MAST-1720, MAST-1730, MAST-2300	4.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN MEDICAL ASSISTANT**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 4				
MAST-1601	Medical Assistant Phlebotomy	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1150, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1720, MAST-1730, MAST-1800, MAST-2300, HLND-1010, and PSYC-1010, all with grade C or better	MAST-1180, MAST-2000	3.0
MAST-1180	Medical Diagnostic Procedure	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1150, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1720, MAST-1730, MAST-1800, MAST-2300, HLND-1010, and PSYC-1010, all with grade C or better.	MAST-1601, MAST-2000	2.0
MAST-2000	Medical Assistant Clinical Skills	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1150, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1720, MAST-1730, MAST-1800, MAST-2300, HLND-1010, and PSYC-1010, all with grade C or better	MAST-1601, MAST-2000	6.0
Group V Course: PHED-2076	Wellness–CPR/AED & First Aid for the Professional Rescuer	–	–	3.0
SEMESTER 5				
MAST-2400	Medical Assistant Clinical Practicum	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, PSYC-1010, MAST-1150, MAST-1180, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1601, MAST-1720, MAST-1730, MAST-1800, MAST-2000, MAST-2300, and HLND-1010; all with grade C or better	–	3.0
Group IV Course: PHIL-2100 –OR– HUMN-1700	Introduction to Ethics –OR– Comparative Religions	–	–	3.0

NOTES:

- Students should select courses that meet degree requirements and that are appropriate to their transfer objective. Core courses can be used to satisfy some of these requirements.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor or advisor to plan your schedule.

CERTIFICATE IN MEDICAL ASSISTANT

Career preparation and related courses *(require successful completion of a minimum of 59 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN MEDICAL ASSISTANT				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
BCOM-2050	Business Communications	–	–	4.0
HHSC-1700	Medical Terminology	–	–	3.0
PSYC-1010	Introductory Psychology	–	–	4.0
ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
SEMESTER 2				
HLND-1010	Citizen Emergency Preparedness for Medical Assistants	–	MAST-1360, MAST-1400, MAST-1500, MAST-1800	2.0
MAST-1360	Medical Assistant Administration 1	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, and PSYC-1010, all with grade C or better, and an acceptable score on the math and reading placement exams.	HLND-1010, MAST-1400, MAST-1500, MAST-1800	3.0
MAST-1400	Medical Assistant Insurance Forms	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, and PSYC-1010, all with grade C or better	HLND-1010, MAST-1360, MAST-1500, MAST-1800	3.0
MAST-1500	Basic Practice Finances for Medical Assistants	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, and PSYC-1010; all with grade C or better. Previous computer knowledge is recommended.	HLND-1010, MAST-1360, MAST-1400, MAST-1800	4.0
MAST-1800	Pharmacology for Health Professionals	Admission into the Medical Assistant program and BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, PSYC-1010, all with grade C or better	HLND-1010, MAST-1360, MAST-1400, MAST-1500	3.0
SEMESTER 3				
MAST-2300	Medical Assistant Administration Practicum	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010, all with grade C or better	MAST-1150, MAST-1320, MAST-1720, MAST-1730	1.0
MAST-1720	Body Systems 1	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010, all with grade C or better	MAST-1150, MAST-1320, MAST-1730, MAST-2300	3.0
MAST-1730	Body Systems 2	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010, all with grade C or better	MAST-1150, MAST-1320, MAST-1720, MAST-2300	3.0
MAST-1150	Applied Math for Medical Assistants	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010 all with grade C or better	MAST-1320, MAST-1720, MAST-1730, MAST-2300	2.0
MAST-1320	Medical Assistant Laboratory Techniques	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010 all with grade C or better	MAST-1150, MAST-1720, MAST-1730, MAST-2300	4.0

**REQUIREMENTS FOR
CERTIFICATE IN MEDICAL ASSISTANT**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 4				
MAST-1601	Medical Assistant Phlebotomy	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1150, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1720, MAST-1730, MAST-1800, MAST-2300, and HLND-1010, PSYC-1010, all with grade C or better	MAST-1180, MAST-2000	3.0
MAST-1180	Medical Diagnostic Procedure	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1150, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1720, MAST-1730, MAST-1800, MAST-2300, and HLND-1010, PSYC-1010, all with grade C or better	MAST-1601, MAST-2000	2.0
MAST-2000	Medical Assistant Clinical Skills	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1150, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1720, MAST-1730, MAST-1800, MAST-2300, and HLND-1010, PSYC-1010, all with grade C or better	MAST-1180, MAST-1601	6.0
PHED-2076	Wellness–CPR/AED & First Aid for the Professional Rescuer	–	–	3.0
SEMESTER 5				
MAST-2400	Medical Assistant Clinical Practicum	BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, PSYC-1010, MAST-1150, MAST-1180, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1601, MAST-1720, MAST-1730, MAST-1800, MAST-2000, MAST-2300, and HLND-1010; all with grade C or better	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MASTCT.html>

See page 20 for Gainful Employment Information.

Molecular Biotechnology

Program Options			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Science	Molecular Biotechnology	62	–

Contact Information				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Molecular Biotechnology program is designed to provide students with the basic competencies, knowledge, and skills requisite to transfer to a baccalaureate degree program and major appropriate for biotechnology or biology.

Career Opportunities:

Molecular Biotechnology–Associate of Science: Job titles such as Medical & Clinical Laboratory Technologist and Biological Technician are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF SCIENCE IN MOLECULAR BIOTECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF SCIENCE IN MOLECULAR BIOTECHNOLOGY			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group II Course: BIOL-1000	General Biology 1	–	4.0
MATH-1460 –OR– MATH-1760	PreCalculus ¹ –OR– Analytic Geometry & Calculus 1 ¹	Grade B or better in MATH-1000, or an equivalent college course, or an acceptable score on a placement or prerequisite exam –OR– Grade C or better in MATH-1430 or MATH-1460, or equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
CHEM-1170	General Chemistry 1 ¹	CHEM-1050 with grade C or better and MATH-1000 proficiency (demonstrated by math placement score, completing MATH-1000 with grade C or better, being enrolled in higher math, or having higher level math on transcript); or a passing score on the American Chemical Society Placement Test	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
BIOL-1010	General Biology ²	BIOL-1000	4.0
CHEM-1180	General Chemistry ²	CHEM-1170 with grade C or better	4.0
BIOL-2540	Biotechnology	BIOL-1000 with grade C or better	4.0
Group I Course: ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 3			
PHYS-1180	College Physics 1	MATH-1000 with grade C or better, or higher level math course, or math placement score	4.0
CHEM-2260	Organic Chemistry 1	CHEM-1180 with grade C or better	4.0
BIOL-2710 –OR– BIOL-2400	Human Physiological Anatomy –OR– General Microbiology ¹	– BIOL-1000 with grade C or better	4.0-6.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
SEMESTER 4			
PHYS-1190	College Physics 2	PHYS-1180 with grade C or better	4.0
CHEM-2270	Organic Chemistry Laboratory (if required)	CHEM-2260 with grade C or better	0.0-2.0
CHEM-2280	Organic Chemistry 2	CHEM-2260 with grade C or better	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0

NOTES:

- ¹ Mathematics and second year Biology options should be chosen based on intended transfer destination.
 - ² Placement test required or CHEM-1160 and MATH-1000 competency as a prerequisite.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group III–V can be taken in any semester.
 - It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Music Performance

Program Options			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Certificate	Music Performance	32.0	–

Contact Information				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Music Performance Certificate is designed to prepare the student for opportunities in music which do not require the traditional degrees.

Career Opportunities:

Music Performance–Certificate: Job titles such as Music Directors & Composers and Musicians are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

CERTIFICATE IN MUSIC PERFORMANCE

Career preparation and related courses *(require successful completion of a minimum of 32 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN MUSIC PERFORMANCE

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
MUSC-1060	Theory 1	Vocal or instrumental experience	MUSC-1160	2.0
MUSC-1160	Ear Training 1	–	MUSC-1060	2.0
MUSC-1260	Piano 1	–	–	2.0
MUSC-1300	Concert Choir	–	–	1.0
Or choose 4 courses from the following:				
MUSC-1351	Jazz Lab Band–Alto Sax	–	–	1.0
MUSC-1352	Jazz Lab Band–Tenor Sax	–	–	
MUSC-1353	Jazz Lab Band–Baritone Sax	–	–	
MUSC-1354	Jazz Lab Band–Trumpet	–	–	
MUSC-1355	Jazz Lab Band–Trombone	–	–	
MUSC-1356	Jazz Lab Band–Electric Bass	–	–	
MUSC-1357	Jazz Lab Band–Drums	–	–	
MUSC-1358	Jazz Lab Band–Guitar	–	–	
MUSC-1359	Jazz Lab Band–Piano	–	–	
And 4 courses from the following:				
MUSC-1801	Applied Music–Piano	–	–	1.0
MUSC-1802	Applied Music–Organ	–	–	
MUSC-1803	Applied Music–Voice	–	–	
MUSC-1804	Applied Music–Brasswinds	–	–	
MUSC-1805	Applied Music–Woodwinds	–	–	
MUSC-1806	Applied Music–Percussion	–	–	
MUSC-1807	Applied Music–Strings	–	–	
MUSC-1808	Applied Music–Classical Guitar	–	–	
SEMESTER 2				
MUSC-1070	Theory 2	MUSC-1060	MUSC-1170	2.0
MUSC-1170	Ear Training 2	MUSC-1160	MUSC-1070	2.0
MUSC-1270	Piano 2	MUSC-1260	–	2.0
SEMESTER 3				
MUSC-2080	Theory 3	MUSC-1070	MUSC-2180	2.0
MUSC-2180	Ear Training 3	MUSC-1170	MUSC-2080	2.0
MUSC-2710 –OR– MUSC-2720	Music History & Literature to 1750 –OR– Music History & Literature Since 1750	–	–	3.0

REQUIREMENTS FOR CERTIFICATE IN MUSIC PERFORMANCE

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
And a minimum of 5 credit hours from the following, not chosen in another semester:				–
MUSC-1090	Jazz Improvisation	MUSC-1060 Theory 1 or basic knowledge of scales and key signatures.	–	2.0
MUSC-1300	Concert Choir	–	–	1.0
MUSC-1351	Jazz Lab Band-Alto Sax	–	–	1.0
MUSC-1352	Jazz Lab Band-Tenor Sax	–	–	1.0
MUSC-1353	Jazz Lab Band-Baritone	–	–	1.0
MUSC-1354	Jazz Lab Band-Trumpet	–	–	1.0
MUSC-1355	Jazz Lab Band-Trombone	–	–	1.0
MUSC-1356	Jazz Lab Band-Electric Bass	–	–	1.0
MUSC-1357	Jazz Lab Band-Drums	–	–	1.0
MUSC-1358	Jazz Lab Band-Guitar	–	–	1.0
MUSC-1359	Jazz Lab Band-Piano	–	–	1.0
MUSC-2710	Music History & Literature to 1750	–	–	3.0
MUSC-2720	Music History & Literature Since 1750	–	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/MUSICCT.html>

See page 20 for Gainful Employment Information.

Nursing

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Nursing	70	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Manager Nursing Program Services	Ann Marie Trzasko	586.286.2293	trzaskoa@macomb.edu	Center Campus

Program Description:

ADMISSION REQUIREMENTS: View Selective Admission for detailed information.

The nursing curriculum is designed to prepare students for licensure as registered nurses (R.N.). Nursing and Arts & Sciences courses are reinforced by directed clinical experiences.

Requirements & Specific Information:

Additional expenses to be met by the student are (1) a health history and physical examination including testing for tuberculosis and other communicable diseases, (2) uniforms, (3) Lab Supplies Pacs (Nurse Pacs), and (4) hospitalization insurance as neither the hospital nor the college insures the student against accidents or illnesses.

Students must achieve grade “C” or better, or grade “Pass” (if the course is a Pass/Fail course) for all the Core and Arts and Sciences courses in this program.

The Michigan Board of Nursing may deny a RN license to an applicant who has been convicted of a crime or is addicted to drugs or alcohol.

The clinical courses of this program are graded with a Pass/Fail grade. The student must receive a Pass grade in the clinical courses.

The Associate of Applied Science degree in Nursing program is approved by the Michigan Board of Nursing, located at the Bureau of Health Professions, 611 W. Ottawa, 4th Floor, P.O. Box 30670, Lansing, MI 48909. The Michigan Board of Nursing’s phone number is 517.335.0918.

Accreditation:

The Associate of Applied Science degree in Nursing program is accredited by the Accreditation Commission for Education in Nursing, Inc. (ACEN) located at 3343 Peachtree Road NE, Suite 850, Atlanta, Georgia 30326. The ACEN’s phone number is 404.975.5000.

Career Opportunities:

Nursing–Associate of Applied Science: Job titles such as Registered Nurse are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN NURSING

Career preparation and related courses *(require successful completion of a minimum of 70 credit hours)*

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN NURSING

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
PRELIMINARY COURSES				
HHSC-1040*	Introduction to the Profession of Nursing	–	–	1.5
Group IA Course: ENGL-1180* –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
Group II Course: BIOL-2710*	Anatomy & Physiology		–	6.0
Group II Course: BIOL-2400* –OR– BIOL-2730	General Microbiology –OR– Pathogenic Microbiology	BIOL-1000	–	4.0
Group II Course: BIOL-1400	Fundamentals of Nutrition	–	–	3.0
Group III Course: PSYC-1010	Introductory Psychology	–	–	4.0
SEMESTER 1				
NURS-1145	Health Assessment in Nursing	Admission into the Nursing program, and ENGL-1180 or ENGL-1210, BIOL-2400 or BIOL-2730, BIOL-1400, BIOL-2710, and HHSC-1040, with grade C or better.	NURS-1155, NURS-1165, NURS-1175	1.5
NURS-1155	Fundamentals of Nursing Practice 1	Admission into the Nursing program, and ENGL-1180 or ENGL-1210, BIOL-2400 or BIOL-2730, BIOL-1400, BIOL-2710, and HHSC-1040, with grade C or better.	NURS-1145, NURS-1165, NURS-1175	1.5
NURS-1165	Introduction to Clinical Nursing Skills	Admission into the Nursing program, and ENGL-1180 or ENGL-1210, BIOL-2400 or BIOL-2730, BIOL-1400, BIOL-2710, and HHSC-1040, with grade C or better.	NURS-1145, NURS-1155, NURS-1175	1.0
NURS-1175	Health Assessment in Nursing Skills	Admission into the Nursing program, and ENGL-1180 or ENGL-1210, BIOL-2400 or BIOL-2730, BIOL-1400, BIOL-2710, and HHSC-1040, with grade C or better.	NURS-1145, NURS-1155, NURS-1165	0.5
NURS-1245	Fundamentals of Nursing Practice 2A	Admission into the Nursing program, NURS-1165, NURS-1175, and NURS-1145, NURS-1155, PSYC-1010, with grade C or better.	NURS-1265	1.5
NURS-1255	Fundamentals of Nursing Practice 2B	Admission into the Nursing program, and NURS-1245 with grade C or better.	NURS-1265	1.5
NURS-1265	Introduction to Clinical Nursing Practice	Admission into the Nursing program, NURS-1165; NURS-1175; and NURS-1145, NURS-1155, PSYC-1010, with grade C or better.	NURS-1245, NURS-1255	1.5

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN NURSING				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 2				
NURS-1345	Introduction to Adult Medical-Surgical Nursing A	Admission into the Nursing program, NURS-1255 with grade C or better; and NURS-1265.	NURS-1365	1.5
NURS-1355	Introduction to Adult Medical-Surgical Nursing B	Admission into the Nursing program, and NURS-1345 with grade C or better.	NURS-1365	1.5
NURS-1365	Introduction to Adult Medical-Surgical Nursing Clinical	Admission into the Nursing program, NURS-1255 with grade C or better; and NURS-1265.	NURS-1345, NURS-1355	2.5
NURS-1446	Psychiatric Mental Health Nursing A	Admission into the Nursing program, NURS-1355 with grade C or better; and NURS-1365.	NURS-1475	2.0
NURS-1456	Psychiatric Mental Health Nursing B	Admission into the Nursing program, and NURS-1446 with grade C or better	NURS-1475	2.0
NURS-1475	Psychiatric Mental Health Nursing Clinical	Admission into the Nursing program, NURS-1355 with grade C or better; and NURS-1365.	NURS-1446, NURS-1456	1.5
SEMESTER 3				
NURS-2146	Childbearing Family Nursing	Admission into the Nursing program, NURS-1456 with grade C or better, and NURS-1475.	NURS-2175	2.0
NURS-2156	Complications of Childbearing Nursing	Admission into the Nursing program and NURS-2146 with grade C or better.	NURS-2175	2.0
NURS-2175	Childbearing Family Nursing Clinical	Admission into the Nursing program, NURS-1456 with grade C or better, and NURS-1475	NURS-2146, NURS-2156	1.5
NURS-2245	Intermediate Adult Medical-Surgical Nursing A	Admission into the Nursing program, NURS-2156 with grade C or better, and NURS-2175.	NURS-2265	1.5
NURS-2255	Intermediate Adult Medical-Surgical Nursing B	Admission into the Nursing program and NURS-2245 with grade C or better	NURS-2265	1.5
NURS-2265	Intermediate Adult Medical-Surgical Nursing Clinical	Admission into the Nursing program, NURS-2156 with grade C or better, and NURS-2175.	NURS-2245, NURS-2255	2.5
Group IV Course: ¹ HUMN-1700 —OR— PHIL-2100	Comparative Religions —OR— Introduction to Ethics	—	—	3.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN NURSING**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 4				
NURS-2346	Childhood Nursing A	Admission into the Nursing program, NURS-2255 with grade C or better, and NURS-2265.	NURS-2375	2.0
NURS-2356	Childhood Nursing B	Admission into the Nursing program and NURS-2346 with grade C or better	NURS-2375	2.0
NURS-2375	Childhood & Family Nursing Clinical	Admission into the Nursing program, and NURS-2255 with a grade of C or better, and NURS-2265	NURS-2346, NURS-2356	1.5
NURS-2445	Transition to Professional Nursing	Admission into the Nursing program, NURS-2356, and HUMN-1700 or PHIL-2100 with grade of C or better, and NURS-2375	NURS-2455, NURS-2465	1.5
NURS-2455	Advanced Adult Medical–Surgical Nursing	Admission into the Nursing program, NURS-2356, and HUMN-1700 or PHIL-2100 with grade of C or better, and NURS-2375	NURS-2445, NURS-2465	1.5
NURS-2465	Integration of Nursing Practice Clinical	Admission into the Nursing program, NURS-2356, and HUMN-1700 or PHIL-2100 with grade of C or better, and NURS-2375	NURS-2445, NURS-2455	3.0
Group V Course ²	PHED-2070 is suggested for students who need CPR certification and PHED-2026 is suggested for students considering a healthcare career.	–	–	2.0-3.0

NOTES:

- * Prerequisites needed to apply to the program.
- ¹ Course may be taken any time prior to or during the program, including the summer semester(s); it must be completed before taking NURS-2445, NURS-2455 and NURS-2465.
- ² Course may be taken any time prior to or during the program, including the summer semester(s); it must be completed prior to completion of your program as it is a degree requirement.
- Students must apply through the selective admission process and be accepted into the nursing program before taking any NURS course.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Occupational Therapy Assistant

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Occupational Therapy Assistant	67	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Phyllis Clements	586.286.2076	clementsp@macomb.edu	Center Campus

Program Description:

ADMISSION REQUIREMENTS: View Selective Admission for detailed information.

The Occupational Therapy Assistant program is designed to prepare students for certification as Certified Occupational Therapy Assistants (COTA). Occupational Therapy Assistant and Arts and Sciences courses are reinforced by supervised clinical fieldwork experiences. The Level II clinical fieldwork must be completed within 18 months of the didactic course work.

The Certified Occupational Therapy Assistant works under the supervision of an Occupational Therapist, Registered (OTR) to provide skilled intervention that assists individuals of all ages with physical, developmental, or psychosocial dysfunction to achieve their optimal performance in daily life skills.

Graduates of the program are prepared to sit for the national certification examination for the Occupational Therapy Assistant administered by the National Board for Certification in Occupational Therapy (NBCOT). The National Board for Certification in Occupational Therapy (NBCOT) may deny certification and credentialing to Occupational Therapy Assistant graduates in violation of ethical and legal standards, including felony convictions.

After successful completion of the NBCOT exam, the individual will be a Certified Occupational Therapy Assistant (COTA). Most states require licensure in order to practice, including Michigan; however, state licenses are usually based on the results of the NBCOT Certification Examination.

Requirements & Specific Information:

Additional expenses to be met by students before entering the first clinical fieldwork experience are (1) a health history and physical examination including testing for tuberculosis and other communicable diseases, (2) uniforms, and (3) hospitalization insurance as neither the clinical agencies nor the college insures the student against accidents or illnesses.

Students must achieve grade “C” or better, or grade “Pass” (if the course is a Pass/Fail course) for all the Core and Arts and Sciences courses in this program.

Accreditation:

The Occupational Therapy Assistant program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) c/o Accreditation Department, American Occupational Therapy Association (AOTA), 4720 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449. AOTA’s phone number is 301.652.AOTA.

Career Opportunities:

Occupational Therapy Assistant–Associate of Applied Science: Job titles such as Occupational Therapy Assistant are attainable upon completion of this course of study, successful passing of the NBCOT exam, and obtaining state licensure. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree in a related field, or a master’s degree required for an occupational therapist, registered, need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

ASSOCIATE OF APPLIED SCIENCE IN OCCUPATIONAL THERAPY ASSISTANT

Career preparation and related courses *(require successful completion of a minimum of 67 credit hours)*

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN OCCUPATIONAL THERAPY ASSISTANT

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
REQUIRED PROGRAM ORIENTATION				
HHSC-1030	Orientation to Occupational Therapy ¹	–	–	1.0
Group II Course:* BIOL-2710	Human Physiological Anatomy	–	–	6.0
Group IA Course:* ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade of C- or better	–	3.0-4.0
Group III Course:* PSYC-1010	Introductory Psychology	–	–	4.0
Group IV Course: PHIL-2100	Introduction to Ethics	–	–	3.0
SEMESTER 1				
Group V Course ¹	PHED-2070 is suggested for students who need CPR certification and PHED-2026 is suggested for students considering a healthcare career	–	–	2.0-3.0
OTAS-1010	Activity Media & Task Analysis	Admission into Occupational Therapy Assistant program and grade of C or better in HHSC-1030, PHIL-2100, ENGL-1210 or ENGL-1180, BIOL-2710, PSYC-1010	OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235	1.5
OTAS-1012	Medical and Professional Language in Occupational Therapy Practice–Lecture	Admission into Occupational Therapy Assistant program and grade of C or better in HHSC-1030, PHIL-2100, ENGL-1210 or ENGL-1180, BIOL-2710, PSYC-1010	OTAS-1010, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235	2.0
OTAS-1110	Mental Health Conditions	Admission into Occupational Therapy Assistant program and grade of C or better in HHSC-1030, PHIL-2100, ENGL-1210 or ENGL-1180, BIOL-2710, PSYC-1010	OTAS-1010, OTAS-1012, OTAS-1210, OTAS-1230, OTAS-1235	3.0
OTAS-1210	Clinical Kinesiology	Admission into Occupational Therapy Assistant program and grade of C or better in HHSC-1030, PHIL-2100, ENGL-1210 or ENGL-1180, BIOL-2710, PSYC-1010	OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235	3.0
OTAS-1230	Introduction to Physical Rehabilitation–Lab	Admission into Occupational Therapy Assistant program and grade of C or better in HHSC-1030, PHIL-2100, ENGL-1210 or ENGL-1180, BIOL-2710, PSYC-1010	OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1235	2.0
OTAS-1235	Human Development and Clinical Interaction	Admission into Occupational Therapy Assistant program and grade of C or better in HHSC-1030, PHIL-2100, ENGL-1210 or ENGL-1180, BIOL-2710, PSYC-1010	OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230	2.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN OCCUPATIONAL THERAPY ASSISTANT**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 2				
OTAS-1300	Rehabilitation Conditions and Intervention Planning–Lecture	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235	OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420	3.0
OTAS-1351	Pediatric Occupational Therapy–Lecture	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235	OTAS-1300, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420	2.0
OTAS-1361	Pediatric Occupational Therapy–Lab	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235	OTAS-1300, OTAS-1351, OTAS-1370, OTAS-1401, OTAS-1420	1.5
OTAS-1370	Therapeutic and Psychosocial Intervention–Lab	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235	OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1401, OTAS-1420	2.0
OTAS-1401	Skills for Occupational Therapy Documentation 1–Lab	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235	OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1420	1.5
OTAS-1420	Professional Behaviors, Communications and Ethics–Lecture	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235	OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401	2.0
OTAS-1450	Level 1 Fieldwork–First Placement	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235	–	1.0
SEMESTER 3				
OTAS-2095	Technology and Environmental Intervention–Lab	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420, OTAS-1450	OTAS-2350, OTAS-2370, OTAS-2402, OTAS-2410, OTAS-2425, OTAS-2450	2.0
OTAS-2350	Productive Aging–Lab	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420, OTAS-1450	OTAS-2095, OTAS-2370, OTAS-2402, OTAS-2410, OTAS-2425, OTAS-2450	2.0
OTAS-2370	Clinical Transition and Service Management	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420, OTAS-1450	OTAS-2095, OTAS-2350, OTAS-2402, OTAS-2410, OTAS-2425, OTAS-2450	2.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN OCCUPATIONAL THERAPY ASSISTANT**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
OTAS-2402	Skills for Occupational Therapy Development II	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420, OTAS-1450	OTAS-2095, OTAS-2350, OTAS-2370, OTAS-2410, OTAS-2425, OTAS-2450	1.5
OTAS-2410	Advanced Physical Rehabilitation—Lecture	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420, OTAS-1450	OTAS-2095, OTAS-2350, OTAS-2370, OTAS-2402, OTAS-2425, OTAS-2450	3.0
OTAS-2425	Advanced Physical Rehabilitation—Lab	Admission into Occupational Therapy Assistant program, and a grade of C or better in OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420, OTAS-1450	OTAS-2095, OTAS-2350, OTAS-2370, OTAS-2402, OTAS-2410, OTAS-2450	2.0
OTAS-2450	Level 1 Fieldwork—Second Placement	Admission into Occupational Therapy Assistant program and a grade C or better in OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420, OTAS-1450	OTAS-2095, OTAS-2350, OTAS-2370, OTAS-2402, OTAS-2410, OTAS-2425	1.0
SEMESTER 4				
OTAS-2580	Level 2 Fieldwork—First Placement	Admission into Occupational Therapy Assistant program and a grade of C or better in OTAS-2095, OTAS-2350, OTAS-2370 OTAS-2402, OTAS-2410, OTAS-2425, OTAS-2450	OTAS-2590	4.0
OTAS-2590	Level 2 Fieldwork—Second Placement	Admission into Occupational Therapy Assistant program	OTAS-2580	4.0

NOTES:

- * Prerequisites needed to apply to the program.
- ¹ It is recommended that the course be taken prior to admission to the occupational therapy assistant program; however, it must be completed prior to completion of the program as it is a degree requirement.
- Students must apply through the selective admission process and be accepted into the occupational therapy assistant program before taking any OTAS course.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 67 total credit hours for the associate degree.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Pastry Arts

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Pastry Arts	65	Designed for entry into the field of Culinary Arts.
Certificate	Pastry Arts	33	Designed for entry-level positions or furthering one's career.
Skill Specific Certificate	Pastry Arts—Assistant Baker	6	Designed for entry-level positions or furthering one's career.

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	David Schneider	586.286.2088	schneiderd@macomb.edu	Center Campus
Professor	Jeffrey Wolf	586.226.4740	wolfj@macomb.edu	Center Campus
Professor	Francois Faloppa	586.226.4776	faloppaf@macomb.edu	Center Campus
Professor	Scott O'Farrell	586.226.4741	ofarrells@macomb.edu	Center Campus

Program Description:

The Associate of Applied Science degree in Pastry Arts program prepares students for careers in pastry shops, hotels and restaurants, country clubs, catering facilities, and institutional food services. Students will learn quality and quantity baking and pastry creations in well-equipped commercial facilities with related work in sanitation, nutrition, food purchasing and storage, and human relations.

Accreditation:

The Associate of Applied Science degree in Pastry Arts program at Macomb is accredited by the American Culinary Federation Education Foundation Accrediting Commission (ACFEFAC). Upon graduation, students may receive American Culinary Federation Certified Pastry Culinarian status.

Career Opportunities:

Pastry Arts—Associate of Applied Science: Job titles such as Bakers, Chefs & Head Cooks, Supervisors of Food Preparation & Serving Workers, and Food Preparation Workers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Pastry Arts—Certificate: Job titles such as Bakers, Chefs & Head Cooks, Supervisors of Food Preparation & Serving Workers, and Food Preparation Workers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Pastry Arts—Assistant Baker—Skill Specific Certificate: Job titles such as Bakers, Chefs & Head Cooks, Supervisors of Food Preparation & Serving Workers, and Food Preparation Workers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN PASTRY ARTS

Career preparation and related courses *(require successful completion of a minimum of 65 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN PASTRY ARTS				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
CULH-1050	Culinary Techniques	–	CULH-1155	4.0
CULH-1155	Sanitation	–	CULH-1050	2.0
CULH-1200	Cost Control	–	–	3.0
CULH-1340	Production Baking	–	CULH-1155	4.0
Group II Course: BIOL-1400	Fundamentals of Nutrition	–	–	3.0
SEMESTER 2				
CULH-1310	Culinary Skills Development	CULH-1050 and CULH-1155 with a grade C or better and a ServSafe certificate	–	4.0
CULH-1400	Supervision	–	–	3.0
CULH-1420	Purchasing	–	–	3.0
CULH-2180	Pastry Arts	CULH-1155 and CULH-1340 with a grade C or better and a ServSafe certificate	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
SEMESTER 3				
CULH-2120	Chocolate Creations	CULH-2180	–	4.0
CULH-2080	Wedding Cakes	CULH-1155 and CULH-1340 with a grade C or better and a ServSafe certificate	–	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	–	2.0-3.0
SEMESTER 4				
CULH-2100	Centerpieces	–	–	4.0
CULH-2160	Plated Desserts	CULH-2180	–	4.0
CULH-2200	Artisan & Special Breads	CULH-1155 and CULH-1340 with a grade C or better and a ServSafe certificate	–	4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	–	3.0-4.0

NOTES:

- The above is a suggested sequence and is based on full-time enrollment.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN PASTRY ARTS

Career preparation and related courses *(require successful completion of a minimum of 33 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN PASTRY ARTS				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
CULH-1050	Culinary Techniques	–	CULH-1155	4.0
CULH-1155	Sanitation	–	CULH-1050	2.0
CULH-1340	Production Baking	–	CULH-1155	4.0
SEMESTER 2				
CULH-1400	Supervision	–	–	3.0
CULH-2180	Pastry Arts	CULH-1155 and CULH-1340 with a grade C or better and a ServSafe certificate	–	4.0
SEMESTER 3				
CULH-2080	Wedding Cakes	CULH-1155 and CULH-1340 with a grade C or better and a ServSafe certificate	–	4.0
CULH-2120	Chocolate Creations	CULH-2180	–	4.0
SEMESTER 4				
CULH-2100	Centerpieces	–	–	4.0
CULH-2160	Plated Desserts	CULH-2180	–	4.0
CULH-2200	Artisan & Special Breads	CULH-1155 and CULH-1340 with a grade C or better and a ServSafe certificate	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/PASTRYARTSCT.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN PASTRY ARTS—ASSISTANT BAKER

Career preparation and related courses *(require successful completion of a minimum of 6 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN PASTRY ARTS—ASSISTANT BAKER				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 1				
CULH-1155	Sanitation	–	–	2.0
CULH-1340	Production Baking	–	CULH-1155	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/PASTRYARTSABSCK.html>

See page 20 for Gainful Employment Information.

Physical Therapist Assistant

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Physical Therapist Assistant	65.5	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Carol Plisner	586.286.2031	plisnerc@macomb.edu	Center Campus

Program Description:

ADMISSION REQUIREMENTS: View Selective Admission for detailed information.

The Physical Therapist Assistant (PTA) curriculum is designed to prepare students to assume positions as skilled technical health workers. A balanced curriculum in general education and specialized courses enables students to develop technical competency necessary to enter this rewarding health career. Correlation of the clinical experience is an integral part of the academic program.

Physical Therapist Assistants work within a physical therapy service under the supervision of professional physical therapists. PTAs assist the physical therapist in performing selected procedures related to the physical management of illness, injury, and wellness throughout the lifespan.

Requirements & Specific Information:

Additional expenses to be met by the student before entering the first clinical placement are: (1) a health history and physical examination including testing for tuberculosis, and (2) hospitalization insurance as neither the hospital nor the College insures the student against accidents or illnesses.

Students must achieve grade “C” or better, or grade “Pass” (if the course is a Pass/Fail course) for all the Core and Arts and Sciences courses in this program.

Accreditation:

The Associate of Applied Science degree in Physical Therapist Assistant program is accredited by the Commission on Accreditation in Physical Therapy Education located at 1111 North Fairfax Street, Alexandria, VA 22314-1488. The phone number is: 800.999.2782.

Career Opportunities:

Physical Therapist Assistant–Associate of Applied Science: Job titles such as Physical Therapist Assistant are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN PHYSICAL THERAPIST ASSISTANT

Career preparation and related courses *(require successful completion of a minimum of 65.5 credit hours)*

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN PHYSICAL THERAPIST ASSISTANT				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
REQUIRED PROGRAM ORIENTATION				
Group II Course: BIOL-2710	Human Physiological Anatomy	–	–	6.0
SEMESTER 1				
HHSC-1020	Physical Therapy Careers	–	–	1.0
Group I Course: ¹ ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
Group III Course: ¹ PSYC-1010	Introductory Psychology	–	–	4.0
PTAS-1020	Physical Therapy Procedures 1–Lecture	Admission into the Physical Therapist Assistant program and BIOL-2710 with grade C or better.	HHSC-1020, PTAS-1031	2.0
PTAS-1031	Physical Therapy Procedures 1–Laboratory	Admission into the Physical Therapist Assistant program and BIOL-2710 with grade C or better	HHSC-1020, PTAS-1070	2.0
PTAS-1070	Joint Structure & Function–Lecture	Admission into the Physical Therapist Assistant program and grade C or better in BIOL-2710	HHSC-1020, PTAS-1081	2.0
PTAS-1081	Joint Structure & Function–Laboratory	Admission into the Physical Therapist Assistant program and BIOL-2710 with grade C or better	HHSC-1020, PTAS-1091	1.5
PTAS-1091	Clinical Medicine for the Physical Therapist Assistant	Admission into the Physical Therapist Assistant program and BIOL-2710 with grade C or better.	HHSC-1020, PTAS-1020	2.0
SEMESTER 2				
Group IV Course ¹	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	–	3.0-4.0
PTAS-1140	Life Span Development for PTA	Admission into the Physical Therapist Assistant program, and HHSC-1020, PTAS-1020, PTAS-1031, PTAS-1070, PTAS-1081, and PTAS-1091 with grade C or better	PTAS-1150	2.0
PTAS-1150	Kinesiology–Lecture	Admission into the Physical Therapist Assistant program, and HHSC-1020, PTAS-1020, PTAS-1031, PTAS-1070, PTAS-1081, and PTAS-1091 with grade C or better	PTAS-1160	3.0
PTAS-1160	Kinesiology–Laboratory	Admission into the Physical Therapist Assistant program, and HHSC-1020, PTAS-1020, PTAS-1031, PTAS-1070, PTAS-1081, and PTAS-1091 with grade C or better	PTAS-1170	1.5
PTAS-1170	Physical Therapy Procedures 2–Lecture	Admission into the Physical Therapist Assistant program, and HHSC-1020, PTAS-1020, PTAS-1031, PTAS-1070, PTAS-1081, and PTAS-1091 with grade C or better	PTAS-1180	2.0

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN PHYSICAL THERAPIST ASSISTANT				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
PTAS-1180	Physical Therapy Procedures 2–Laboratory	Admission into the Physical Therapist Assistant program, and HHSC-1020, PTAS-1020, PTAS-1031, PTAS-1070, PTAS-1081, PTAS-1091 with grade C or better	PTAS-1140	2.0
SEMESTER 3				
Group V Course ¹	Any PHED Wellness course—2000 or above	–	–	2.0-3.0
PTAS-2110	Neuromuscular Physical Therapy–Lecture	Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180	PTAS-2120	2.0
PTAS-2120	Neuromuscular Physical Therapy–Laboratory	Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180	PTAS-2130	1.5
PTAS-2130	Musculoskeletal Physical Therapy–Lecture	Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180	PTAS-2140	2.0
PTAS-2140	Musculoskeletal Physical Therapy–Laboratory	Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180	PTAS-2190	1.5
PTAS-2190	Physical Therapy Procedures 3–Lecture	Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180	PTAS-2200	1.0
PTAS-2200	Physical Therapy Procedures 3–Laboratory	Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180	PTAS-2340	1.0
PTAS-2340	Clinical Internship 1	Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180	PTAS-2350	2.0
PTAS-2350	Clinical Internship 2	Admission into the Physical Therapist Assistant program and PTAS-2340	PTAS-2110	2.0
SEMESTER 4				
PTAS-2440	Rehabilitation Techniques–Lecture	Admission into the Physical Therapist Assistant program, and PTAS-2110, PTAS-2120, PTAS-2130, PTAS-2140, PTAS-2190, PTAS-2200, and PTAS-2350	PTAS-2450	2.0
PTAS-2450	Rehabilitation Techniques–Laboratory	Admission into the Physical Therapist Assistant program, and PTAS-2110, PTAS-2120, PTAS-2130, PTAS-2140, PTAS-2190, PTAS-2200, and PTAS-2350	PTAS-2460	1.5
PTAS-2460	Pediatrics	Admission into the Physical Therapist Assistant program, and PTAS-2110, PTAS-2120, PTAS-2130, PTAS-2140, PTAS-2190, PTAS-2200, and PTAS-2350	PTAS-2470	2.0
PTAS-2470	Cardiopulmonary Rehabilitation	Admission into the Physical Therapist Assistant program, and PTAS-2110, PTAS-2120, PTAS-2130, PTAS-2140, PTAS-2190, PTAS-2200, and PTAS-2350	PTAS-2500	2.0

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN PHYSICAL THERAPIST ASSISTANT				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
PTAS-2500	Seminar for Physical Therapist Assistants	Admission into the Physical Therapist Assistant program; and PTAS-2110, PTAS-2120, PTAS-2130, PTAS-2140, PTAS-2190, PTAS-2200, with grade C or better; and PTAS-2350 with grade Pass	PTAS-2440	2.0
PTAS-2390	Clinical Internship 3	Admission into the Physical Therapist Assistant program, and PTAS-2440, PTAS-2450, PTAS-2460, PTAS-2470, and PTAS-2500	—	4.0

NOTES:

- ¹ It is recommended that the course be taken prior to admission to the physical therapist assistant program; however, it must be completed prior to completion of the program as it is a degree requirement.
- Students must apply through the selective admission process and be accepted into the physical therapist assistant program before taking any PTAS course.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 65 total credit hours for the associate degree.
- Forty (40) hours of volunteer service in a Physical Therapy Department is required prior to any PTAS course.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Pre-Engineering

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Science	Pre-Engineering	64-74	–
Certificate	Pre-Engineering	29-31	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Pre-Engineering program is designed to provide students with the basic competencies, knowledge, and skills requisite to transfer to a baccalaureate degree program in Engineering.

Career Opportunities:

Pre-Engineering–Associate of Science: Job titles such as Electrical & Electronics Engineering Technician, Engineering Technician, and Mechanical Engineering Technician are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Pre-Engineering–Certificate: Job titles such as Engineering Technician and Industrial Machinery Mechanics are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF SCIENCE IN PRE-ENGINEERING

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF SCIENCE IN PRE-ENGINEERING**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group II Course: CHEM-1170	General Chemistry 1	CHEM-1050 with grade C or better and MATH-1000 proficiency (demonstrated by math placement score, completing MATH-1000 with grade C or better, being enrolled in higher math, or having higher level math on transcript); or a passing score on the American Chemical Society Placement Test	4.0
ENGR-1000	Introduction to Engineering	–	3.0
Group II Course: MATH-1760	Analytic Geometry & Calculus 1	Grade C or better in MATH-1430 or MATH-1460 or equivalent college course, or an acceptable score on a placement or prerequisite exam.	4.0
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 2			
PHYS-1180	College Physics 1	MATH-1000 with grade C or better or higher level math course, or math placement score	4.0
CHEM-1180	General Chemistry 2	CHEM-1170 with grade C or better	4.0
MATH-1770	Analytic Geometry & Calculus 2	Grade C or better in MATH-1760, or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group IB Course: ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
SEMESTER 3			
PHYS-2220	Analytical Physics 1	PHYS-1180 with grade C or better, or passing score on the Physics Area Placement Test and MATH-1760 with grade C or better	5.0
MATH-2000	Introduction to Linear Algebra	Grade C or better in MATH-1760 or equivalent college course, or an acceptable score on a placement or prerequisite exam	3.0
MATH-2760	Analytic Geometry & Calculus 3	Grade C or better in MATH-1770 or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
Group III Course: ECON-1160	Principles of Economics 1	–	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF SCIENCE IN PRE-ENGINEERING			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 4			
MATH-2770	Differential Equations	Grade C or better in MATH-2000 and MATH-2760 or equivalent college courses	4.0
Group II Course: PHYS-2230	Analytical Physics 2	PHYS-2220 with grade C or better and MATH-1760 with grade C or better	5.0
Group III Course	ANTH, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
–	Engineering Computer Elective OR Additional Science Elective	See transfer guide for individual four-year institution requirements	3.0-4.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group III–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

CERTIFICATE IN PRE-ENGINEERING

Career preparation and related courses *(require successful completion of a minimum of 29 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN PRE-ENGINEERING			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C or better	3.0-4.0
MATH-1760	Analytic Geometry & Calculus 1	Grade C or better in MATH-1430 or MATH-1460, or equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
PHYS-1180	College Physics 1	MATH-1000 with grade C or better or higher level math course, or math placement score	4.0
ENGR-1000	Introduction to Engineering	–	3.0
SEMESTER 2			
ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
MATH-1770	Analytic Geometry & Calculus 2	Grade C or better in MATH-1760, or an equivalent college course, or an acceptable score on a placement or prerequisite exam	4.0
PHYS-2220	Analytical Physics 1	PHYS-1180 with grade C or better or passing score on the Physics Area Placement Test and MATH-1760 with grade C or better	5.0
ECON-1160	Principles or Economics 1	–	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/PREEGRCT.html>

See page 20 for Gainful Employment Information.

Pre-Medical Studies

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Science	Pre-Medical Studies	62	–
Certificate	Pre-Medical Studies	26.0-28.0	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Pre-Medical Studies program is designed to provide students with the basic competencies, knowledge, and skills requisite to transfer to a baccalaureate degree program and major appropriate for premedical studies. Popular transfer majors include biology, chemistry, and biochemistry. Students are advised to consult with an academic advisor when selecting options and elective course work in order to tailor their program for the appropriate transfer destination.

Career Opportunities:

Pre-Medical Studies–Associate of Science: Job titles such as Medical and Clinical Laboratory Technician are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Pre-Medical Studies–Certificate: Job titles such as Medical and Clinical Laboratory Technician are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 **Transfer Resource Guide**

ASSOCIATE OF SCIENCE IN PRE-MEDICAL STUDIES

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF SCIENCE IN PRE-MEDICAL STUDIES			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group II Course: BIOL-1000	General Biology 1	–	4.0
Group II Course: CHEM-1170	General Chemistry 1	CHEM-1050 with grade C or better and MATH-1000 proficiency (demonstrated by math placement score, completing MATH-1000 with grade C or better, being enrolled in higher math, or having higher level math on transcript); or a passing score on the American Chemical Society Placement Test	4.0
Group II Course: MATH-1460 –OR– MATH-1760	Precalculus ¹ –OR– Analytic Geometry & Calculus 1 ¹	Grade B or better in MATH-1000 or an equivalent college course or an acceptable score on a placement or prerequisite exam –OR– Grade C or better in MATH-1430 or MATH-1460 or equivalent college course, or an acceptable score on a placement or prerequisite exam.	4.0
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
BIOL-1010	General Biology 2	BIOL-1000 with grade C or better	4.0
CHEM-1180	General Chemistry 2	CHEM-1170 with grade C or better	4.0
Group IB Course: ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
Group III Course: PSYC-1010	Introductory Psychology	–	4.0
SEMESTER 3			
CHEM-2260	Organic Chemistry 1	CHEM-1180 with grade C or better	4.0
BIOL-2400	General Microbiology	BIOL-1000 with grade C or better	4.0
PHYS-1180	College Physics 1	MATH-1000 with grade C or better or higher level math course, or math placement score	4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC	–	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF SCIENCE IN PRE-MEDICAL STUDIES			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 4			
CHEM-2270	Organic Chemistry Laboratory ² (if required)	CHEM-2260 with grade C or better	0.0-2.0
CHEM-2280	Organic Chemistry 2	CHEM-2260 with grade C or better	4.0
PHYS-1190	College Physics 2	PHYS-1180 with grade C or better	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- ¹ Mathematics option should be chosen based on intended transfer destination.
 - ² This course may be required based on the transfer institution you plan to attend.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Group III–V can be taken in any semester.
 - It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
PRE-MEDICAL STUDIES**

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

CERTIFICATE IN PRE-MEDICAL STUDIES			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
BIOL-1000	General Biology 1	–	4.0
CHEM-1170	General Chemistry 1	CHEM-1050 with grade C or better and MATH-1000 proficiency (demonstrated by math placement score, completing MATH-1000 with grade C or better, being enrolled in higher math, or having higher level math on transcript); or a passing score on the American Chemical Society Placement Test	4.0
MATH-1460 –OR– MATH-1760	Precalculus ¹ –OR– Analytic Geometry & Calculus 1 ¹	Grade B or better in MATH-1000 or an equivalent college course or an acceptable score on a placement or prerequisite exam –OR– Grade C or better in MATH-1430 or MATH-1460 or equivalent college course, or an acceptable score on a placement or prerequisite exam.	4.0
ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
BIOL-1010	General Biology 2	BIOL-1000 with grade C or better	4.0
ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
PSYC-1010	Introductory Psychology	–	4.0
SEMESTER 3			
CHEM-2260	Organic Chemistry 1	CHEM-1180 with grade C or better	4.0
BIOL-2400	General Microbiology	BIOL-1000 with grade C or better	4.0
PHYS-1180	College Physics 1	MATH-1000 with grade C or better or higher level math course, or math placement score	4.0
SEMESTER 4			
CHEM-2270	Organic Chemistry Laboratory ² (if required)	CHEM-2260 with grade C or better	0.0–2.0
CHEM-2280	Organic Chemistry 2	CHEM-2260 with grade C or better	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/PREMEDCT.html>

See page 20 for Gainful Employment Information.

Notes:

- ¹ Mathematics option should be chosen based on intended transfer destination
- ² This course may be required based on the transfer institution you plan to attend

Pre-Social Work

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Arts	Pre-Social Work	62	Designed to transfer to a Bachelor of Social Work (BSW) program

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Associate of Arts degree in Pre-Social Work program is designed to provide students with the basic competencies, knowledge, and skills needed to transfer to a Bachelor of Social Work (BSW) degree program. Completion of a BSW provides the minimum credential required to pursue licensure and entry level employment. The Masters Degree in Social Work (MSW) has become the standard for meaningful and gainful employment as a professional social worker.

Career Opportunities:

Pre-Social Work–Associate of Arts–Job titles such as Social & Human Service Assistant are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF ARTS IN PRE-SOCIAL WORK

Career preparation and related courses *(require successful completion of a minimum of 62 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF ARTS IN PRE-SOCIAL WORK**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C or better.	3.0-4.0
Group IIIA Course: And 1 history course from the following:			–
HIST-1500	Western Civilization to 1648	–	3.0-4.0
HIST-1600	Western Civilization Since 1648		
HIST-1700	The World Since 1945		
HIST-2360	Changing of America, 1945 to Present		
Group IIIB Course: SOCY-1010	Principles of Sociology		4.0
Group IIIB Course: SOCY-1210	Introduction to Social Work		4.0
SEMESTER 2			
Group IB Course: ENGL-1190 –OR– ENGL-1220	Communications 2 –OR– Composition 2	ENGL-1180 or ENGL-1210	3.0-4.0
PSYC-1010	Introductory Psychology	–	4.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH-1000 or above, NATS, PHSA,PHYS	See pre-requisite for specific course	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 3			
Group IIB Course: BIOL-1000	General Biology 1	–	4.0
And 1 literature course from the following:			–
ENGL-2610	Introduction to Prose Fiction	ENGL-1220 or ENGL-1190	3.0
ENGL-2710	American Literature: Colonial to 1865	ENGL-1220 or ENGL-1190	
ENGL-2720	American Literature: 1865 to 1920	ENGL-1220 or ENGL-1190	
ENGL-2730	American Literature: 1920 to Present	ENGL-1220 or ENGL-1190	
ENGL-2800	World Literature to 1400	ENGL-1220 or ENGL-1190	
ENGL-2810	World Literature From 1400	ENGL-1220 or ENGL-1190	
ENGL-2850	Shakespeare Survey	ENGL-1220 or ENGL-1190	
INTL-2000 –OR– INTL-2300	Introduction to Latin America –OR– Introduction to Japan	–	4.0
SEMESTER 4			
PHIL-2100	Introduction to Ethics	–	3.0
POLS-1000	Introduction to American Politics	–	4.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- Select elective courses based on your transfer college/university.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Product Development

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Product Development	65	–
Certificate	Product Development–CAD (Computer Aided Design)	29	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Harry Buhalis	586.445.7450	buhalish@macomb.edu	South Campus
Professor	Jim Carlson	586.445.7473	carlsonj@macomb.edu	South Campus

Program Description:

The Product Development program is designed to provide the knowledge and skills required for entry-level positions in a variety of design environments. The program focuses on the development of both technical and professional proficiencies. The curriculum includes industrial processes and materials, rapid-prototyping, computer-aided design, applied problem solving skills, and presentation techniques.

Career Opportunities:

Product Development–Associate of Applied Science: Job titles such as Product Designer and Industrial Designer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Product Development–CAD (Computer Aided Design)–Certificate: Job titles such as Product Designer and Industrial Designer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
PRODUCT DEVELOPMENT**

Career preparation and related courses *(require successful completion of a minimum of 65 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN PRODUCT DEVELOPMENT**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
PRDE-1010	Design Principles	–	4.0
PRDE-1200	Theory of Sheet Metal Fabrication	–	3.0
PRDE-1300	Industrial & Materials Processes	–	4.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
PRDE-1400	Introduction to SolidWorks & 3D Parametric Solid Modeling	PRDE-1010 or PRDE-1250	3.0
ATMT-1150	Machine Theory–Machine Tool Laboratory 1	–	3.0
PRDE-1520	NX Fundamentals	PRDE-1010 or PRDE-1250	4.0
PRDE-1620	CATIA Essentials	PRDE-1010 or PRDE-1250	4.0
SEMESTER 3			
ATAP-1050	CNC Essentials	–	3.0
PRDE-2100	Design Intent & Analysis	–	3.0
PRDE-2400	Plastics Design & Manufacturing	–	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
SEMESTER 4			
PRDE-2000	Product Development Process	–	3.0
PRDE-2200	Jig & Fixture Detailing & Design	PRDE-1410 or PRDE-1450 or PRDE-1520 or PRDE-1620 or consent of advisor; and PRDE-1300	3.0
PRDE-2430	Student Capstone Project	PRDE-2100	4.0
Elective	Any PRDE, ATAP, ELEC, MECT, ATWD, RNEW, OR ROBO	–	3.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups II–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
PRODUCT DEVELOPMENT—CAD (COMPUTER AIDED DESIGN)**

Career preparation and related courses *(require successful completion of a minimum of 29 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN PRODUCT DEVELOPMENT—CAD (COMPUTER AIDED DESIGN)			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
PRDE-1400	Introduction to SolidWorks & 3D Parametric Solid Modeling	PRDE-1010 or PRDE-1250	3.0
PRDE-1520	NX Fundamentals	PRDE-1010 or PRDE-1250	4.0
SEMESTER 2			
DRCG-1140	Interactive Computer Graphics—Introduction to 2D & 3D AutoCAD	—	4.0
PRDE-1410	SolidWorks: Components & Assemblies	PRDE-1400	3.0
PRDE-1620	CATIA Essentials	PRDE-1010 or PRDE-1250	4.0
SEMESTER 3			
PRDE-1450	AutoCAD: Detailing & Assemblies	DRCG-1140	3.0
PRDE-2520	NX Advanced	PRDE-1520	4.0
PRDE-2620	CATIA Advanced	PRDE-1620	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/PRDECADCT.html>

See page 20 for Gainful Employment Information.

Radiologic Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Radiologic Technology	65	Prepares students for the technical and clinical program components leading to an Associate of Applied Science in Radiologic Technology.

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Administrative Assistant	Barbara Resseguie	586.226.4760	resseguieb@macomb.edu	Center Campus

Program Description:

The Radiologic Technology program is designed to ensure that entry level radiologic technologists possess the essential technical and clinical skills expected by employers of radiographers and ensure that graduates of the program are prepared to successfully pass the certification examination offered by the American Registry of Radiologic Technology.

Requirements & Specific Information:

Macomb Community College will prepare students by providing the necessary prerequisite and general education courses needed to be admitted to hospital clinical teaching programs to complete the clinical and technical components of the AAS degree. Upon notification of successful completion of the hospital clinical teaching component, students will be granted 30 semester credits. This along with completion of all pre-requisite courses and general education courses will allow students to apply for graduation with an Associate of Applied Science in Radiologic Technology and make them eligible to take the certification examination offered by the American Registry of Radiologic Technology to become certified radiologic technologists.

Career Opportunities:

To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN RADIOLOGIC TECHNOLOGY

Career preparation and related courses *(require successful completion of a minimum of 65 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN RADIOLOGIC TECHNOLOGY

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
NOTE: The courses below must be for college credit. After the completion of the hospital component of the program, students will be granted a block of 30 credits in radiologic technology and be eligible for an Associate of Applied Science in Radiologic Technology and eligible to apply for certification as Radiologic Technologists.			–
HHSC 1700	Medical Terminology	–	3.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
Group I Course: ENGL-1180	Communications 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	4.0
Group II Course: BIOL-2710	Human Physiological Anatomy	–	6.0
Group II Course: PHSA-1050	Physical Science	–	4.0
Group II Course: MATH 1000	Intermediate Algebra	Grade C or better in MATH-0070 or an equivalent college course, or an acceptable score on a placement exam or prerequisite exam	4.0
Group III Course: PSYC-1010	Introductory Psychology	–	4.0
Group IV Course: PHIL-2100	Introduction to Ethics	–	3.0
Group V Course: PHED-2070 –OR– PHED-2076	Wellness Focus Prevention, Intervention, Treatment of Disease, Illness & Injury –OR– Wellness: CPR/AED & First Aid for the Professional Rescuer	–	3.0
30 semester credits granted upon successful completion of hospital component of program			30.0

NOTES:

- The preliminary courses are needed to apply to the program.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

Reciprocal Programs

With Oakland Community College Royal Oak/Southfield Campus Only

- Diagnostic Medical Sonography
- Hospital Pharmacy Technology
- Radiologic Technology

Macomb Community College and Oakland Community College have established reciprocal arrangements for the Diagnostic Medical Sonography (DMS), Hospital Pharmacy Technology (HPT), and Radiologic Technology (RAD) programs. Although the specialized courses for the program are given at Oakland Community College, students who complete specific prerequisite courses at Macomb Community College are eligible to participate in this reciprocal arrangement. This means that upon completion of the prerequisite courses at Macomb and acceptance into Oakland Community College’s Diagnostic Medical Sonography (DMS), Hospital Pharmacy Technology (HPT), or Radiologic Technology (RAD) program, the student will take all the DMS, HPT, or RAD courses at Oakland and will pay the “in-district” tuition to Oakland Community College.

NOTE: In order to participate in this reciprocal payment arrangement, the student must be considered an in-district (live in Macomb County) MCC student. YOU MUST SUBMIT A LETTER OF APPLICATION to Macomb’s HEALTH & HUMAN SERVICES DEPARTMENT prior to December 1 of the year admission is desired if you plan to be completed with the prerequisite courses.

For further information regarding the Diagnostic Medical Sonography (DMS), Hospital Pharmacy Technology (HPT), or Radiologic Technology (RAD) programs, please contact:

OAKLAND COMMUNITY COLLEGE	MACOMB COMMUNITY COLLEGE
Southfield Campus	Charlene McPeak, C/O Barbara Resseguie
Health Programs	Health Science Technology, CC-R163
22322 Rutland Drive, Southfield, MI 48075	44575 Garfield Road, Clinton Township, MI 48038
248.233.2917	586.226.4760

Renewable Energy Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Certificate	Renewable Energy Technology	20	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Lisa Richter	586.445.7191	richterl@macomb.edu	South Campus

Program Description:

This certificate provides the knowledge and skills required for positions involving the integration of renewable energy applications in a variety of business and industrial environments. The certificate focuses on a “holistic” approach, emphasizing the importance of scientific principles coupled with industrial processes, professional proficiencies, and practical laboratory experiences.

Requirements & Specific Information:

As the Renewable Energy field emerges, the Renewable Energy Technology certificate is designed to complement several existing program paths including but not limited to Associate Degrees in Automated Systems Technology—Mechatronics, Maintenance Technology, Manufacturing Technology, Building Construction Technology, Electronic Engineering Technology, Architectural Technology, Business, Environmental Science, and others. The Renewable Energy certificate is not intended as a stand-alone certificate. Students are highly recommended to complement the above degree programs with the Renewable Energy Technology certificate to increase employability skills.

Career Opportunities:

Renewable Energy Technology –Certificate: Job titles such as Solar Photovoltaic Installers, Wind Turbine Service Technician, Energy Auditors/Sustainability Specialists, Solar Energy Installation Managers, and Energy Broker are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**CERTIFICATE IN
RENEWABLE ENERGY TECHNOLOGY**

Career preparation and related courses *(require successful completion of a minimum of 20 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
RENEWABLE ENERGY TECHNOLOGY**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
RNEW-1000	Introduction to Energy	–	3.0
RNEW-1020	Introduction to Sustainability	–	3.0
RNEW-1010	Renewable Energy Concepts	–	3.0
SEMESTER 2			
RNEW-1800	Energy Management Fundamentals	–	4.0
And a minimum of 7 credit hours from the following:			–
ATBC-1700	Green Building–Design & Construction–Commercial	–	3.0
AUTO-1440	Hybrid Electric Vehicle Fundamentals	AUTO-1000, AUTO-1010, AUTO-1030, AUTO-1320, and AUTO-1400	3.0
AUTO-2440	Hybrid Electric Vehicle Power Management	AUTO-1440	2.0
RNEW-1100	Principles of Wind Energy	–	2.0
RNEW-1110	Wind Energy Lab	–	1.0
RNEW-1200	Principles of Solar Energy	–	2.0
RNEW-1210	Solar Energy Lab	–	1.0
RNEW-1300	Principles of Biomass Technology	–	2.0
RNEW-1310	Biomass Technology Lab	–	1.0
RNEW-1400	Principles of Geothermal Energy	–	2.0
RNEW-1500	Principles of Hydrogen Fuel Cell Technology	–	4.0
RNEW-2000	Renewable Energy Power Systems	RNEW-1100 and RNEW-1200	3.0
RNEW-2200	Photovoltaic Design & Installation	RNEW-2000	3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/RNEWCT.html>

See page 20 for Gainful Employment Information.

Respiratory Therapy

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Respiratory Therapy	73	Enables the student to develop the technical competencies necessary to enter this paramedical specialty.

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Mary Alstead	586.286.2150	alsteadm@macomb.edu	Center Campus

Program Description:

ADMISSION REQUIREMENTS: View Selective Admission for detailed information.

The respiratory care practitioner supports the physician in the care of patients suffering from cardiopulmonary disease. A balanced program in general education and specialized courses enables the student to develop the technical competencies necessary to enter this paramedical specialty.

Requirements & Specific Information:

The program begins once each year in the fall semester. The first year is spent in the modern lecture and lab facilities at Macomb, where students are exposed to the newest technology and equipment. The second year combines lecture and lab with about 900 hours of clinical training at area hospitals and home health care agencies.

Additional expenses to be met by the student before entering RSPT-1260 include (1) a health and physical examination including testing for tuberculosis and other communicable diseases, (2) uniforms and supplies, (3) hospitalization insurance as neither the hospital nor the college insures the student against accidents or illnesses, and (4) a criminal background check and drug screen.

Students must achieve grade “C” or better, or grade “Pass” (if the course is a Pass/Fail course) for all the Core and Arts and Sciences courses in this program.

Respiratory Therapists in Michigan are required to pass the Certification Examination provided by the National Board for Respiratory Care (www.NBRC.org) and to obtain a license issued by the State of Michigan (www.mi.gov/mdch). Employment opportunities for qualified respiratory therapists are excellent. Administrative, educational, and clinical positions may be available to the registered Respiratory Therapist.

Program Admission: The steps for application to this program and the program admission requirements are described in detail in the Selective Admissions Packet available online (keyword search “Selective Admission”) or in the enrollment services office. A person may be considered for admission to the Respiratory Therapy Program if they meet the academic prerequisites and are able to perform the essential functions of a registered respiratory therapist, referred to as “Essential Functions for the RSPT Student”, with or without reasonable accommodation. More information about the Equal Opportunity/Affirmative action policies of the college can be found in the General Information section of the Catalog.

Special Admission Procedure for Certified Respiratory Therapy Technicians: Students who have successfully completed the Certification Examination of the National Board for Respiratory Care for Entry-Level Respiratory Therapy Practitioners (CRT) may apply for admission to the Advance Standing program. A letter indicating your interest in this program must be submitted to the Program Coordinator prior to July 1. Students are admitted for the fall semester based upon the availability of clinical sites for internship. Information regarding this program and the admission procedure can be obtained by contacting the Program Coordinator at 586.286.2150 (Center Campus).

Accreditation:

This Associate of Applied Science degree in Respiratory Therapy is accredited by the Commission on Accreditation for Respiratory Care (CoARC), 1248 Harwood Road, Bedford, TX 76021-4244. CoARC’s phone number is 817.283.2835 and fax number is 817.354.8519.

Career Opportunities:

Respiratory Therapy –Associate of Applied Science: Job titles such as Respiratory Therapist Assistant are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN RESPIRATORY THERAPY

Career preparation and related courses *(require successful completion of a minimum of 73 credit hours)*

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN RESPIRATORY THERAPY				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
PRELIMINARY COURSES				
Group II Course: BIOL-2400 –OR– BIOL-2730 –AND– BIOL-2710	General Microbiology* –OR– Pathogenic Microbiology* –AND– Human Physiological Anatomy*	BIOL-1000 – –	–	4.0-6.0
SEMESTER 1				
RSPT-1050	Clinical Cardiorespiratory Physiologic Anatomy	Admission into the Respiratory Therapy program, and grade C or better in BIOL-2710, and BIOL-2730 or BIOL-2400	RSPT-1060, RSPT-1081, RSPT-1090	4.0
RSPT-1060	Physiochemical Basis of Respiratory Therapy	Admission into the Respiratory Therapy program, and grade C or better in BIOL-2710, and BIOL-2730 or BIOL-2400	RSPT-1050, RSPT-1081, RSPT-1090	3.0
RSPT-1081	Respiratory Therapy Procedures 1–Lecture	Admission into the Respiratory Therapy program and grade C or better in BIOL-2710 and BIOL-2730 or BIOL-2400	RSPT-1050, RSPT-1060, RSPT-1090	3.0
RSPT-1090	Respiratory Therapy Procedures 1–Laboratory	Admission into the Respiratory Therapy program, and grade C or better in BIOL-2710, and BIOL-2730 or BIOL-2400	RSPT-1050, RSPT-1060, RSPT-1081	2.0
Group I Course: ¹ ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C–or better	–	3.0-4.0

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN RESPIRATORY THERAPY				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 2				
RSPT-1111	Respiratory Therapy Procedures 2—Lecture	Admission into the Respiratory Therapy program, and grade C or better in RSPT-1050, RSPT-1060, RSPT-1081, and RSPT-1090	RSPT-1120, RSPT-1140, RSPT-1200, RSPT-1210	3.0
RSPT-1120	Respiratory Therapy Procedures 2—Laboratory	Admission into the Respiratory Therapy program, and grade C or better in RSPT-1050, RSPT-1060, RSPT-1081, and RSPT-1090	RSPT-1111, RSPT-1140, RSPT-1200, RSPT-1210	4.0
RSPT-1140	Cardiopulmonary Pathology	Admission into the Respiratory Therapy program, and grade C or better in RSPT-1050, RSPT-1060, RSPT-1081, and RSPT-1090	RSPT-1111, RSPT-1120, RSPT-1200, RSPT-1210	3.0
RSPT-1200	Cardiopulmonary Pharmacology	Admission into the Respiratory Therapy program; and grade C or better in RSPT-1050, RSPT-1060, RSPT-1081, and RSPT-1090	RSPT-1111, RSPT-1120, RSPT-1140	1.5
RSPT-1210	Pediatric/Neonatal Respiratory Care	Admission into the Respiratory Therapy program, and grade C or better in RSPT-1200	RSPT-1111, RSPT-1120, RSPT-1140	1.5
Group III Course ¹	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSC (PSYC-1010 is recommended)	–	–	4.0
SEMESTER 3				
RSPT-1260	Clinical Internship 1 ²	Admission into the Respiratory Therapy program and RSPT-1111 and RSPT-1120 and RSPT-1140 and RSPT-1200 and RSPT-1210, with grade C or better	–	4.0
Group IV Course ¹	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN (PHIL-2100 or HUMN-1700 is recommended)	–	–	3.0-4.0
SEMESTER 4				
RSPT-2250	Clinical Internship 2	Admission into the Respiratory Therapy program and RSPT-1260	RSPT-2331, RSPT-2341, RSPT-2350	2.0
RSPT-2260	Clinical Internship 3	Admission into the Respiratory Therapy program and RSPT-2250	RSPT-2331, RSPT-2341, RSPT-2350	2.0
RSPT-2331	Mechanical Ventilation—Lecture	Admission into the Respiratory Therapy program and RSPT-1260	RSPT-2250, RSPT-2260, RSPT-2341, RSPT-2350	3.0
RSPT-2341	Mechanical Ventilation—Laboratory	Admission into the Respiratory Therapy program and RSPT-1260	RSPT-2250, RSPT-2260, RSPT-2331, RSPT-2350	2.0
RSPT-2350	Acid-Base & Electrolyte Balance & Advanced Diagnostics	Admission into the Respiratory Therapy program and RSPT-1260	RSPT-2250, RSPT-2260, RSPT-2331, RSPT-2341	3.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN RESPIRATORY THERAPY**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 5				
RSPT-2360	Clinical Internship 4	Admission into the Respiratory Therapy program; and RSPT-2260; and grade C or better in RSPT-2331, RSPT-2341, and RSPT-2350	RSPT-2420, RSPT-2431	2.0
RSPT-2370	Clinical Internship 5	Admission into the Respiratory Therapy program and RSPT-2360	RSPT-2420, RSPT-2431	2.0
RSPT-2420	Advanced Concepts In Respiratory Care	Admission into the Respiratory Therapy program; and RSPT-2260; and grade C or better in RSPT-2331, RSPT-2341, and RSPT-2350.	RSPT-2360, RSPT-2370, RSPT-2431	3.0
RSPT-2431	Certification & Registry Review	Admission into the Respiratory Therapy program; RSPT-2260; and grade C or better in RSPT-2331, RSPT-2341, and RSPT-2350	RSPT-2360, RSPT-2370, RSPT-2420	3.0
Group V Course ¹	Any PHED-2000 level course—PHED-2076 is recommended for students who need American Heart Association (AHA) CPR certification	-	-	2.0-3.0

NOTES:

- ¹ Course may be taken any time prior to or during the program, including the summer semester; it must be completed prior to the completion of your program in order to graduate.
 - ² Competency in arithmetic and basic algebra is needed. Consider taking MATH-0050 or 0070 if your score on the pre-algebra section of COMPASS was less than 35.
- * Prerequisites must be completed prior to the selective admission deadline of February 15 in order to be considered for admission to the program. Biology classes must have been completed within 10 years of the start of this program.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I-V) are needed as well as a minimum of 62 total credit hours for the associate degree.
 - It is strongly recommended that you work with a counselor, advisor or department coordinator.
 - Competency in arithmetic and basic algebra is needed. Consider taking MATH-0050 or 0070 if your score on the pre-algebra section of COMPASS was less than 35.
 - RSPT-1260 is the summer course where time will be divided between classroom, laboratory, and clinical time.
 - ITML-1000 Microcomputer Literacy is recommended for students lacking basic computer skills.
 - HHSC-1700, Medical Terminology, may also be helpful to the respiratory therapy student.

Restaurant Management

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate Applied Science	Restaurant Management	67	Designed for transferring into a Bachelor of Business Administration program or entry into the field of Restaurant Management.

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	David Schneider	586.286.2088	schneiderd@macomb.edu	Center Campus
Professor	Jeffrey Wolf	586.226.4740	wolfj@macomb.edu	Center Campus
Professor	Francois Faloppa	586.226.4776	faloppaf@macomb.edu	Center Campus
Professor	Scott O'Farrell	586.226.4741	ofarrells@macomb.edu	Center Campus

Program Description:

The Restaurant Management program prepares students for technical and managerial careers in restaurants and institutional food service operations. Students learn basic kitchen operations as well as business law, marketing, management, and information technology.

Graduates have employment opportunities to start as assistant managers at food service related operations or to start their own food service related business.

Career Opportunities:

Restaurant Management –Associate of Applied Science: Job titles such as Food Service Managers and Line Supervisors of Food Preparation & Serving Workers are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN RESTAURANT MANAGEMENT

Career preparation and related courses *(require successful completion of a minimum of 67 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN RESTAURANT MANAGEMENT

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
CULH-1050	Culinary Techniques	–	4.0
CULH-1155	Sanitation	–	2.0
CULH-1200	Cost Control	–	3.0
MKTG-1010	Principles of Marketing	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENG-0050 or EAPP-1500 with grade C or better	3.0-4.0
SEMESTER 2			
ITCS-1010	Computer & Information Processing Principles	–	4.0
CULH-1255	Table Service	–	3.0
CULH-1310	Culinary Skills Development	CULH-1050 and CULH-1155 with grade C or better and ServSafe Certificate	4.0
CULH-1400	Supervision	–	3.0
SEMESTER 3			
Group III Course	Any ANTH, ECON, GEOG, HIST, INTL-2010, INTL-2500, INTL-2700, POLS, PSYC, SOCY, SOSOC	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 4			
CULH-1420	Purchasing	–	3.0
CULH-1440	Beverage Service	–	2.0
ACCT-1050 –OR– ACCT-1080	Financial Record Keeping –OR– Principles of Accounting 1	– –	3.0-4.0
MGMT-1150 –OR– MGMT-1210	Personnel & Human Resource Management –OR– Entrepreneurship & Small Business Management	ACCT-1050, ACCT-1070 or ACCT-1080	3.0
Group II Course: BIOL-1400	Fundamentals of Nutrition	–	3.0
SEMESTER 5			
BLAW-1080	Business Law 1	–	4.0
CULH-1430	Menu Planning	CULH-1200	3.0
CULH-2015	A la Carte Dining	CULH-1155, CULH-1255, and CULH-1310	4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN		3.0-4.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.
- Please see related programs in Culinary Arts, Hospitality Management and Pastry Arts.

Speech Communication Arts—Intercultural/Interpersonal Communication

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Speech Communication Arts—Intercultural/Interpersonal Communication	72	–
Certificate	Speech Communication Arts—Intercultural/Interpersonal Communication	58	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Speech Communication Arts program prepares students either to transfer to a four-year institution or to assume entry-level positions in communication and related fields. Students complete Arts and Sciences requirements and eight Career Preparation and Related Courses. They then select one of four tracks to specialize in: Intercultural/Interpersonal, Mass Media, Public Relations, or Presentation.

Requirements & Specific Information:

SPCH-2850—Speech Communication Capstone Course is taken during the last semester of the major or the certificate program, the course will assist the student in preparing the professional portfolio and will give the student information and assistance in developing a resume/interview. In addition, the course will give students assistance as they prepare to transfer. At the last session, the instructor will invite potential local employers.

Career Opportunities:

Speech Communication Arts—Intercultural/Interpersonal Communication— Associate of Applied Science: Job titles such as Public Relations Specialist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Speech Communication Arts—Intercultural/Interpersonal Communication— Certificate: Job titles such as Public Relations Specialist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
SPEECH COMMUNICATION ARTS—INTERCULTURAL/INTERPERSONAL COMMUNICATION**

Career preparation and related courses *(require successful completion of a minimum of 72 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
SPEECH COMMUNICATION ARTS—INTERCULTURAL/INTERPERSONAL COMMUNICATION**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group IB Course: SPCH-1060	Speech Communication	–	3.0
SPCH-2100	Interpersonal Communication Relationships	–	4.0
SPCH-1400	Mass Media Communication in a Global Culture	–	3.0
BUSN-2100	International Business	–	3.0
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
SPCH-1200	Group Discussion & Leadership	–	3.0
SPCH-1300	Voice & Speech Improvement Communication	–	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING–OR–LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
SEMESTER 3			
SPCH-2300	Intercultural Communication	–	4.0
SPCH-1800	Broadcast Video	SPCH-1460	4.0
SPCH-2110	Persuasion	SPCH-1060	3.0
SPCH-2600	Public Relations Communications	SPCH-1060–OR–BCOM-2050	4.0
SEMESTER 4			
SPCH-2550	Argumentation Debate	SPCH-1060	3.0
SPCH-2850	Speech Communication Capstone Course	Registered Speech Communication major with 35 hours in SPCH courses and consent of Program Advisor	1.0
SPCH-2700	Change, Conflict & Crisis Communication	–	4.0
Group III Course: POLS-1000 –OR– PSYC-1010 –OR– POLS-1600 –OR– GEOG-2000	Introduction to American Politics –OR– Introductory Psychology –OR– International Politics –OR– World Regional Geography	– – POLS-1000 –	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
SPEECH COMMUNICATION ARTS—INTERCULTURAL/INTERPERSONAL COMMUNICATION**

Career preparation and related courses *(require successful completion of a minimum of 58 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN SPEECH COMMUNICATION ARTS—INTERCULTURAL/INTERPERSONAL COMMUNICATION			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
SPCH-1060	Speech Communication	–	3.0
SPCH-2100	Interpersonal Communication Relationships	–	4.0
SPCH-1400	Mass Media Communication in a Global Culture	–	3.0
POLS-1000	Introduction to American Politics	–	4.0
PSYC-1010	Introductory Psychology	–	4.0
BUSN-2100	International Business	–	3.0
SEMESTER 2			
SPCH-1200	Group Discussion & Leadership	–	3.0
SPCH-1300	Voice & Speech Improvement Communication	–	3.0
POLS-1600	International Politics	POLS-1000	3.0
SEMESTER 3			
SPCH-2300	Intercultural Communication	–	4.0
SPCH-1800	Broadcast Video	SPCH-1460	4.0
SPCH-2110	Persuasion	SPCH-1060	3.0
SPCH-2600	Public Relations Communication	SPCH-1060–OR–BCOM-2050	4.0
SEMESTER 4			
SPCH-2550	Argumentation Debate	SPCH-1060	4.0
SPCH-2850	Speech Communication Capstone Course	Registered Speech Communication major with 35 hours in SPCH courses and consent of Program Advisor	1.0
SPCH-2700	Change, Conflict & Crisis Communication	–	4.0
GEOG-2000	World Regional Geography	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/SPCHCAINTCOMCT.html>

See page 20 for Gainful Employment Information.

Speech Communication Arts—Mass Media

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Speech Communication Arts—Mass Media	69	—
Certificate	Speech Communication Arts—Mass Media	57	—

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	—	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	—	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Speech Communication Arts program prepares students either to transfer to a four-year institution or to assume entry-level positions in communication and related fields. Students complete Arts and Sciences requirements and eight Career Preparation and Related Courses. They then select one of four tracks to specialize in: Intercultural/Interpersonal, Mass Media, Public Relations, or Presentation.

Career Opportunities:

Speech Communication Arts—Mass Media—Associate of Applied Science: Job titles such as Public Relations Specialist and Advertising Sales Agent are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Speech Communication Arts—Mass Media—Certificate: Job titles such as Public Relations Specialist and Advertising Sales Agent are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
SPEECH COMMUNICATION ARTS—MASS MEDIA**

Career preparation and related courses *(require successful completion of a minimum of 69 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN SPEECH COMMUNICATION ARTS—MASS MEDIA**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group IB Course: SPCH-1060	Speech Communication	–	3.0
SPCH-2100	Interpersonal Communication Relationships	–	4.0
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING–OR–LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 2			
SPCH-1200	Group Discussion & Leadership	–	3.0
SPCH-1400	Mass Media Communication in a Global Culture	–	3.0
SPCH-1460	Introduction to Broadcasting	–	3.0
BUSN-2100	International Business	–	3.0
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group III Course: POLS-1000 –OR– PSYC-1010 –OR– POLS-1600	Introduction to American Politics –OR– Introductory Psychology –OR– International Politics	– – POLS-1000	3.0-4.0
SEMESTER 3			
SPCH-1300	Voice & Speech Improvement Communication	–	3.0
SPCH-1490	Broadcast Radio	SPCH-1460	2.0
SPCH-1700	Broadcast Television	SPCH-1460	4.0
ELEC-1250	Introduction to Audio & Video Technology	–	2.0
SEMESTER 4			
SPCH-1480	Broadcast Announcing	SPCH-1460	3.0
SPCH-1800	Broadcast Video	SPCH-1460	4.0
SPCH-2300	Intercultural Communication	–	4.0
POLS-1101	Politics in Film, Music & Political Art-Contemporary Political Issues	–	3.0
HUMN-1460	The Film as Art	–	3.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN SPEECH COMMUNICATION ARTS—MASS MEDIA**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 5			
MACA-1410	Television/Video Studio Production	–	4.0
SPCH-2550	Argumentation Debate	SPCH-1060	4.0
SPCH-2850	Speech Communication Capstone Course	Registered Speech Communication major with 35 hours in SPCH courses and consent of Program Advisor	1.0
SPCH-2800	Interpretative Performance Communication	–	4.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
SPEECH COMMUNICATION ARTS—MASS MEDIA**

Career preparation and related courses *(require successful completion of a minimum of 57 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
SPEECH COMMUNICATION ARTS—MASS MEDIA**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
SPCH-1060	Speech Communication	–	3.0
SPCH-1400	Mass Media Communication in a Global Culture	–	3.0
SPCH-1460	Introduction to Broadcasting	–	3.0
SPCH-2100	Interpersonal Communication Relationships	–	4.0
POLS-1101	Politics in Film, Music & Political Art-Contemporary Political Issues	–	3.0
SEMESTER 2			
SPCH-1200	Group Discussion & Leadership	–	3.0
SPCH-1300	Voice & Speech Improvement Communication	–	3.0
SPCH-1700	Broadcast Television	SPCH-1460	4.0
ELEC-1250	Introduction to Audio & Video Technology	–	2.0
SEMESTER 3			
SPCH-2300	Intercultural Communication	–	4.0
SPCH-1480	Broadcast Announcing	SPCH-1460	3.0
SPCH-1800	Broadcast Video	SPCH-1460	4.0
MACA-1410	Television/Video Studio Production	–	4.0
SEMESTER 4			
SPCH-2550	Argumentation Debate	SPCH-1060	4.0
SPCH-2850	Speech Communication Capstone Course	Registered Speech Communication major with 35 hours in SPCH courses and consent of Program Advisor	1.0
SPCH-2800	Interpretative Performance Communication	–	4.0
SPCH-1490	Broadcast Radio	SPCH-1460	2.0
HUMN-1460	The Film as Art	–	3.0

Speech Communication Arts—Presentation

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Speech Communication Arts—Presentation	73	–
Certificate	Speech Communication Arts—Presentation	55	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Speech Communication Arts—Presentation program prepares students either to transfer to a four-year institution or to assume entry-level positions in communication and related field. Students complete Arts and Sciences requirements and eight Career Preparation and Related Courses. They then select one of four tracks to specialize in: Intercultural/Interpersonal, Mass Media, Public Relations, or Presentation.

Career Opportunities:

Speech Communication Arts—Presentation—Associate of Applied Science: Job titles such as Public Relations Specialist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Speech Communication Arts—Presentation—Certificate: Job titles such as Public Relations Specialist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
SPEECH COMMUNICATION ARTS—PRESENTATION**

Career preparation and related courses *(require successful completion of a minimum of 73 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN SPEECH COMMUNICATION ARTS—PRESENTATION**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group IB Course: SPCH-1060	Speech Communication	–	3.0
SPCH-2100	Interpersonal Communication Relationships	–	4.0
SPCH-1400	Mass Media Communication in a Global Culture	–	3.0
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
SEMESTER 2			
SPCH-1200	Group Discussion & Leadership	–	3.0
SPCH-1300	Voice & Speech Improvement Communication	–	3.0
SPCH-1460	Introduction to Broadcasting	–	3.0
SPCH-1480	Broadcast Announcing	SPCH-1460	3.0
SPCH-1490	Broadcast Radio	SPCH-1490	2.0
Group II Course	Any ASTR, BIOL, CHEM, ENVS, GEOL, MATH, NATS, PHS, PHYS	–	2.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 3			
SPCH-2300	Intercultural Communication	–	4.0
SPCH-1700	Broadcast Television	SPCH-1460	4.0
SPCH-2110	Persuasion	SPCH-1060	3.0
MKTG-2010	Professional Selling	–	3.0
SPCH-2600	Public Relations Communication	SPCH-1060–OR–BCOM-2050	4.0
SEMESTER 4			
SPCH-2550	Argumentation Debate	SPCH-1060	4.0
SPCH-2850	Speech Communication Capstone Course	Registered Speech Communication major with 35 hours in SPCH courses and consent of Program Advisor.	1.0
SPCH-2700	Change, Conflict, & Crisis Communication	–	4.0
SPCH-2800	Interpretative Performance Communication	–	4.0
Group III Course: POLS-1000 –OR– PSYC-1010 –OR– POLS-1600 –OR– GEOG-2000	Introduction to American Politics –OR– Introductory Psychology –OR– International Politics –OR– World Regional Geography	– – POLS-1000 –	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING–OR–LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
SPEECH COMMUNICATION ARTS—PRESENTATION**

Career preparation and related courses *(require successful completion of a minimum of 55 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN SPEECH COMMUNICATION ARTS—PRESENTATION			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
SPCH-1060	Speech Communication	–	3.0
SPCH-2100	Interpersonal Communication Relationships	–	4.0
SPCH-1400	Mass Media Communication in a Global Culture	–	3.0
SPCH-1460	Introduction to Broadcasting	–	3.0
SEMESTER 2			
SPCH-1200	Group Discussion & Leadership	–	3.0
SPCH-1300	Voice & Speech Improvement Communication	–	3.0
SPCH-2110	Persuasion	SPCH-1060	3.0
SPCH-1480	Broadcast Announcing	SPCH-1460	3.0
SPCH-1490	Broadcast Radio	SPCH-1460	2.0
SEMESTER 3			
SPCH-2300	Intercultural Communication	–	4.0
SPCH-1700	Broadcast Television	SPCH-1460	4.0
MKTG-2010	Professional Selling	–	3.0
SPCH-2600	Public Relations Communication	SPCH-1060–OR–BCOM-2050	4.0
SEMESTER 4			
SPCH-2550	Argumentation Debate	SPCH-1060	4.0
SPCH-2850	Speech Communication Capstone Course	Registered Speech Communication major with 35 hours in SPCH courses and consent of Program Advisor.	1.0
SPCH-2700	Change, Conflict, & Crisis Communication	–	4.0
SPCH-2800	Interpretative Performance Communication	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/SPCHCAPRESCT.html>

See page 20 for Gainful Employment Information.

Speech Communication Arts—Public Relations

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Speech Communication Arts—Public Relations	66	–
Certificate	Speech Communication Arts—Public Relations	51-52	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Associate Dean	–	586.286.2282	AandS.center@macomb.edu	Center Campus
Associate Dean	–	586.445.7354	AandS.south@macomb.edu	South Campus

Program Description:

The Speech Communication Arts program prepares students either to transfer to a four-year institution or to assume entry-level positions in communication and related fields. Students complete Arts and Sciences requirements and eight Career Preparation and Related Courses.

Career Opportunities:

Speech Communication Arts—Public Relations—Associate of Applied Science: Job titles such as Public Relations Specialist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Speech Communication Arts—Public Relations—Certificate: Job titles such as Public Relations Specialist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor's degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
SPEECH COMMUNICATION ARTS—PUBLIC RELATIONS**

Career preparation and related courses *(require successful completion of a minimum of 66 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN
SPEECH COMMUNICATION ARTS—PUBLIC RELATIONS**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
Group IB Course: SPCH-1060	Speech Communication	–	3.0
SPCH-2100	Interpersonal Communication Relationships	–	4.0
SPCH-1400	Mass Media Communication in a Global Culture	–	3.0
Group IA Course: ENGL-1180 –OR– ENGL-1210	Communications 1 –OR– Composition 1	Placement, –OR– ENGL 0050 –OR– EAPP 1500 with grade C or better	3.0-4.0
Group IV Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING –OR– LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	–	3.0-4.0
SEMESTER 2			
SPCH-1200	Group Discussion & Leadership	–	3.0
SPCH-1300	Voice & Speech Improvement Communication	–	3.0
SPCH-1460	Introduction to Broadcasting	–	3.0
SPCH-2300	Intercultural Communication	–	4.0
Group II Course	Any ASTR, BIOL, CHEM, ENV5, GEOL, MATH, NATS, PHSA, PHYS	–	2.0-4.0
Group V Course	Any PHED Wellness course—2000 or above	–	2.0-3.0
SEMESTER 3			
SPCH-2110	Persuasion	SPCH-1060	3.0
SPCH-2600	Public Relations Communication	SPCH-1060 –OR– BCOM-2050	4.0
JOUR-1100	Writing News for Publication	–	3.0
POLS-1101	Politics in Film, Music & Art-Contemporary Political Issues	–	3.0
MKGT-1010 –OR– MGMT-1010	Principles of Marketing –OR– Principles of Management	–	3.0
SEMESTER 4			
SPCH-2550	Argumentation Debate	SPCH-1060	4.0
SPCH-2850	Speech Communication Capstone Course	Registered Speech Communication major with 35 hours in SPCH courses and consent of Program Advisor.	1.0
SPCH-2700	Change, Conflict, & Crisis Communication	–	4.0
SPCH-2800	Interpretative Performance Communication	–	4.0
Group III Course: POLS-1000 –OR– PSYC-1010 –OR– POLS-1600 –OR– GEOG-2000	Introduction to American Politics –OR– Introductory Psychology –OR– International Politics –OR– World Regional Geography	– – POLS-1000 –	3.0-4.0

NOTES:

- A minimum of 18 credit hours of Arts & Sciences courses (Groups I–V) are needed as well as a minimum of 62 total credit hours for the associate degree. Arts & Sciences Groups I–V can be taken in any semester.
- It is strongly encouraged that you work with a counselor, advisor or faculty/department coordinator to plan your schedule.

**CERTIFICATE IN
SPEECH COMMUNICATION ARTS—PUBLIC RELATIONS**

Career preparation and related courses *(require successful completion of a minimum of 51 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN SPEECH COMMUNICATION ARTS—PUBLIC RELATIONS			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
SPCH-1060	Speech Communication	–	3.0
SPCH-2100	Interpersonal Communication Relationships	–	4.0
SPCH-1400	Mass Media Communication in a Global Culture	–	3.0
SEMESTER 2			
SPCH-1200	Group Discussion & Leadership	–	3.0
SPCH-1300	Voice & Speech Improvement Communication	–	3.0
SPCH-1460	Introduction to Broadcasting	–	3.0
SEMESTER 3			
SPCH-2300	Intercultural Communication	–	4.0
SPCH-2110	Persuasion	SPCH-1060	3.0
SPCH-2600	Public Relations Communication	SPCH-1060–OR–BCOM-2050	4.0
JOUR-1100	Writing News for Publication	–	3.0
POLS-1101	Politics in Film, Music & Art—Contemporary Political Issues	–	3.0
MKGT-1010 –OR– MGMT-1010	Principles of Marketing –OR– Principles of Management	– –	3.0
SEMESTER 4			
SPCH-2550	Argumentation Debate	SPCH-1060	4.0
SPCH-2850	Speech Communication Capstone Course	Registered Speech Communication major with 35 hours in SPCH courses and consent of Program Advisor	1.0
BCOM-2050 –OR– BCOM-2070	Business Communications –OR– Technical Business Communications and Project Management	BCOM-2050	3.0-4.0
SPCH-2700	Change, Conflict, & Crisis Communication	–	4.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/SPCHCAPRCT.html>

See page 20 for Gainful Employment Information.

Surgical Technology

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Surgical Technology	72	Provides graduates entry-level skills in surgical technology.
Certificate	Surgical Technology–Surgical Technologist	65-66	Enables the student to perform a variety of duties as well as provide technical support to the surgical team.
Skill Specific Certificate	Surgical Technology–Central Processing Distribution Technician	21	Provides students with the fundamental of central processing, supply and distribution of hospital instrumentation, supplies and equipment.

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Elizabeth Ness	586.286-2192	ness@macomb.edu	Center Campus

Program Description:

ADMISSION REQUIREMENTS: View Selective Admission for detailed information.

The Associate of Applied Science degree in Surgical Technology, and the Certificate in Surgical Technology–Surgical Technologist are Selective Admissions programs. The one-semester Skill Specific Certificate in Surgical Technology–Central Processing Distribution Technician is NOT a Selective Admissions program.

The Surgical Technology program is set up in a clinical career ladder fashion providing students employment opportunities and career growth while continually working toward a degree in higher education. The first opportunity is the certificate in Central Processing Distribution Technician. The second opportunity for students accepted into the Surgical Technology program is the Certificate in Surgical Technology. The third opportunity for students accepted into the Surgical Technology program is the Associate of Applied Science degree in Surgical Technology.

The goal of the Associate of Applied Science degree in Surgical Technology is to provide graduates entry-level skills in surgical technology. These skills will prepare students for immediate access to the job market and provide a foundation for the baccalaureate degree in allied health or a related field. Professional preparation is developed through the use of both didactic and practice learning activities in the classroom, practice laboratories, and clinical experiences.

Requirements & Specific Information:

Students must achieve grade “C” or better, or grade “Pass” (if the course is a Pass/Fail course) for all the Core and Arts and Sciences courses in this program.

Students must have their Health History Form (physical examination), TB, and Hepatitis Series/Titers on file in the Health & Human Services Department BEFORE starting the program. Students must show proof of health insurance and current BLS/CPR certification, and have drug testing performed.

Accreditation:

The Associate of Applied Science degree in Surgical Technology and the Certificate In Surgical Technology - Surgical Technologist, programs are accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 1361 Park Street, Clearwater, FL 33756, 702.210.2350, on recommendation of the Accreditation Review Council on Education in Surgical Technology and Surgical Assisting (ARC/STSA), 6 West Dry Creek Circle, Suite 110, Littleton, CO 80120, 303.694.9262.

Career Opportunities:

Surgical Technology— Associate of Applied Science: Job titles such as Surgical Technologist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Surgical Technology— Central Processing Distribution Technician—Skill Specific Certificate: Job titles such as Surgical Technologist are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Surgical Technology— Surgical Technologist—Certificate: Job titles such as Surgical Assistant are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN SURGICAL TECHNOLOGY				
Career preparation and related courses <i>(require successful completion of a minimum of 72 credit hours)</i>				
CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN SURGICAL TECHNOLOGY				
COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
PRELIMINARY COURSES				
HHSC-1700	Medical Terminology*	–	–	3.0
Group I Course: ENGL-1180 –OR– ENGL-1210	Communications 1* –OR– Composition 1*	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
Group II Course: BIOL-2400 –OR– BIOL-2730 –AND– BIOL-2710	General Microbiology* –OR– Pathogenic Microbiology* –AND– Human Physiological Anatomy*	– BIOL-1000 –	–	4.0 4.0 6.0
Proof of current American Heart Association (AHA) / BLS Health Provider Certification*				
SEMESTER 1				
SURG-1050	Introduction to Surgical Technology ¹	BIOL-2400 or BIOL-2730, and HHSC-1700, all with grade C or better	SURG-1060, SURG-1070	2.0
SURG-1060	Orientation to Central Processing Distribution Technician ¹	BIOL-2400 or BIOL-2730, and HHSC-1700, all with grade C or better	SURG-1050, SURG-1070	4.0
SURG-1070	Central Processing Distribution Technician Clinical ¹	BIOL-2400 or BIOL-2730, and HHSC-1700, all with grade C or better	SURG-1050, SURG-1060	8.0

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN SURGICAL TECHNOLOGY**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 2				
SURG-1051	Introduction to Surgical Patient Care Techniques	Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and current proof of American Heart Association (AHA)/BLS Health Provider Certification.	SURG-1200, SURG-1250, SURG-1260	2.0
SURG-1200	Surgical Clinical 1	Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and current proof of American Heart Association (AHA)/BLS Health Provider Certification.	SURG-1051, SURG-1250, SURG-1260	8.0
SURG-1250	Surgical Specialties 1	Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and current proof of American Heart Association (AHA)/BLS Health Provider Certification.	SURG-1051, SURG-1200, SURG-1260	4.0
SURG-1260	Surgical Pharmacology	Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; and BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and current proof of American Heart Association (AHA)/BLS Health Provider Certification.	SURG-1051, SURG-1200, SURG-1250	3.0
SEMESTER 3				
SURG-1300	Surgical Clinical 2	Admission into the Surgical Technology program, and SURG-1051, SURG-1200, SURG-1250, and SURG-1260	SURG-1350, SURG-1360	8.0
SURG-1350	Surgical Specialties 2	Admission into the Surgical Technology program, and SURG-1051, SURG-1200, SURG-1250, and SURG-1260	SURG-1300, SURG-1360	4.0
SURG-1360	Surgical Seminar	Admission into the Surgical Technology program, and SURG-1051, SURG-1200, SURG-1250, and SURG-1260	SURG-1300, SURG-1350	3.0
SEMESTER 4				
Group III Course: ¹ PSYC-1010	Introductory Psychology	–	–	4.0
Group IV Course: ¹ PHIL-2100 –OR– HUMN-1700	Introduction to Ethics –OR– Comparative Religions	–	–	3.0
Group V Course ¹	Any PHED Wellness course—2000 or above—PHED-2076 is recommended for students who need American Heart Association (AHA) CPR certification	–	–	2.0-3.0

**CERTIFICATE IN
SURGICAL TECHNOLOGY—SURGICAL TECHNOLOGIST**

Career preparation and related courses *(require successful completion of a minimum of 65 credit hours)*

**REQUIREMENTS FOR CERTIFICATE IN
SURGICAL TECHNOLOGY—SURGICAL TECHNOLOGIST**

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
PRELIMINARY COURSES				
ENGL-1180 –OR– ENGL-1210	Communications 1* –OR– Composition 1*	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better –OR– Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	–	3.0-4.0
BIOL-2710	Human Physiological Anatomy*	–	–	6.0
BIOL-2730 –OR– BIOL-2400	Pathogenic Microbiology* –OR– General Microbiology*	– BIOL-1000	– –	4.0
HHSC-1700	Medical Terminology*	–	–	3.0
SEMESTER 1				
SURG-1050	Introduction to Surgical Technology	BIOL-2400 or BIOL-2730, and HHSC-1700, all with grade C or better	SURG-1060, SURG-1070	2.0
SURG-1060	Orientation to Central Processing Distribution Technician	BIOL-2400 or BIOL-2730, and HHSC-1700, all with grade C or better	SURG-1050, SURG-1070	4.0
SURG-1070	Central Processing Distribution Technician Clinical	BIOL-2400 or BIOL-2730, and HHSC-1700, all with grade C or better	SURG-1050, SURG-1060	8.0
SEMESTER 2				
SURG-1051	Introduction to Surgical Patient Care Techniques	Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and current proof of American Heart Association (AHA)/BLS Health Provider Certification.	SURG-1200, SURG-1250, SURG-1260	2.0
SURG-1200	Surgical Clinical 1	Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and current proof of American Heart Association (AHA)/BLS Health Provider Certification.	SURG-1051, SURG-1250, SURG-1260	8.0
SURG-1250	Surgical Specialties 1	Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and current proof of American Heart Association (AHA)/BLS Health Provider Certification.	SURG-1051, SURG-1200, SURG-1260	4.0
SURG-1260	Surgical Pharmacology	Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; and BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and current proof of American Heart Association (AHA)/BLS Health Provider Certification.	SURG-1051, SURG-1200, SURG-1250	3.0

REQUIREMENTS FOR CERTIFICATE IN SURGICAL TECHNOLOGY—SURGICAL TECHNOLOGIST

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
SEMESTER 4				
SURG-1300	Surgical Clinical 2	Admission into the Surgical Technology program, and SURG-1051, SURG-1200, SURG-1250, and SURG-1260	SURG-1350, SURG-1360	8.0
SURG-1350	Surgical Specialties 2	Admission into the Surgical Technology program, and SURG-1051, SURG-1200, SURG-1250, and SURG-1260	SURG-1300, SURG-1360	4.0
SURG-1360	Surgical Seminar	Admission into the Surgical Technology program, and SURG-1051, SURG-1200, SURG-1250, and SURG-1260	SURG-1300, SURG-1350	3.0
Group V Course: ¹ Any 2000 level PHED course	PHED-2076 recommended for American Heart Association (AHA) BLS certification	-	-	2.0-3.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/SURGCT.html>

See page 20 for Gainful Employment Information.

SKILL SPECIFIC CERTIFICATE IN SURGICAL TECHNOLOGY—CENTRAL PROCESSING DISTRIBUTION TECHNICIAN

Career preparation and related courses *(require successful completion of a minimum of 21 credit hours)*

REQUIREMENTS FOR SKILL SPECIFIC CERTIFICATE IN SURGICAL TECHNOLOGY—CENTRAL PROCESSING DISTRIBUTION TECHNICIAN

COURSE	COURSE TITLE	PREREQUISITE	COREQUISITE	CREDIT HOURS
BIOL-2400 -OR- BIOL-2730	General Microbiology -OR- Pathogenic Microbiology	BIOL-1000 -OR- -	-	4.0
HHSC-1700	Medical Terminology	-	-	3.0
SURG-1050	Introduction to Surgical Technology	BIOL-2400 or BIOL-2730, and HHSC-1700, all with grade C or better	SURG-1060, SURG-1070	2.0
SURG-1060	Orientation to Central Processing Distribution Technician	BIOL-2400 or BIOL-2730, and HHSC-1700, all with grade C or better	SURG-1050, SURG-1070	4.0
SURG-1070	Central Processing Distribution Technician Clinical	BIOL-2400 or BIOL-2730, and HHSC-1700, all with grade C or better	SURG-1050, SURG-1060	8.0

Gainful Employment Disclosure: <http://www.macomb.edu/ge/SURGPCDTSK.html>

See page 20 for Gainful Employment Information.

NOTES

- * Prerequisites/Corequisites needed to start the program
- ¹ Course may be taken any time prior to or during the program, including the summer semester; it must be completed prior to the completion of your program in order to graduate.
- Surgical Technology courses (SURG) must be taken in the sequence listed previously. Any course without the SURG prefix may be taken prior to its marked sequence but not after.
- A minimum of 18 credit hours of Arts & Sciences courses (Groups I-V) are needed as well as a minimum of 71 total credit hours for the associate degree.
- It is strongly recommended that you work with a counselor, advisor or department coordinator to plan your schedule.

Veterinary Technician

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Veterinary Technician	68	—

CONTACT INFORMATION				
CONTACT TITLE	NAME	PHONE	E-MAIL	LOCATION
Professor	Lori Renda-Francis	586.286.2096	francisl@macomb.edu	Center Campus

Program Description:

ADMISSION REQUIREMENTS: View Selective Admission for detailed information.

The Veterinary Technician program is designed to prepare students to assist with the technical aspects of modern veterinary practice and animal related fields, including: medical laboratory procedures, anesthesia, radiology, and surgical assisting. Major emphasis is on dogs and cats, although instruction will also be given on large animal and laboratory animal techniques. Students are also instructed to develop their skills with people, so as to relate to the owners of the animals.

Students selecting this program should contact the program coordinator at 586.286.2096 or 586.286.2073 for messages.

Requirements & Specific Information:

Additional expenses to be met by the student before entering the internship component of the program are: (1) a health history and physical examination including testing for tuberculosis, and proof of a current tetanus vaccine; (2) uniforms; and, (3) hospitalization insurance as neither the hospital nor the college insures the student against accidents or illnesses.

Students must achieve grade “C” or better, or grade “Pass” (if the course is a Pass/Fail course) for all the Core and Arts and Sciences courses in this program.

Accreditation:

The Associate of Applied Science degree in Veterinary Technician program is accredited by the American Veterinary Medical Association (AVMA), 1931 N. Meacham Road, Suite 100, Schaumburg, IL 60173, 847.925.8070 or 800.248.2862. The Associate of Applied Science degree in Veterinary Technician program is also accredited by the American Animal Hospital Association (AAHA), 12575 W. Bayaud Avenue, Lakewood, CO 80228. AAHA’s phone number is 303.986.2800.

Career Opportunities:

Veterinary Technician— Associate of Applied Science: Job titles such as Veterinary Technologist & Veterinary Technicians are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

ASSOCIATE OF APPLIED SCIENCE IN VETERINARY TECHNICIAN

Career preparation and related courses *(require successful completion of a minimum of 68 credit hours)*

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN VETERINARY TECHNICIAN

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
VETT-1020	Applied Anatomy & Physiology–Lecture	Admission into the Veterinary Technician program	4.0
VETT-1030	Applied Anatomy & Physiology–Laboratory	Admission into the Veterinary Technician program	1.0
VETT-1080	Small Animal Techniques–Lecture	Admission into the Veterinary Technician program	1.0
VETT-1060	Small Animal Techniques–Laboratory	Admission into the Veterinary Technician program	0.5
VETT-1070	Advanced Small Animal Techniques–Laboratory	Admission into the Veterinary Technician program and VETT-1060 and VETT-1080	0.5
VETT-1040	Veterinary Practice & Communications	Admission into the Veterinary Technician program	2.0
HHSC-1010	Animal Health Careers	–	1.0
ITCS-1010	Computer & Information Processing Principles	–	4.0
SEMESTER 2			
VETT-1220	Veterinary Anesthesia–Lecture	Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010	2.0
VETT-1230	Veterinary Anesthesia–Laboratory	Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010	1.5
VETT-1300	Assisting in Veterinary Surgery–Lecture	Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010	1.0
VETT-1310	Assisting in Veterinary Surgery–Laboratory	Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010	1.0
VETT-1440	Clinical Pathology 1–Lecture	Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010	2.0
VETT-1450	Clinical Pathology 1–Laboratory	Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010	3.0
VETT-1700	Pharmacology for Veterinary Technicians	Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010	2.0
SEMESTER 3			
VETT-1580	Veterinary Technician Internship 1	Admission into the Veterinary Technician program, and VETT-1220, VETT-1230, VETT-1300, VETT-1310, VETT-1440, VETT-1450, and VETT-1700	4.0
SEMESTER 4			
VETT-2050	Large Animal Techniques–Lecture	Admission into the Veterinary Technician program and VETT-1580	1.0
VETT-2060	Large Animal Techniques–Laboratory	Admission into the Veterinary Technician program and VETT-1580	1.0
VETT-2200	Small Animal Diseases	Admission into the Veterinary Technician program and VETT-1580	2.0
VETT-2320	Laboratory & Exotic Animal Techniques–Lecture	Admission into the Veterinary Technician program and VETT-1580	1.0
VETT-2330	Laboratory & Exotic Animal Techniques–Laboratory	Admission into the Veterinary Technician program and VETT-1580	0.5

CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR ASSOCIATE OF APPLIED SCIENCE IN VETERINARY TECHNICIAN			
COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
VETT-2340	Advanced Laboratory & Exotic Animal Techniques—Laboratory	Admission into the Veterinary Technician program and VETT-1580, VETT-2320, and VETT-2330	0.5
VETT-2620	Radiology for Veterinary Technicians—Lecture	Admission into the Veterinary Technician program and VETT-1580	1.5
VETT-2630	Radiology for Veterinary Technicians—Laboratory	Admission into the Veterinary Technician program and VETT-1580	1.0
SEMESTER 5			
VETT-2500	Large Animal Diseases	Admission into the Veterinary Technician program, and VETT-2050, VETT-2060, VETT-2200, VETT-2320, VETT-2330, VETT-2340, VETT-2620, and VETT-2630	2.0
VETT-2470	Clinical Pathology 2—Laboratory	Admission into the Veterinary Technician program, and VETT-2050, VETT-2060, VETT-2200, VETT-2320, VETT-2330, VETT-2340, VETT-2620, and VETT-2630	1.5
VETT-2480	Clinical Pathology 2—Lecture	Admission into the Veterinary Technician program, and VETT-2050, VETT-2060, VETT-2200, VETT-2320, VETT-2330, VETT-2340, VETT-2620, and VETT-2630	1.0
VETT-2580	Veterinary Technician Internship 2	Admission into the Veterinary Technician program, and VETT-2050, VETT-2060, VETT-2200, VETT-2320, VETT-2330, VETT-2340, VETT-2620, and VETT-2630	4.0
VETT-2590	Veterinary Technician Capstone	Admission into the Veterinary Technician program, and VETT-2050, VETT-2060, VETT-2200, VETT-2320, VETT-2330, VETT-2340, VETT-2620, and VETT-2630	2.5
Group I Course: ¹ ENGL-1180 —OR— ENGL-1210	Communications 1 —OR— Composition 1	Placement, or ENGL-0050 or EAPP-1500 with grade C- or better	3.0-4.0
Group II Course: ¹ CHEM-1050	Introduction to General Chemistry	MATH-0070 proficiency (demonstrated by math placement score, completing MATH-0070 with grade C or better, being enrolled in a higher level math, or having higher level math on college transcript)	4.0
Group III Course: ¹ PSYC-1010	Introductory Psychology	—	4.0
Group IV Course: ¹ Any Course	Any ARAB, ARTT, CHIN, ENGL-2### (CREATIVE WRITING OR LITERATURE ONLY), FREN, GRMN, HUMN, ITAL, INTL-2000, INTL-2300, MUSC, PHIL, & SPAN	—	3.0
Group V Course ¹	Any PHED Wellness course—2000 or above	—	2.0-3.0

NOTES:

- ¹ Arts & Sciences courses (Group I-V) may be taken any time prior to or during the program, including the summer semester; courses must be completed prior to the completion of your program to graduate.
- Students must apply through the selective admission process and be accepted into the veterinary technician program before taking any VETT course.
 - A minimum of 18 credit hours of Arts & Sciences courses (Groups I-V) are needed as well as a minimum of 68 total credit hours for the associate degree.
 - It is strongly recommended that you work with a counselor, advisor or department coordinator.

Web Specialist

PROGRAM OPTIONS			
CREDENTIAL	TITLE	CREDIT HOURS REQUIRED	NOTES
Associate of Applied Science	Web Specialist	110	–
Certificate	Web Specialist A1 or A2	28	–

CONTACT INFORMATION				
CONTACT TITLE	NAME	Phone	E-MAIL	LOCATION
–	MACA Department	586.445.7993	–	–
–	ITCS Department	586.445.7167	–	–

Program Description:

This third year program is designed as a multi-discipline AAS degree for students from MACA to gain WEB programming skills or for ITCS students in WEB Master/WEB Programming to gain useful experience in the design phase of Web Applications development.

Students completing the MACA degree program in Web Design will gain skills necessary to understand and implement XHTML, XML, and other Web programming and coding techniques. ITCS students will gain invaluable skills in page design and software development tools.

MACA students will find the ITCS courses are designed to be offered online. MACA students must demonstrate proficiency coding and debugging native HTML code*. In addition to the basic equipment and software required for traditional online classes, participants will be required to install curriculum specific software such as Personal Web Server, Visual Studio.Net, and Dreamweaver. Each of these packages is available at very deeply discounted pricing for students, some are free, or are available as a 60-90 day trial offer or as fully functioning programs shipped with textbooks. Texts and supplemental resource guides and programming manuals have been carefully chosen so as to reduce out-of-pocket expense for students.

ITCS students will find that the MACA courses are traditional lab intensive courses offered primarily at South Campus. College resources are available to support in-lab use of specialized software packages necessary for the completion of this track.

Requirements & Specific Information:

Coding & Debugging skills can be acquired in the introduction to Web Programming and JavaScript course taught in the ITWP area.

Career Opportunities:

Web Specialist–Associate of Applied Science: Job titles such as Website Designer, Webmaster, and Web Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Web Specialist–Certificate: Job titles such as Website Designer, Webmaster, and Web Developer are attainable upon completion of this course of study. To learn more from a career specialist, visit the Office of Career Services at either campus or explore online at www.onetonline.org.

Transfer Pathways:

Students intending to transfer and complete a bachelor’s degree need to make early decisions concerning an academic major and a transfer destination. Statistics show that students who make these decisions early are more likely to persist to graduation than their undecided counterparts. Students planning to transfer credits earned at Macomb are strongly urged to see a counselor or academic advisor as early as possible in their college careers.

 [Transfer Resource Guide](#)

**ASSOCIATE OF APPLIED SCIENCE IN
WEB SPECIALIST**

Career preparation and related courses *(require successful completion of a minimum of 28 credit hours)*

**SUGGESTED SEQUENCE BASED ON FULL-TIME ENROLLMENT.
MAY ALSO BE COMPLETED BASED ON PART-TIME ENROLLMENT.**

**CORE COURSES: COMMON DEGREE CORE REQUIREMENTS FOR
ASSOCIATE OF APPLIED SCIENCE IN WEB SPECIALIST
(AFTER COMPLETION OF ASSOCIATE OF APPLIED SCIENCE IN
MEDIA & COMMUNICATION ARTS—INTERACTIVE WEB MEDIA)**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
ITWP-1000	Introduction to Web Programming	ITCS-1010 or ITCS-2335	3.0
ITWP-1050	Basic Web Design With Cascading Style Sheets	ITWP-1000	3.0
ITWP-1100	Web Programming with JavaScript & Dynamic HTML	ITWP-1000	3.0
SEMESTER 2			
ITWP-1400	SEO (Search Engine Optimization) for the Web	ITWP-1000	4.0
ITWP-2300	Building Dynamic, Intelligent Web Based Solutions with ASP.NET	ITCS-1140, ITCS-1170, and ITWP-1000	3.0
SEMESTER 3			
ITWP-2400	Web Programming with XML	ITWP-1000 and ITCS-1130 or ITCS-1140, and ITCS-1160 or ITCS-1170	3.0
ITWP-2600	Web Commerce (E-Commerce)	ITWP-1000 and ITWP-1050	3.0
ITWP-2750	Web Programming: PHP	ITWP-1000 and ITOS-1710 and one of the following: ITCS-1230 or ITWP-1100 or ITCS-2530 or ITCS-2590	3.0
SEMESTER 4			
ITWP-2810	Web Principles for Industry	ITWP-1100, ITWP-1400, ITWP-2600 and ITWP-2300 or ITWP-2750	3.0

**COMMON DEGREE CORE AND WEB SPECIALIST A2 REQUIREMENTS
(AFTER COMPLETION OF ASSOCIATE OF APPLIED SCIENCE IN
INFORMATION TECHNOLOGY-WEB SITE PROGRAMMING—WEB MASTER/WEB PROGRAMMING)**

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
SEMESTER 1			
MACA-1050 –OR– MACA-1055	Digital Layout –OR– Digital Layout: Adobe	–	4.0
MACA-2300	Advanced Photoshop	MACA-1320	4.0
MACA-2200	Digital Editing	MACA-1200	4.0
MACA-1720	Web Page Design: Dreamweaver	MACA-1320	4.0
SEMESTER 2			
MACA-2720	Flash Multimedia 1	MACA-1320	4.0
MACA-2760	Flash Multimedia 2	MACA-2720	4.0
MACA-2770	Flash Multimedia 3	MACA-2720	4.0

CERTIFICATE IN WEB SPECIALIST A1 OR A2

Career preparation and related courses *(require successful completion of a minimum of 28 credit hours)*

REQUIREMENTS FOR CERTIFICATE IN WEB SPECIALIST A1 OR A2

COURSE	COURSE TITLE	PREREQUISITE	CREDIT HOURS
Certificate will be awarded to students successfully completing 28 hours in their core concentration (A1 or A2)			

Gainful Employment Disclosure: <http://www.macomb.edu/ge/WEBSPECT.html>

See page 20 for Gainful Employment Information.



Macomb Community College

Courses Offered

(listed alphabetically)

This section has descriptions of courses offered for credit at Macomb Community College. Courses are listed alphabetically by course name. The course name consists of a course subject (ACCT) and course number (2270) and title (Managerial Accounting). The numbering system will be helpful to you in planning your schedule and in completing registration forms. The number of credit hours for each course is indicated immediately after the course title.

Directed Study courses are not listed by subject in the following pages because the course description is the same for all subjects:

- [SUBJECT-290#] - DIRECTED STUDY - (1-4 credit hrs) Prerequisite: Approval of directed study agreement. Under the direction of an appropriate faculty member, students may pursue studies related to their academic interests on an independent basis. This course may be selected more than once (4 credit hours maximum) with the written consent of the associate dean (1-4 contact hrs).
Glossary (terms used in this section and their definitions)

Credit hours or semester hours are the official number of semester hours of credit given for the course.

CONTACT HOURS unless stated otherwise, are the number of hours the class meets per week for 16 weeks

(FORMERLY....) statements appear in parentheses at the beginning of many course descriptions to indicate that the current course is equivalent to an older course. Students will not receive credit for both courses, i.e., taking the current courses is repeating the former course.

PREREQUISITE is a course that prepares students with mandatory entry-level skills to facilitate a student successfully meeting the learning outcomes for a specific course. The student must successfully complete the prerequisite course before registering for the course that has the prerequisite course. In cases where prior training or education is documented, specific requisites may be waived.

COREQUISITE is a course which must be taken at the same time as another specific course or courses.

RECOMMENDED COREQUISITE is a course that the department suggests be taken at the same time as another specific course or courses.

Courses may be offered at any location unless otherwise indicated.

Course Codes

SUBJECT	COURSE
ACCT	Accounting
ANTH	Anthropology
ARAB	Arabic Language & Culture
ARTT	Art
ASTR	Astronomy
ATAM	Applied Mathematics
ATAP	Advanced Processes
ATBC	Building Construction & Maintenance
ATDD	Drafting & Design
ATEE	See ELEC or MECT
ATEM	Electro Mechanical
ATFP	Fluid Power Technology
ATMT	Metal Craft Theory
ATPP	Plumbing & Pipefitting
ATRA	Refrigeration & Air Conditioning
ATSS	Stationary Steam
ATTR	Applied Technology Related
ATWD	Welding
AUTO	Automotive Technology
BCOM	Business Communications
BIOL	Biology
BLAW	Business Law
BTEC	Biotechnology
BUSN	Business
CHEM	Chemistry
CHIN	Chinese Language & Culture
CIVL	Civil Technology
CLCT	Climate Control Technology
CORE	Mechanical Technology
CRER	Career Experience

SUBJECT	COURSE
CSSK	College Survival Skills
CULH	Culinary Arts
DRAD	Drafting – Architectural
DRCG	Drafting & Computer Graphics
EAPP	English for Academic Purposes
ECHS	Early Childhood Studies
ECON	Economics
EDUC	Education
EETE	See ELEC
ELEC	Electronic Technology
EMSA	Emergency Medical Services
ENGL	English
ENGR	Pre-Engineering
ENVS	Environmental Science
ESCI	Earth Science
FINC	Finance
FIRE	Fire Science
FREN	French Language
GEOG	Geography
GEOL	Geology
GRMN	German Language
HHSC	Health & Human Service, General
HIST	History
HITT	Health Information Technology
HLND	Homeland Security
HTMT	Hospitality Management
HUMN	Humanities
INTL	International Studies
ITAL	Italian Language
ITAP	IT – Applications Professional
ITBS	Business Information Systems

SUBJECT	COURSE
ITCS	Computer Information Systems
ITIA	IT – Information Assurance
ITML	Microcomputer Literacy
ITNC	IT – Networking – Cisco
ITNT	IT – Networking
ITOS	IT – Operating Systems
ITWP	IT – Web Programming
JOUR	Journalism
LAWE	Law Enforcement
LEGA	Legal Assistant
LIFE	Life Career Development
LMGT	Labor Management Relations
MACA	Media & Communication Arts
MAST	Medical Assistant
MATH	Mathematics
MECT	Automated Systems – Mechatronics
MGMT	Management
MKTG	Marketing
MUSC	Music
NATS	Natural Science
NURS	Nursing
OTAS	Occupational Therapy Assistant
PHED	Physical & Health Education
PHIL	Philosophy
PHSA	Physical Science
PHYS	Physics
POLS	Political Science
PRDE	Product Development
PSYC	Psychology

SUBJECT	COURSE
PTAS	Physical Therapist Assistant
QUAL	Quality Systems Technology
READ	Reading
RNEW	Renewable Energy
ROBO	Robotics
RSPT	Respiratory Therapy
SECR	Security Administration
SIGN	Sign Language
SOCY	Sociology
SOSC	Social Science
SPAN	Spanish Language
SPCH	Speech
SURG	Surgical Technology
SURV	Land Surveying Technology
TMTH	Technical Math
VETT	Veterinary Technician

ACCT — Accounting

ACCT-1050 — Financial Record Keeping — 4.00 credit hours

- ▶ Prerequisite: None
(formerly ACC 105) This course is not recommended for accounting majors or transfer students. This course will provide a procedural and practical approach to maintaining accounting records. The accounting cycle for a service company and a merchandising concern will be covered. Topics will include journals, ledgers, trial balances, financial statements, subsidiary ledgers, and payroll records. Manual and computerized accounting are used. (4 contact hrs)

ACCT-1070 — Accounting for Entrepreneurs — 3.00 credit hours

- ▶ Prerequisite: None
(formerly ACC 107) This course will focus on reading and understanding financial statements. Students will learn how to analyze financial statements and how financial information can be effectively used to properly plan, control operations, and to make the right business decisions. (3 contact hrs)

ACCT-1080 — Principles of Accounting 1 — 4.00 credit hours

- ▶ Prerequisite: None
(formerly ACC 108) Introduction to accounting techniques and theories as they relate to business organizations. Transaction analysis and information processing for a service and merchandising concern. Measurement and reporting of assets, liabilities, and equity. The emphasis is on financial accounting. (4 contact hrs)

ACCT-1090 — Principles of Accounting 2 — 4.00 credit hours

- ▶ Prerequisite: ACCT-1080
(formerly ACC 109) Continuation of financial accounting and introduction to managerial accounting. Topics include statement of cash flow, statement analysis, accounting for a manufacturing concern, cost-volume-profit relationships, and budgeting. (4 contact hrs)

ACCT-1150 — Microcomputer Applications in Accounting — 3.00 credit hours

- ▶ Prerequisite: ACCT-1090
(formerly ACC 115) The student uses a microcomputer to complete accounting tasks and to solve various accounting problems. These accounting systems are studied: general ledger, accounts receivable, accounts payable, depreciation and payroll. In addition, a number of spreadsheet applications are covered. (3 contact hrs)

ACCT-2180 — Intermediate Accounting 1 — 4.00 credit hours

- ▶ Prerequisite: ACCT-1090
(formerly ACC 218) Review of the accounting process and theory. Coverage in detail of cash and temporary investments, receivables, inventories, long-term investments in stocks, and tangible and intangible assets. (4 contact hrs)

ACCT-2190 — Intermediate Accounting 2 — 4.00 credit hours

- ▶ Prerequisite: ACCT-2180
(formerly ACC 219) ACCT-2190 is strongly recommended for students who plan on transferring to a senior college which accepts ACCT-2190. Analysis of current, contingent, and long-term liabilities including bonds, pensions, and leases. Extensive coverage of corporations and stockholders equity including capital at and after formation, retained earnings and appropriations, cash flow statements, and analysis of statements. (4 contact hrs)

ACCT-2270 — Managerial Accounting — 4.00 credit hours

- Prerequisite: ACCT-1090 (formerly ACC 227) Accumulation of information useful to management in a variety of decision-making situations. Emphasizes manufacturing accounting, cost-volume relations, relevant costs, budgeting, and standard cost system, and quantitative techniques in managerial accounting. (4 contact hrs)

ACCT-2300 — Federal Income Tax — Individual — 4.00 credit hours

- Prerequisite: ACCT-1080 or 2 years work experience in accounting (formerly ACC 230) Orientation to current federal tax laws and techniques in filing annual U.S. individual income tax returns. Provides practical experience in preparation of annual returns and a basic foundation for further study in the tax field. (4 contact hrs)

ANTH — Anthropology

ANTH-1000 — Introduction to Anthropology — 4.00 credit hours

- Prerequisite: None (formerly ANT 100) An introduction to man's biological evolution and cultural origins. Prehistoric man, racial differences, and the growth of language and culture will be considered. A cross-cultural study of social institutions, art, beliefs, and values will be included as well as a discussion of contemporary anthropological problems. (4 contact hrs)

ANTH-2220 — Introduction to Archaeology — 4.00 credit hours

- Prerequisite: None This course is an introduction to the techniques, methods, and theories that archaeologists use to interpret the human past. The class will also explore archaeological evidence from both the Old and the New Worlds. (4 contact hrs)

ARAB — Arabic Language & Culture

ARAB-1260 — Introduction to Arabic Language & Culture — 4.00 credit hours

- Prerequisite: None (formerly ARAB-2920) This course is designed to introduce students to the Arabic speaking world and Arabic vocabulary and grammatical structures necessary to express personal meaning on basic topics. Students will engage in these activities within contextualized cultural settings. The vocabulary and grammatical structures are integrated into interactive and communicative activities that emphasize all four language skills: speaking, listening, reading, and writing. Students are required to use computer based technology to practice these skills. (5 contact hrs)

ARAB-1270 — Elementary Arabic 2 — 4.00 credit hours

- Prerequisite: ARAB-1260 or two or more years of high school Arabic (formerly ARAB-2911) This course continues students' development of Arabic language and culture by building and expanding on the culture, vocabulary and language structures learned in ARAB-1260. New language functions will be presented in meaningful activities that emphasize all four language skills: speaking, listening, reading, and writing and allow for further cultural exposure. Students are required to use computer based technology to practice these skills. (5 contact hrs)

ARAB-2360 — Intermediate Arabic 1 — 4.00 credit hours

- Prerequisite: ARAB-1270
ARAB-2360 Third-semester Arabic picks up where second-semester Arabic (ARAB-1270) has ended. The central goal is to advance the student's communicative ability and cultural competency with an emphasis on assimilating the language for complex communicative purposes. In addition to Modern Standard Arabic (MSA), students will also practice one of the spoken dialects, the Egyptian, the Levantine, or the Moroccan dialects. The instructor will use authentic materials including texts from print Arabic media, video, and audio from the Middle East. (5 contact hours)

ARTT — Art

ARTT-1060 — Basic Drawing 1 — 3.00 credit hours

- Prerequisite: None
(formerly ART 106) Basic drawing skills for both commercial and general art. Introductions to elements of drawing, perspective, and drawing media, such as charcoal, ink, conte crayon, pencil, etc. Composition with still life, figure, and landscape. Required for pre-art majors. (6 contact hrs)

ARTT-1070 — Basic Drawing 2 — 3.00 credit hours

- Prerequisite: ARTT-1060
(formerly ART 107) Continuation of ARTT-1060 with greater emphasis on composition, rendering, perspective, and personal expression. Required for pre-art majors. (6 contact hrs)

ARTT-1360 — Color & Design 1 — 3.00 credit hours

- Prerequisite: None
(formerly ART 136) Principles of design as a foundation for all work in art. Creative experimentation in two-dimensional design with line, shape, value, texture, and color in various media. Required for pre-art majors. (6 contact hrs)

ARTT-1370 — Color & Design 2 — 3.00 credit hours

- Prerequisite: ARTT-1360
(formerly ART 137) Continuation of ARTT-1360. Color composition; color systems and phenomena. Three-dimensional approaches explored in paper, wood, plastic, metal, etc. Required for pre-art majors. (6 contact hrs)

ARTT-1460 — Ceramics 1 — 3.00 credit hours

- Prerequisite: None
(formerly ART 146) Introduction to ceramic handcraft; design processes, hand building methods, throwing on the potter's wheel, decoration, glazing, and firing. (6 contact hrs) Center Campus.

ARTT-1470 — Ceramics 2 — 3.00 credit hours

- Prerequisite: ARTT-1460
(formerly ART 147) Continuation of ARTT-1460. Emphasis on increased conceptual and technical skills, particularly wheel-throwing and leather-hard slab construction. (6 contact hrs) Center Campus.

ARTT-1480 — Ceramics 3 — 3.00 credit hours

- Prerequisite: ARTT-1470
(formerly ART 148) Advanced work in the art and craft of clay and glazes. Additive, reductive, and formative construction; lab practice; architectural scale ceramics; combining media, field trips. May be taken twice for credit. (6 contact hrs) Center Campus.

ARTT-1620 — Fine Art Appreciation — 3.00 credit hours

- Prerequisite: None
(formerly ARTT 1610) Open to all students to develop insight and gain experience in the visual arts. Non-historical introduction to the aesthetic elements of architecture, sculpture, crafts, painting, drawing, printmaking, design, etc. (3 contact hrs)

ARTT-1625 — Fine Art Appreciation: Travel Abroad — 4.00 credit hours

- Prerequisite: None
Open to all students to develop insight and gain experience in the visual arts through travel. Introduction to the aesthetic elements of architecture, sculpture, crafts, painting, drawing, printmaking, design, etc. This class will travel to European locations to appreciate real-world examples. (4 contact hrs)

ARTT-2060 — Life Drawing 1 — 3.00 credit hours

- Prerequisite: ARTT-1060
(formerly ART 206) Basic study of the human form. Includes anatomy, structural, and visual form. Required for pre-art majors. (6 contact hrs)

ARTT-2070 — Life Drawing 2 — 3.00 credit hours

- Prerequisite: ARTT-2060
(formerly ART 207) Continuation of ARTT-2060 with greater development of personal skills. (6 contact hrs) Center Campus.

ARTT-2160 — Basic Painting 1 — 3.00 credit hours

- Prerequisite: ARTT-1060 and ARTT-1360
(formerly ART 216) Abstract and realistic approaches for the technical handling of tools, pigments, and processes in acrylic and/or oil painting. (6 contact hrs) Center Campus.

ARTT-2170 — Oil Painting — Painting 2 — 3.00 credit hours

- Prerequisite: ARTT-2160
(formerly ART 217) Classical handling of the medium with some research into contemporary methods and material. (6 contact hrs) Center Campus.

ARTT-2200 — Jewel & Metalwork — 3.00 credit hours

- Prerequisite: None
(formerly ART 220) This course covers elements of design and production of handcrafted jewelry, small sculpture, and functional objects in metals and other media, including centrifugal casting (of “lost wax” and other organic models), gas and electric welding, and forging techniques. Students will work in construction (with sheet, wire, and other media). (6 contact hrs) Center Campus.

ARTT-2210 — Jewel & Metalwork 2 — 3.00 credit hours

- Prerequisite: ARTT-2200
This course is a continuation of ARTT-2200 with emphasis on greater individual direction and choice of media. Students will gain further experience in centrifugal casting, stone setting, advanced welding, and forging. (6 contact hrs) Center Campus

ARTT-2560 — Sculpture 1 — 3.00 credit hours

- Prerequisite: None
(formerly ART 256) Emphasis on basic techniques of modeling, casting, construction, and elementary carving. Abstract and figurative approaches. (6 contact hrs) Center Campus.

ARTT-2570 — Sculpture 2 — 3.00 credit hours

- Prerequisite: ARTT-2560
(formerly ART 257) Continuation of ARTT-2560 with emphasis on greater individual direction and choice of media. (6 contact hrs) Center Campus.

ARTT-2580 — Sculpture 3 — 3.00 credit hours

- Prerequisite: ARTT-2560, ARTT-2570
ARTT-2580 is for advanced sculpture making. Students gain a greater understanding of concepts and object making through advanced work in welding and the casting processes. (6 contact hrs) Center Campus.

ARTT-2600 — Figurative Sculpture 1 — 3.00 credit hours

- Prerequisite: None
(formerly ARTT-2922) This course introduces creation of sculpture art using the human figure. It covers a basic study and understanding of the human form in space, including anatomy, reduction, structure, and other sculpture practices. (6 contact hrs) Center Campus.

ARTT-2602 — Figurative Sculpture 2 — 3.00 credit hours

- Prerequisite: ARTT-2600 and ARTT-2560
(formerly ARTT-2923) This course extends creation of sculpture using the human figure. The student will gain a greater understanding of anatomy and structure through advanced work with the casting process. (6 contact hrs) Center Campus.

ARTT-2650 — Art of the Western World: Prehistory to Gothic — 3.00 credit hours

- Prerequisite: None
(formerly ART 261 and ARTT2610) Survey of architecture, sculpture, painting from prehistoric era to the Renaissance. Outstanding personalities and historical background. (3 contact hrs)

ARTT-2660 — Art of the Western World: Renaissance To Modern — 3.00 credit hours

- Prerequisite: None
(formerly ART 262 and ARTT2620) Survey of architecture, sculpture, painting from the Renaissance through modern times. Outstanding personalities and historical background. (3 contact hrs)

ASTR — Astronomy

ASTR-1030 — General Astronomy 1 — 2.00 credit hours

- Prerequisite: None
(formerly AST 103) Descriptive course analyzing the solar system, historical aspects, including the astronomy of ancient civilizations and most important astronomers, and the instruments used by the astronomer. (2 contact hrs)

ASTR-1040 — General Astronomy 2 — 2.00 credit hours

- Prerequisite: ASTR-1030
(formerly AST 104) Descriptive course analyzing the universe outside our solar system: stars, galaxies, nebulae, and interstellar material; also a brief exploration of cosmology dealing with the main theories about the origin of the universe. (2 contact hrs)

ATAM — Applied Mathematics

ATAM-1150 — Mathematics — Shop Arithmetic — 2.00 credit hours

- Prerequisite: None
(formerly ATM 115) Review of basic arithmetic; whole numbers, fractions, decimals, signed numbers, grouping symbols, square root, ratio and proportion, flat and round tapers, simple and complex gear ratios; practical industrial shop problems are employed. (2 contact hrs) South Campus.

ATAM-1160 — Mathematics — Algebra — 2.00 credit hours

- Prerequisite: ATAM-1150 or consent of apprenticeship coordinator (formerly ATM 116) Fundamental operations of positive and negative numbers, grouping symbols, algebraic axioms, equations, special products and factoring. Solution of practical shop problems. (2 contact hrs) South Campus.

ATAM-1170 — Mathematics — Geometry — 2.00 credit hours

- Prerequisite: ATAM-1160 or consent of apprenticeship coordinator (formerly ATM 117) Quadratic formula, review solutions, shop formulas. Definitions and description of geometric terms, axioms, and theorems. An explanation is given to propositions dealing with straight lines, triangles, and circles, with emphasis on applications to practical shop problems. (2 contact hrs) South Campus.

ATAM-1350 — Mathematics — Arithmetic & Introductory Algebra for Electrical & Allied Crafts — 2.00 credit hours

- Prerequisite: None (formerly ATM 135) An intensive review of arithmetic with emphasis on common and decimal fractions, ratio and proportion, percentage, and square root. Systems, units of measurement, and conversions. An introduction to algebra including terminology, additive functions, grouping symbols, axioms, basic procedures, multiplication and division. (2 contact hrs) South Campus.

ATAM-1360 — Mathematics — Electrical Circuitry — Algebra & Trigonometry — 2.00 credit hours

- Prerequisite: ATAM-1350 or consent of apprenticeship coordinator (formerly ATM 136) Sign numbers, grouping symbols, factoring equations in one unknown, fractions, fractional equations, exponents and radicals, solution of simultaneous equations, and introduction to j factor. (2 contact hrs) South Campus.

ATAM-2150 — Mathematics — Trigonometry — 2.00 credit hours

- Prerequisite: ATAM-1170 or consent of apprenticeship coordinator or related work experience (formerly ATM 215) Covers definitions of the trigonometric functions, construction and use of trigonometric tables, solutions of right triangle problems, and applications of trigonometry to practical shop problems. (2 contact hrs) South Campus.

ATAM-2160 — Mathematics — Trigonometry & Shop Application — 2.00 credit hours

- Prerequisite: ATAM-2150 or consent of apprenticeship coordinator (formerly ATM 216) Solutions of oblique triangles by use of altitude method; law of sines, cosines, and cotangent law. Applications to practical shop problems. Emphasis is placed upon standardized types of shop and drafting room problems using above methods. (2 contact hrs) South Campus.

ATAM-2350 — Mathematics — A.C. Circuitry — Trigonometry & Vectors — 2.00 credit hours

- Prerequisite: ATAM-1360 or consent of apprenticeship coordinator or related work experience (formerly ATM 235) Angles, angular measure (degrees, radians), angular velocity frequency, similar triangles, trig functions, solutions of right triangles, law of cosines, vector addition and subtraction, vector components, and graphing trig functions. (2 contact hrs) South Campus.

ATAP — Advanced Processes**ATAP-1030 — Feeds, Speeds, & Advanced Tools — 2.00 credit hours**

- Prerequisite: None
This course teaches the student advanced cutting tool technologies, such as proper selection of tools for CNC mills and lathes, optimum feedrate, spindle speed, surface feet per minute calculations, maximum depth of cut, side steps, high speed machining, and hard milling and turning. The student will learn the importance of tool geometries. (2 contact hrs) South Campus.

ATAP-1050 — CNC Essentials — 3.00 credit hours

- Prerequisite: None
(formerly ATAP-2912) This lecture and lab course covers shop floor and CNC essentials necessary to subsist in today's digital manufacturing setting. Students will employ MS Windows with advanced manufacturing and CNC applications. Topics include file creation, file management, spreadsheets for setup and tooling sheets, operation of all CNC controls in the lab, including mill, lathe, RAM, and Wire and Fast Hole EDM; basic metrology, such as micrometers and calipers; and basic inspection procedures using the Faro Gage. This course prepares students for all ATAP coursework. (4 contact hrs) South Campus.

ATAP-2010 — Drafting — 2D CAD with MasterCAM — 2.00 credit hours

- Prerequisite: None
This course teaches the general concepts of two dimensional modeling and drafting using MasterCAM. Through lecture and lab assignments, the student will learn basic two-dimensional modeling skills. Beginning with 2D wireframe construction, students will learn the interface and how to design basic models. These models are then used to create drawings, complete with dimensions and annotations. Terminology used in the field of CAD will be emphasized. (2 contact hrs) South Campus.

ATAP-2020 — Art-To-Part — Digital Art to 3D CNC Machining — 2.00 credit hours

- Prerequisite: None
This course teaches the general concepts of Art-to-Part using ArtCAM software. Through lecture and lab assignments, the student will learn basic skills necessary to convert two-dimensional digital pictures into three-dimensional CAD data for surface machining. Toolpaths will be generated and parts will be machined using CNC Machine Tools. Terminology used in the field of CAD/CAM will be emphasized. (2 contact hrs) South Campus.

ATAP-2030 — 2D MasterCAM — Mill Programming & Machining — 2.00 credit hours

- Prerequisite: None
This course teaches the general concepts of MasterCAM for milling. Through lecture and lab assignments, the student will learn basic two-dimensional toolpath skills. Beginning with 2D wireframe construction, students will learn the interface and how to design basic models. These models are then used to create drawings and 2D CNC mill toolpaths using the CAM module. Terminology used in the field of CAD/CAM will be emphasized. (2 contact hrs) South Campus.

ATAP-2310 — CNC Mill G & M Programming & CNC Machining — 2.00 credit hours

- Prerequisite: None
This course teaches the general concepts of CNC Mill Programming. Through lecture and lab assignments, the student will learn offline programming, shop floor programming, and the principles of 2-1/2 axis CNC milling. Profiling, facing, drilling, reaming, tapping, threading and pocketing cycles will be emphasized, accompanied by demonstrations, student programming, and hands-on setup and machine operation. (2 contact hrs) South Campus.

ATAP-2320 — CNC Lathe G & M Programming & CNC Machining — 2.00 credit hours

- Prerequisite: None
This course teaches the general concepts of CNC Lathe Programming and Machining. Through lecture and lab assignments, the student will learn offline programming, shop floor programming, and the principles of 2 axis CNC turning. Turning, facing, drilling, reaming, tapping, and threading will be emphasized, accompanied by demonstrations, student programming, and hands-on setup and machine operation. (2 contact hrs) South Campus.

ATAP-2330 — EDM RAM — G & M Programming & Machining — 2.00 credit hours

■ Prerequisite: None

This course teaches the general concepts of RAM Electrical Discharge Machining, a method involving electrical discharges between an electrode and a conductive workpiece to remove material in a non-conventional manner. Through lecture and lab assignments, the student will learn multiple EDM skills, beginning with an overview of EDM technology, followed by electrode material selection, proper design of electrodes, spark gap theory, and the principles of 2D and 3D electrode orbiting. Terminology used in the field of RAM, Wire, and Fast Hole EDM will be emphasized, accompanied by demonstrations, student programming, and EDM setup and operation. (2 contact hrs) South Campus.

ATAP-2340 — EDM WIRE — G & M Programming & Machining — 2.00 credit hours

■ Prerequisite: None

This course teaches the general concepts of Wire Electrical Discharge Machining, a method involving electrical discharges between a wire and a conductive workpiece to remove material in a non-conventional manner. Through lecture and lab assignments, the student will learn multiple EDM skills, beginning with an overview of Wire EDM technology, followed by wire selection, spark gap theory, and the principles of rough cuts and skim passes. Terminology used in the field of Wire EDM will be emphasized, accompanied by demonstrations, student programming, and EDM setup and operation. (2 contact hrs) South Campus.

ATAP-2350 — 3D MasterCAM — Die/Mold CNC Machining — 2.00 credit hours

■ Prerequisite: ATAP-2030

This course teaches the advanced concepts of MasterCAM milling. Through lecture and lab assignments, the student will learn advanced CAD/CAM modeling skills. Students will design 3D models. These models are then used to create CNC 3D toolpaths using the CAM module. Terminology used in the field of CAD/CAM will be emphasized. (2 contact hrs) South Campus.

ATAP-2360 — 3D Cimatron CAD/CAM — Die/Mold Machining — 2.00 credit hours

■ Prerequisite: None

This course teaches the general concepts of Cimatron CAD/CAM milling. Through lecture and lab assignments, the student will learn basic CAD/CAM modeling skills. Beginning with Solids, students will learn the interface and how to design basic models. These models are then used to create drawings and CNC toolpaths using the CAM module. Terminology used in the field of CAD/CAM will be emphasized. (2 contact hrs) South Campus.

ATAP-2370 — 3D Computer Aided Mold/Electrode Design — 2.00 credit hours

■ Prerequisite: ATAP-2360

This course teaches the general concepts of electrode design and manufacture, along with mold (tool) design using Cimatron CAD/CAM software. Through lecture and lab assignments, the student will design electrodes for use in the Electrical Discharge Machining industry. The student will also learn how to design mold tooling and moldbases using Cimatron CAD/CAM. Terminology used in the field of Mold Design will be emphasized. (2 contact hrs) South Campus.

ATAP-2380 — Rapid Prototyping & Reverse Engineering — 2.00 credit hours

■ Prerequisite: None

This course teaches the general concepts of Rapid Prototyping and Reverse Engineering. Through lecture and lab assignments, the student will learn basic skills necessary to convert CAD models into STL files and either CNC machine them or print them three dimensionally. Students will also be exposed to Reverse Engineering, which consists of three-dimensional scanning using a probe and laser, and an articulating arm. Terminology used in the field of Rapid Prototyping and Reverse Engineering will be emphasized. (2 contact hrs) South Campus.

ATBC — Building Construction & Maintenance

ATBC-1100 — Blueprint & Math — Residential — 2.00 credit hours

- Prerequisite: None
(formerly ATC 110) A course designed to provide a means for the student to interpret prints of existing residences, and to relate construction problems with general mathematics; further, this course will expand to cover some specific items imposed by inspection authorities. Contains material that will help the student prepare to take the Michigan Residential Builders License Examination. (2 contact hrs) South Campus.

ATBC-1150 — Blueprint & Math — Commercial — 2.00 credit hours

- Prerequisite: None
(formerly ATC 115) Study of blueprints of commercial, industrial, or institutional structures. Special emphasis on interpretation of details as they relate to construction problems. (2 contact hrs) South Campus.

ATBC-1160 — Construction — Cost Estimating — 2.00 credit hours

- Prerequisite: ATBC-1150 or ATBC-1100
(formerly ATC 116) A study of methods and procedures that are currently used to perform a construction estimate. Course includes examination of plans and specifications, outlining of material takeoff methods, and labor pricing schedules. (2 contact hrs) South Campus.

ATBC-1180 — Construction — Electrical Blueprint Reading (Residential) — 2.00 credit hours

- Prerequisite: None
(formerly ATC 118) The interpretation of residential plans, wiring diagrams, wiring systems, and specifications. The National Electric Code regulations that apply to each step of the installation are analyzed. (2 contact hrs) South Campus.

ATBC-1190 — Construction — Electrical Blueprint Reading (Commercial) — 2.00 credit hours

- Prerequisite: ATBC-1180
(formerly ATC 119) The interpretation of plans for commercial type buildings in regards to the electrical installation involved. NEC requirements that pertain to commercial installations are analyzed. (2 contact hrs) South Campus.

ATBC-1250 — Construction — Wiring Residential — 2.00 credit hours

- Prerequisite: None
(formerly ATC 125) After a brief review of electrical fundamentals and Ohm's law and its applications, this course covers basic code requirements, standard electrical symbols used on plans, and the installation of various types of wiring systems permitted by national and local codes. Latest methods for rewiring inadequate wiring systems are covered. Large appliance and service equipment installations are well stressed. (2 contact hrs) South Campus.

ATBC-1260 — Construction — Wiring Commercial & Industrial — 2.00 credit hours

- Prerequisite: ATBC-1250
(formerly ATC 126) The course covers special purpose commercial and industrial wiring problems, including a practical approach to wiring methods, lighting (design and maintenance) equipment, and other materials and components peculiar to modern application of the National Electrical Code (NEC). (2 contact hrs) South Campus.

ATBC-1400 — Construction — Hand Woodworking Tools — Care & Use — 3.00 credit hours

- Prerequisite: None (formerly ATC 140) This course consists of the selection, safe use, and maintenance of hand woodworking tools used in the carpentry and building maintenance occupations. For example: framing square, sawing tools, planes, cutting edge tools, coring tools, smoothing tools, and layout tools. (3 contact hrs) South Campus.

ATBC-1510 — Construction — Layout Surveying — 2.00 credit hours

- Prerequisite: None (formerly ATC 151) The objective of this course is to instruct the apprentice and/or technician in the proper care and fundamental use of the engineer's tape, transit, and level. The student will use these instruments to establish the horizontal and vertical control to lay out a simple masonry foundation, wall, or building in its proper location and elevation. (2 contact hrs) South Campus.

ATBC-1700 — Green Building — Design & Construction — Commercial — 3.00 credit hours

- Prerequisite: None (formerly ATBC-2911) ATBC-1700 explores basic principles for testing decisions made in designing and constructing a green building for commercial or institutional use. Topics include green building assessment standards; sustainable sites and landscaping; materials selection; water, energy, and indoor environmental quality. (3 contact Hours) South Campus.

ATBC-2600 — Construction Law & Contract Administration — 2.00 credit hours

- Prerequisite: None (formerly ATC 260) A study of contracts, the Michigan builder's licensing statute, mechanic's liens, real estate law, warranties, construction financing, and taxes designed to introduce the student to the areas of the law he should be familiar with in the construction industry. Contains material that will help student prepare to take the Michigan Residential Builders License Examination. (2 contact hrs) South Campus.

ATDD — Drafting & Design

ATDD-1770 — Drafting — Sheet Metal Triangulation Applications — 2.00 credit hours

- Prerequisite: ATDD-1750 (formerly ATD 177) The course concerns layout and metal fabrication of various transition fittings (transition elbows, offsets, stack boot fittings, etc.) using the triangulation method of development. (2 contact hrs) South Campus.

ATDD-1780 — Drafting — Sheet Metal — Short Cut Applications — 2.00 credit hours

- Prerequisite: ATDD-1750 (formerly ATD 178) Emphasis is on short cut methods of layout of standard fittings. Wye branch and Bullnose Tee fittings are also covered. Based on problems and projects adapted from industry. (2 contact hrs) South Campus.

ATDD-1900 — Drafting — Machine Tool Blueprint Reading — 2.00 credit hours

- Prerequisite: None (formerly ATD 190) An introduction to blueprint reading; interpretation of various kinds of lines, position of views, symbols, conventions, dimensioning practices, sectioning, auxiliary views and symmetry with emphasis on techniques employed to show details in relation to assembly drawings. (2 contact hrs) South Campus.

ATDD-1920 — Drafting — Geometric Dimensioning & Tolerancing Fundamentals — 2.00 credit hours

- Prerequisite: ATDD-1960 or DRST-1110 (formerly ATD 192) The content for this course is based on the latest ANSI/ASME Y14.5 Dimensioning and Tolerancing Standard. An introduction to tolerancing, symbology, form controls, datum referencing, orientation controls, position controls, runout and profile controls, location of fixed and floating fasteners, position of coaxial features and position on non-cylindrical features. (2 contact hrs) South Campus.

ATDD-1950 — Drafting — Essentials — 2.00 credit hours

- Prerequisite: None (formerly ATD 195) Introduction to blueprint reading and drafting: class exercises in interpreting lines, view positions, conventions, and standards found on prints; use of drawing tools, simple geometric construction, fundamentals of orthographic projection, use of finish symbols, the application of scale and precision dimensioning and an introduction to metric dimensioning. (2 contact hrs) South Campus.

ATDD-1960 — Drafting — Conventions & Symbols — 2.00 credit hours

- Prerequisite: ATDD-1950 (formerly ATD 196) Drawings to illustrate assembly and detail drawings, print identification, holes, sections, tapers, and casting. Practice in reading related shop prints, and metric dimensioning. (2 contact hrs) South Campus.

ATDD-1970 — Drafting — Three Dimensional Shape Interpretation — 2.00 credit hours

- Prerequisite: ATDD-1950 (formerly ATD 197) Pictorial drawing concentrating on the isometric and oblique methods. Practice in three-dimensional visualization interpretation of orthographic prints is stressed by modeling clay into forms related to prints that cover the fundamentals of shape interpretation. (2 contact hrs) South Campus.

ATDD-1980 — Drafting — Advanced Drawing Techniques — 2.00 credit hours

- Prerequisite: ATDD-1960 (formerly ATD 198) Orthographic drawing of single and double auxiliaries, weldments, castings, and symmetrically opposite parts. The study and application of metrics, base line dimensioning and practice in reading related shop drawings. (2 contact hrs) South Campus.

ATDD-2750 — Drafting — Industrial Application Machine Guards — 2.00 credit hours

- Prerequisite: ATDD-1750 and ATDD-1770 or related work experience (formerly ATD 275) A course dealing with design layout and fabrication of industrial safety guards for belt and chain driven pulley systems; splash guards for wet operations; guards with an exhaust takeoff for grinding and polishing operations, guards used with material handling systems; and air intake or exhaust opening guards. (2 contact hrs) South Campus.

ATEM — Electro Mechanical

ATEM-1350 — Electrical — Mechanical Blueprint Reading — 2.00 credit hours

- Prerequisite: ATEE-1300 and ATPF-1100 or consent of apprenticeship coordinator (formerly AEM 135) Practice in print reading using large blueprints for process control for temperature, flow, pressure, etc., delta-y connections, application of SCR controls, relay circuit for automated conveyor systems, robot operated hoist systems using programmable controllers, application of hydraulic, pneumatic and combustion controls, plumbing layout, power wiring layout, plant layout and interconnecting wiring. (2 contact hrs) South Campus.

ATFP — Fluid Power Technology

ATFP-1100 — Fluid Power — Fundamentals — 2.00 credit hours

- Prerequisite: ATAM-1150 or ATAM-1350 or consent of apprenticeship coordinator (formerly ATF 110) Survey of the basic components of hydraulic systems and the basic laws and formulas in simple fluid power calculation. Covers such topics as: pumps, control valves, actuators, the use of A.S.A.I.S. symbols, and the maintenance procedure. (2 contact hrs) South Campus.

ATFP-1110 — Fluid Power — Pumps — 2.00 credit hours

- Prerequisite: ATFP-1100 (formerly ATF 111) Pumps used in fluid power, the principles of pump operation, construction, and maintenance. Covered are the fixed and variable delivery pumps, gear, vanes, axial and radial piston, combination pumps, as well as self-contained power units. (2 contact hrs) South Campus.

ATFP-1120 — Fluid Power — Control — 2.00 credit hours

- Prerequisite: ATFP-1100 (formerly ATF 112) Controls used in fluid power. Covered are pressure and volume theory, operation and construction of valves and circuit applications. The valves studied are the relief pressure reducing sequence, counterbalance, brake, volume control, directional, assemblies and various types of valve controls, including electrical control circuitry and air logic. (2 contact hrs) South Campus.

ATFP-1140 — Fluid Power — Basic Circuits (Special Extended Laboratory Experience) — 3.00 credit hours

- Prerequisite: ATFP-1100 and ATFP-1120 (formerly ATF 114) ATFP-1140 covers fluid power circuit fundamentals, calculations, and simple design. The circuits studied are pump-unloading, speed, pressure, volume, deceleration, sequence, servo, oil conditioning, and transfer line including electrical control circuitry and air logic. (3 contact hrs) South Campus.

ATFP-1210 — Fluid Power — Pneumatic Controls & Circuits — 2.00 credit hours

- Prerequisite: ATFP-1100 (formerly ATF 121) Fundamental pneumatic principles, gas laws, calculations, A.S.A.I.S. symbols, and terminology. The course deals with the way air is compressed, the compressed air system, controlling pneumatic power, and the use introduction of fluidics. (2 contact hrs) South Campus.

ATMT — Metal Craft Theory

ATMT-1150 — Machine Theory — Machine Tool Laboratory 1 — 3.00 credit hours

- Prerequisite: None (formerly ATT 115) Basic theory and operations of the fundamental machines used in a modern machine shop. Basic skills and technical knowledge are covered for drill presses, shapers, lathes, and milling machines. Safe work habits are emphasized. Inspection is an integral Part of the course. (3 contact hrs) South Campus.

ATMT-1160 — Machine Theory — Machine Tool Laboratory 2 — 3.00 credit hours

- Prerequisite: ATMT-1150 or consent of apprenticeship coordinator (formerly ATT 116) Advanced operations on the drill press and lathe in a modern machine shop. Safety in threading, taper turning and boring is emphasized. Layout and bench procedures are also an integral Part of this course. (3 contact hrs) South Campus.

ATMT-1210 — Machine Theory — Benchwork, Drill Presses & Lathes — 2.00 credit hours

- Prerequisite: None
(formerly ATT 121) Theory of linear and surface finish measurement as well as the proper use of the tools and instruments used in these areas. Also covered is the proper use and care of the hand tools used in such operations as scraping, filing, sawing, chipping, and layout procedures. Drill press and lathe operations and the tools and accessories used on each are studied in addition to screw threads and standard taper design. (2 contact hrs) South Campus.

ATMT-1250 — Machine Theory — Shapers, Planers, Mills & Grinders — 2.00 credit hours

- Prerequisite: None
(formerly ATT 125) The mechanism, operations, tools, and accessories of the shaper, planer, milling machines, cylindrical grinders, internal grinders, centerless grinders, surface grinders, jig grinders, and cutter grinders are studied. Theory and application of indexing, helical and spiral milling, grinding wheel, and lapping are included. (2 contact hrs) South Campus.

ATMT-1300 — Metallurgy — Characteristics of Ferrous Metals — 2.00 credit hours

- Prerequisite: None
(formerly ATT 130) Provides an understanding of the production structure and application of ferrous metals. Includes properties of ferrous metals, production of steel, cast iron, and a general background in basic heat treatment of steel. (2 contact hrs) South Campus.

ATMT-1310 — Metallurgy — Characteristics of Non-Ferrous Metals — 2.00 credit hours

- Prerequisite: ATMT-1300
(formerly ATT 131) Understanding metals and their application. Topics to be covered: non-ferrous metals, theory of alloys, physical metallurgy, aluminum, magnesium, copper, bearing metals, die casting, powder metallurgy, surface treatment, new metals and applications, and welding metallurgy. (2 contact hrs) South Campus.

ATMT-1650 — Millwright Theory — Millwright Theory 1 — 2.00 credit hours

- Prerequisite: None
(formerly ATT 165) The proper use of tools and equipment used by the industrial millwright will be studied. The principles of machinery and equipment, i.e., screw threads, flat belts, belt splicing, structural steel, wire rope, wire rope fittings, slings, hoisting chains, grinding wheels, and metal saws will also be studied. (2 contact hrs) South Campus.

ATMT-1660 — Millwright Theory — Millwright Theory 2 — 2.00 credit hours

- Prerequisite: ATMT-1650
(formerly ATT 166) Mechanical power transmission equipment principles of anti-friction bearings, bearing life and failure, bearing maintenance, mounting of bearings, trouble shooting, couplings, universal joints, drive chains, speed reducers, V-belts, mechanical fasteners, lubrication. (2 contact hrs) South Campus.

ATMT-1700 — Thermoplastic & Thermosetting Materials — 2.00 credit hours

- Prerequisite: None
(formerly ATT 170) A practical overview of the plastics industry, sources of plastics and typical plastic applications. The basic chemistry of polymers, material properties, cost and composition of both thermoplastic and thermosetting materials are studied. The fundamentals for material selection, testing procedures and product design are reviewed. Plastics to be studied include engineering resins, elastomers, reinforced materials and high strength composites. (2 contact hrs) South Campus.

ATMT-1750 — Plastic Product Design & Tooling — 2.00 credit hours

- Prerequisite: None
(formerly ATT 175) A course focusing on plastic product and tooling design, including the product design process, designing for assembly, machining, finishing and decorating of plastic. Material selection is reviewed including injection systems, ejection systems, undercuts and mold components. Students will complete a comprehensive plastic product design. (2 contact hrs) South Campus.

ATMT-1950 — Science — Physics 1: Mechanics — 2.00 credit hours

- Prerequisite: ATAM-2150 or consent of apprenticeship coordinator
(formerly ATT 195) A study of measurement; molecular motion; liquid pressure and Pascal's law; force systems; rectilinear motion; work power and energy; momentum and simple machine elements. Emphasis is on practical application utilizing the English engineering system of units. (2 contact hrs) South Campus.

ATMT-2210 — Plastic Mold & Die Cast Die Theory — 2.00 credit hours

- Prerequisite: None
(formerly ATT 221) Plastic molding processes and the construction and engineering requirements of molds used for each molding process. The various mold making techniques, materials and fabrication techniques used to manufacture molds. Engineering and design specifications for mold construction and costing are studied. (2 contact hrs) South Campus.

ATMT-2250 — Machine Theory — Modern Metal Removal Processes — 2.00 credit hours

- Prerequisite: None
(formerly ATT 225) Introduction to the latest non-traditional machining methods. Basic concepts and applications of abrasive jet, ultrasonic machining, electrochemical machining, electrolytic grinding, electrical discharge machining, ion beam, laser, electron beam are studied. (2 contact hrs) South Campus.

ATMT-2270 — Computer Numerical Control Concepts 1 — 2.00 credit hours

- Prerequisite: ATMT-1210 or ATMT-1250 or related work experience
- Corequisite: ATAM-2150
(formerly ATT 227) Beginning theory and application of computer numerical control; the machine tools; providing computer basics, the design requirements, process planning and functional CNC experiments. (2 contact hrs) South Campus.

ATMT-2280 — Computer Numerical Control Concepts 2 — 2.00 credit hours

- Prerequisite: ATMT-2270 or ATAM-2150 or related work experience
(formerly ATT 228) Advanced theory and application of computer numerical control; the machine tools, providing advanced computer concepts, design requirements, process planning, functional CNC experiments. (2 contact hrs) South Campus.

ATMT-2350 — Metallurgy — Heat Treatment of Ferrous Alloys — 2.00 credit hours

- Prerequisite: ATMT-1300 or related work experience
(formerly ATT 235) First six weeks covers basic metallurgy, iron-carbon diagram, S Curves, tempering curves, mechanics of quenching, furnace design, furnace atmospheres, theory of alloy additions and liquid heating baths. Seventh through 14th weeks involve the study of characteristics, selection and heat treatment of tool steels from water hardening to high speed steels and special alloys. (2 contact hrs) South Campus.

ATPP — Plumbing & Pipefitting

ATPP-1100 — Plumbing Fundamentals — 2.00 credit hours

- Prerequisite: ATAM-1150 or ATAM-1160 or consent of apprenticeship coordinator (formerly ATP 110) Specifications, applications, and maintenance of pipes, fittings, and valves. Provides a basic knowledge of simple pipe calculations and template development. A study of tools used in piping. Proper valve installation and maintenance. Consideration of safe working pressures of pipes and valves. (2 contact hrs) South Campus.

ATPP-1110 — Plumbing — Drain, Waste & Vent — 2.00 credit hours

- Prerequisite: ATAM-1150 or ATAM-1160 or consent of apprenticeship coordinator (formerly ATP 111) Proper materials of sewer, soil, vent, and waste pipes. The principles of drainage flow and proper venting. A study of traps and installation of unit sanitation equipment. Includes a study of joints and fittings used on drainage systems. (2 contact hrs) South Campus.

ATPP-1120 — Plumbing — Heating — 2.00 credit hours

- Prerequisite: ATPP-1100 (formerly ATP 112) Principles of steam and hydronic heating. The various types of steam systems in use. The proper sizing and trapping of steam units. An extensive study of hydronic heating including: one pipe, two pipe, high temperature and pressure systems. Considerations will be given to heat loss calculations and the design of hydronic systems. (2 contact hrs) South Campus.

ATPP-1130 — Plumbing — Code — 2.00 credit hours

- Prerequisite: ATPP-1100 (formerly ATP 113) Plumbing rules and regulations governing installation of plumbing systems. Considerations are also given to the rules and regulations pertaining to joints, traps, cleanouts, water distribution, fixtures and drainage. (2 contact hrs) South Campus.

ATPP-1140 — Pipefitting — Power Piping Systems — 3.00 credit hours

- Prerequisite: ATPP-1100 and ATWD-1110, or consent of apprenticeship coordinator or related work experience (formerly ATP 114) Introduction to maintenance for power piping systems, steam, gas, water, and air. The study of generating power for industrial application and conversion of water to steam for power. Considerations are also given to safety, definitions, and application of piping terms; materials such as hangars, flanges, valves, and gaskets for the various systems are included. Specifications standards of threaded and welded systems, fabrication, including welding hot and cold bending of steel and tubing, are thoroughly examined. (3 contact hrs) South Campus.

ATPP-1150 — Pipe Fitting Fundamentals — 3.00 credit hours

- Prerequisite: None (formerly ATPP-2913) A study of piping, joints, fittings, valves, hangers, fluid flow in pipes, and pumps. An overview Steam Fitting, Hydronic Fitting, and Refrigeration Fitting. (3 contact hrs) South Campus.

ATRA — Refrigeration & Air Conditioning

ATRA-1100 — Refrigeration — Fundamentals — 2.00 credit hours

- Prerequisite: ATAM-1150 or ATAM-1350 (formerly ATR 110) Practical refrigerating principles for the maintenance and operating engineer. Topics covered are fundamentals and basic theory of refrigeration cycles, compression systems and components, refrigerants, controls, lubrication, accessories, and absorption systems. (2 contact hrs) South Campus.

ATSS — Stationary Steam

ATSS-1150 — Steam — Heat Fundamentals — 2.00 credit hours

- Prerequisite: ATAM-1150 or ATAM-1350 (formerly ATS 115) Basic physics concepts such as force, pressure, work, energy, matter, heat, temperature, transfer and effect of heat, expansion and contraction of solids and liquids, heat phenomena of gases, melting and freezing of substances, vaporization, and steam and other vapors. (2 contact hrs) South Campus.

ATSS-1160 — Steam — Steam Boilers (Low & High Pressure Operations) — 2.00 credit hours

- Prerequisite: ATSS-1150 or ATAM-1150 or consent of apprenticeship coordinator or related work experience (formerly ATS 116) Covers firetube, watertube, and package boilers, and their appurtenances. Includes boiler operation and safety in firing oil, gas, stokers and pulverized fuels. Explains requirements for good combustion and how to maintain them. Also includes maintenance and repair procedures on the boiler proper including tubes, fans, air preheater, superheater and economizers with stress on proper selection of materials and their location. Auxiliaries such as coal pulverizers and coal burners. (2 contact hrs) South Campus.

ATTR — Applied Technology Related

ATTR-1000 — Trade Related Preparation — 3.00 credit hours

- Prerequisite: None (formerly ATV 100) These questions: “What are skilled tradesmen, and what do they do?” are explored through an exposure to industrial processes. Spatial perception is enhanced by doing orthographic projection sketches. The shop uses of the scales and micrometer are covered. A study of some simple machines will enhance mechanical comprehension. There is also a review of math relative to shop application. The student receives diagnostic evaluation through testing in basic math, reading, and comprehension. (3 contact hrs) South Campus.

ATTR-1150 — Technical Report Writing — 2.00 credit hours

- Prerequisite: None (formerly ATV 115) Principles of effective industrial reports and letters; industrial reports; obtaining data; analysis of data; outlining and organizing of materials; letter writing techniques. (2 contact hrs) South Campus.

ATTR-1600 — Industrial Safety — Skilled Trades — 2.00 credit hours

- Prerequisite: None (formerly ATV 160) Encompasses safety/health rules, procedures, safety responsibilities, and hazard recognition associated with the following: lockouts, machine tools, machine guarding, hand tools, portable power tools, safe use of energy sources, powered trucks, material handling, hazardous materials, lifting, climbing, ladders, scaffolds, rigging, slings, ropes, cranes, hoists, and basic fire safety. Accident causation, impact, prevention, and basic human anatomy and physiology will be studied. (2 contact hrs) South Campus.

ATWD — Welding

ATWD-1100 — Welding Metallurgy — 2.00 credit hours

- Prerequisite: None (formerly ATW 110) The student shall study the metallurgy of welding, the types of steel and their manufacture, the welding methods and processes, the temperature change in welding, the structure and the properties of metals, the effects of alloying elements, fluxes, slags, gases for welding, the simple welds in iron and steel. (2 contact hrs) South Campus.

ATWD-1110 — Fundamentals of Gas & Arc Welding — 2.00 credit hours

- Prerequisite: None
(formerly ATW 111) The student shall know how to set up and operate gas welding and shielded metal arc welding equipment and safely function in a welding shop. The student shall weld various joints using gas welding and arc welding processes in the flat position. (2 contact hrs) South Campus.

ATWD-1130 — Shielded Metal Arc Welding 1 (SMAW) — 2.00 credit hours

- Prerequisite: ATWD-1110
(formerly ATW 113) The student shall know how to set up, select electrodes and operate arc welding equipment and safely function in a welding shop. The student shall pass an open-butt joint in the flat position tested in accordance with A.W.S. procedures. (2 contact hrs) South Campus.

ATWD-1140 — Gas Metal Arc Welding (MIG) — 2.00 credit hours

- Prerequisite: None
(formerly ATW 114) The student shall write procedures, fabricate sample welds using the GMAW process of the basic joints in the flat position. These welds are to be made in various thicknesses of steel and aluminum. The testing of these welds should be in accordance with A.W.S. procedures. (2 contact hrs) South Campus.

ATWD-1150 — Gas Tungsten Arc Welding (TIG) — 3.00 credit hours

- Prerequisite: ATWD-1110
(formerly ATW 115) The student shall know how to set up and safely operate the GTAW welding equipment, select the proper filler material and welding procedure, and weld shielding gas. The student shall pass bend test of groove joints in steel and aluminum using different filler metal, metal thickness, and shielding gases in the flat position. The weld tests are to be done in accordance with the A.W.S. procedures. (4 contact hrs) South Campus.

ATWD-1160 — Advanced Welding & Welder Certification (SMAW) — 3.00 credit hours

- Prerequisite: ATWD-1130
(formerly ATW 116A) The student shall write welding procedures, fabricate sample weldments in the vertical and overhead positions in the SMAW process. The testing of the welds shall be in accordance with A.W.S. procedures and welding codes. The student will receive welder certification upon completion of the welding tests within the requirements of the welding codes. May be taken twice for credit. (4 contact hrs) South Campus.

ATWD-1161 — Advanced Welding & Welder Certification (GMAW) — 3.00 credit hours

- Prerequisite: ATWD-1140
(formerly ATW 116B) The student shall write welding procedures, fabricate sample weldments in the vertical and overhead positions in the GMAW process. The testing of the welds shall be in accordance with A.W.S. procedures and welding codes. The student will receive welder certification upon completion of the welding tests within the requirements of the welding codes. May be taken twice for credit. (4 contact hrs) South Campus.

ATWD-1162 — Advanced Welding & Welder Certification (GTAW) — 3.00 credit hours

- Prerequisite: ATWD-1150
(formerly ATW 116C) The student shall write welding procedures, fabricate sample weldments in the vertical and overhead positions in the GTAW process. The testing of the welds shall be in accordance with A.W.S. procedures and welding codes. The student will receive welder certification upon completion of the welding tests within the requirements of the welding codes. May be taken twice for credit. (4 contact hrs) South Campus.

ATWD-1163 — Advanced Welding & Welder Certification (Pipewelding) — 3.00 credit hours

- Prerequisite: ATWD-1130 or ATWD-1140 or ATWD-1150 (formerly ATW 116D) The student shall write welding procedures, fabricate sample weldments in the vertical and overhead positions in the pipewelding process. The testing of the welds shall be in accordance with A.W.S. procedures and welding codes. The student will receive welder certification upon completion of the welding tests within the requirements of the welding codes. May be taken twice for credit. (4 contact hrs) South Campus.

ATWD-1164 — Advanced Welding & Welder Certification (Special Testing) — 3.00 credit hours

- Prerequisite: ATWD-1130 or ATWD-1140 or ATWD-1150 (formerly ATW 116E) The student shall write welding procedures, fabricate sample weldments in the vertical and overhead positions in the Special Testing process. The testing of the welds shall be in accordance with A.W.S. procedures and welding codes. The student will receive welder certification upon completion of the welding tests within the requirements of the welding codes. May be taken twice for credit. (4 contact hrs) South Campus.

ATWD-2390 — Welding Codes & Certification — 3.00 credit hours

- Prerequisite: ATWD-1150 (formerly ATW 239) The student shall demonstrate his ability to use the welding codes to solve welding supervision problems. The student shall write a weld qualification procedure, qualify the procedure by the required tests, and pass the weld or qualification test necessary for certification in a process available selected by the students. (4 contact hrs) South Campus. Winter semester of odd years.

ATWD-2400 — Maintenance Welding — 3.00 credit hours

- Prerequisite: ATWD-1150 or related work experience (formerly ATW 240) The student shall know the welding procedure and demonstrate proficiency in: soldering, silver brazing, aluminum brazing, hard surfacing, spray metallizing arc cutting, cast iron welding, plasma arc welding, flame bending and straightening and plastic welding. The student shall complete three repair projects complete with written procedures. (4 contact hrs) South Campus. Winter semester of even years.

ATWD-2420 — Tool & Die Welding — 3.00 credit hours

- Prerequisite: ATWD-1150 or related work experience (formerly ATW 242) The student shall study tool and die steels, their heat treatment, tempering and chemical analysis with emphasis on filler metal selection and welding procedures used in repair and fabrication with tool and die steels. The student shall weld samples with tool and die electrodes using different welding processes. (4 contact hrs) South Campus. Fall semester of odd years.

AUTO — Automotive Technology

AUTO-1000 — Automotive Systems — 3.00 credit hours

- Prerequisite: None (formerly AUT 100) This course provides an introduction of today's automobile. The course offers student exposure to the various pieces of shop equipment and details of the automotive service business. A working knowledge of the basic automotive components and general maintenance necessary for vehicle operation will be emphasized. An introduction to Hybrid Electric Vehicles (HEV) will be included in this course. The inclusion of this material will lead to students with an understanding of Hybrid Electric Vehicle technology. (4 contact hrs) South Campus.

AUTO-1010 — Automotive Electrical Systems — 3.00 credit hours

- Prerequisite: None
(formerly AUT 101) This course provides an introduction to the fundamentals of electricity. This course will focus on a working knowledge of the basic automotive electrical systems, components, and general diagnosis. Emphasis is placed on locating and interpreting specifications, electrical tests, and correct use of meters and test equipment. (4 contact hrs) South Campus.

AUTO-1030 — Automotive Electronics — 3.00 credit hours

- Prerequisite: AUTO-1000 and AUTO-1010
(formerly AUT 103) This course will focus on the operation and application of vehicle's electronic controlled circuitry and locating the components on the vehicles. It introduces semi-conductors and microprocessors to facilitate the understanding of components used on automotive electronic systems. On-bench and on-car practical exercises provide additional substance to the course and reinforce classroom learning. (4 contact hrs) South Campus.

AUTO-1100 — Automotive Brake Systems — 3.00 credit hours

- Prerequisite: None
A study of the principles and theory of both disc and drum brake designs. Emphasis placed on inspection, parts replacement, diagnosis, use of specifications, special tools and machining operations. (4 contact hrs) South Campus.

AUTO-1110 — Automotive Suspension Component Service — 2.00 credit hours

- Prerequisite: None
A study of the principles and theory of suspension designs. Emphasis is placed on Part identification, inspection and replacement, safety procedures and use of special tools. (3 contact hrs) South Campus.

AUTO-1120 — Automotive Suspension Alignment Procedures — 2.00 credit hours

- Prerequisite: AUTO-1110
(formerly AUT 112) This course covers the principles and theory of 4 wheel geometric suspension angles. It emphasizes the measuring, adjusting, and utilization of specifications to perform alignments using state-of-the-art equipment. (3 contact hrs) South Campus.

AUTO-1200 — Automotive Engines — 3.00 credit hours

- Prerequisite: None
Provides the student with practical experience rebuilding engines (engines will be provided for class use). The students will use engines, parts, precision measuring tools, and other related tools to rebuild engines. (4 contact hrs) South Campus.

AUTO-1270 — Small Engine Service/Repair — 2.00 credit hours

- Prerequisite: None
(formerly AUT 127) This course will focus on servicing and repairing of two and four cycle engines. The class will service and repair mechanical, ignition, electrical, fuel, cooling, and starting systems. Disassembly, inspection for wear, assembly, and proper serviceability techniques using appropriate materials and proper check procedures for service/repair are stressed. (3 contact hrs) South Campus.

AUTO-1320 — Automotive — Automatic Transmission Theory & Diagnosis — 2.00 credit hours

- Prerequisite: None
(formerly AUT 132) A study of the theory of operation of the automatic transmission with a major emphasis on automatic transmission hydraulics. (3 contact hrs) South Campus.

AUTO-1330 — Automotive — Manual Transmission & Powertrain Systems — 3.00 credit hours

- Prerequisite: AUTO-1000 (formerly AUT 133) Designed to give the student a thorough understanding of the principle of torque multiplication and speed reduction through the use of gearing. The power developed in the engine is traced through the power train components. The class will service and repair clutches, transmissions, differentials, drive shafts, axles and transaxles. (4 contact hrs) South Campus.

AUTO-1400 — Automotive Starting & Charging Systems — 2.00 credit hours

- Prerequisite: AUTO-1000 and AUTO-1010 (formerly AUT 140) A study of the theory and operation of cranking and charging systems including their individual components. Emphasis is placed on system operation, circuitry, testing and diagnosis. State of the industry test equipment will be used by the student. (3 contact hrs) South Campus.

AUTO-1420 — Automotive Air Conditioning Theory & Service — 3.00 credit hours

- Prerequisite: AUTO-1000, AUTO-1010, and AUTO-1030 (formerly AUT 142) This course covers the theory of automotive heating, ventilation, air conditioning (HVAC) and its operation to maintain passenger comfort. Students will gain experience in the utilization of equipment necessary for on-car recovery, evacuation and recharging of automotive air conditioning systems. (4 contact hrs) South Campus.

AUTO-1440 — Hybrid Electric Vehicle Fundamentals — 3.00 credit hours

- Prerequisite: AUTO-1000, AUTO-1010, AUTO-1030, AUTO-1320, and AUTO-1400 This course provides an introduction to Hybrid Electric Vehicles (HEV). Material covered includes hybrid batteries, regenerative braking, safety procedures, and hybrid maintenance and diagnostics. (4 contact hrs) South Campus.

AUTO-1520 — Automotive Fuel Systems — 3.00 credit hours

- Prerequisite: AUTO-1000, AUTO-1010, and AUTO-1030 (formerly AUT 152) This course provides a comprehensive study of modern automotive fuel systems and how they have evolved, including theory, principles of operation, inspection and repair. Experiences will include the testing of computer controlled inputs and outputs as well as the testing of fuel properties. (4 contact hrs) South Campus.

AUTO-1530 — Automotive Ignition & Emission Systems — 3.00 credit hours

- Prerequisite: AUTO-1000, AUTO-1010 and AUTO-1520 (replaces AUTO-1500 and AUTO-1510 together but does not equate to either course separately) AUTO-1530 provides students with a study of current automotive ignition systems, including distributorless and coil-on-plug ignition systems as well as their relationship to tailpipe emissions. It also covers primary and secondary ignition component testing and diagnosis. It also emphasizes pollutant and non-pollutant emissions, 5 gas analysis, federal test procedures, local and state laws as well as vehicle emission systems. (4 contact hrs) South Campus.

AUTO-1550 — Diesel Engine Theory & Fuel Systems — 3.00 credit hours

- Prerequisite: AUTO-1000 and AUTO-1010 (replaces but does not equate to AUTO-2914) This course focuses on the principles of diesel operation and fuel systems as they relate to modern passenger vehicles and light duty truck applications. Topics include diesel and gasoline fuel properties, electronic fuel injection, filtration, primary and secondary fuel distribution, and emissions and driveability. (4 contact hrs) South Campus.

AUTO-2190 — Automotive Brakes & Suspension Laboratory — 3.00 credit hours

- Prerequisite: AUTO-1100, AUTO-1110, and AUTO-1120, or related work experience (formerly AUT 219) Provides the student with actual brake and suspension service experience. Complete brakes and suspension diagnosing and repair procedures will be emphasized. (5 contact hrs) South Campus.

AUTO-2191 — Automotive Brakes & Suspension Laboratory — CAT — 5.00 credit hours

- Prerequisite: AUTO-1100 and AUTO-1110 and AUTO-1120 (formerly AUTO-2911) This course provides laboratory experience in servicing brakes and suspensions and emphasizes brakes and suspension diagnostic and repair procedures. All lab activities will follow the NATEF (ASE) task list. (7.5 contact hrs) South Campus.

AUTO-2200 — Automotive Upper Engine Service — 3.00 credit hours

- Prerequisite: AUTO-1200 (formerly AUT 220) Provides the student with actual upper engine service procedures with hands-on experience. Covers the use of valve grinders, head shop, magnetic particle inspection, and cleaning equipment. Surface grinder for head and manifold work will be utilized. (4 contact hrs) South Campus.

AUTO-2210 — Automotive Lower Engine Service — 3.00 credit hours

- Prerequisite: AUTO-1200 (formerly AUT 221) Provides the student with actual lower engine procedures with hands-on experience. Covers the use of lower block cleaning equipment, engine boring, crankshaft polishing and camshaft bearing tools. The class will cover the fitting of rods, pistons, and cover the use of the surface grinder for lower block squaring. (4 contact hrs) South Campus.

AUTO-2290 — Automotive Engine Laboratory — 3.00 credit hours

- Prerequisite: AUTO-1200, AUTO-2200, and AUTO-2210 (formerly AUT 229) Provides the student with actual engine diagnosis and reconditioning procedures. Major and minor engine service will be analyzed and estimates made for parts and labor repairs. (5 contact hrs) South Campus.

AUTO-2300 — Rear Wheel Drive Automatic Transmission Service — 2.00 credit hours

- Prerequisite: AUTO-1320 (formerly AUT 230) The emphasis of the course is on RWD automatic transmission disassembly, measurement, inspection, overhaul, and assembly of various RWD automatic transmissions. R & R procedures and trans-dyno testing will also be covered. (3 contact hrs) South Campus.

AUTO-2310 — Front Wheel Drive Automatic Transmission Service — 2.00 credit hours

- Prerequisite: AUTO-1320 (formerly AUT 231) The emphasis of this course is on FWD automatic transaxle disassembly, measurements, inspection, overhaul and assembly of various FWD automatic transaxles. R & R procedures and trans-dyno testing will also be covered. (3 contact hrs) South Campus.

AUTO-2390 — Automotive Driveline Laboratory — 3.00 credit hours

- Prerequisite: AUTO-1320, AUTO-1330, AUTO-2300, and AUTO-2310; or related work experience (formerly AUT 239) Provides laboratory experience in servicing of various manual and automatic transmissions, transaxle and rear axle components. Emphasis is placed on live job activities. (5 contact hrs) South Campus.

AUTO-2410 — Advanced Automotive Electronics — 2.00 credit hours

- Prerequisite: AUTO-1030 or related work experience (formerly AUT 241) This course is designed to provide the student with the latest state-of-the-art technology as related to automotive electronics. This course will focus on such criteria as: test equipment for solid state circuitry, electronic cruise control, level ride, travel assist and driver information centers, keyless entry system, and sound systems including service. On-bench and on-car practical exercises are featured with the classroom activities. (2 contact hrs) South Campus.

AUTO-2440 — Hybrid Electric Vehicle Power Management — 3.00 credit hours

- Prerequisite: AUTO-1440

This course is a study in the practical application of the Hybrid Electric Vehicle's power management system. Areas of study will include computer controls of the Internal Combustion Engine (ICE) and electric power plant. Service procedures and diagnostic procedures will be covered. (4 contact hrs) South Campus.

AUTO-2490 — Automotive Electrical & Air Conditioning Laboratory — 3.00 credit hours

- Prerequisite: AUTO-1010, AUTO-1030, AUTO-1420, and AUTO-2410; or related work experience (formerly AUT 249) Provides laboratory experience in servicing of automotive electrical and air conditioning systems. Emphasis is placed on live job activities. (5 contact hrs) South Campus.

AUTO-2491 — Automotive Electrical & Air Conditioning Laboratory — CAT — 5.00 credit hours

- Prerequisite: Admission into the Automotive Technology - Comprehensive Automotive Training (CAT) program and AUTO-1010 and AUTO-1030 and AUTO-1420 (formerly AUTO-2912) This course provides laboratory experience in servicing automotive electrical and air conditioning systems and emphasizes electrical and air conditioning diagnostic and repair procedures. All lab activities will follow the NATEF (AES) task list. (7.5 contact hrs) South Campus.

AUTO-2500 — Automotive Driveability & Diagnosis — 3.00 credit hours

- Prerequisite: AUTO-1520 and AUTO-1530; or related work experience (formerly AUT 250) The course covers the proper procedures of tune-up and diagnosis of the automobile internal combustion engine. Emphasis is placed on isolating malfunctions to a particular system and following with the correct procedure to locate the exact problem. The student learns how to make an intelligent diagnosis according to the way in which the vehicle operates. Emphasis is placed on correct use of specifications, equipment, and interpreting test results. (4 contact hrs) South Campus.

AUTO-2590 — Automotive Driveability Lab — 3.00 credit hours

- Prerequisite: AUTO-1520, AUTO-1530 and AUTO-2500; or related work experience (formerly AUT 259) Provides the student with actual driveability diagnosis, emission and fuel system service experience. Complete diagnosis procedure will be stressed using the appropriate test equipment with an emphasis on troubleshooting and repair. (5 contact hrs) South Campus.

AUTO-2591 — Automotive Driveability Laboratory — CAT — 5.00 credit hours

- Prerequisite: Admission into the Automotive Technology - Comprehensive Automotive Training (CAT) program, and AUTO-1520 and AUTO-1530 (formerly AUTO-2918) This course covers actual driveability diagnosis, emissions, and fuel system service and stresses complete diagnostic procedures using the appropriate test equipment with an emphasis on troubleshooting and repair. All lab activities will follow the National Automotive Technicians Education Foundation (NATEF) task list. (7.5 contact hrs) South Campus.

AUTO-2810 — Dealership Experience 1 — 3.00 credit hours

- Prerequisite: Arrangement with Corporate Coordinator (formerly AUT 281) This course provides full-time, on-the-job experience. Fundamental principles and instructional theory derived from previous courses are applied to sponsoring dealership work setting, namely new car prepping, basic electrical and service operations. (40 contact hrs)

AUTO-2820 — Dealership Experience 2 — 3.00 credit hours

- Prerequisite: Arrangement with Corporate Coordinator (formerly AUT 282) This course provides hands-on experience. Fundamental principles and instructional theory derived from previous courses are applied to the sponsoring dealership work setting. Includes alignment, suspension, engine repair, ignition system service in dealership. (40 contact hrs)

AUTO-2830 — Dealership Experience 3 — 3.00 credit hours

- ▶ Prerequisite: Arrangement with Corporate Coordinator (formerly AUT 283) This course provides full-time, on-the-job experience. Fundamental principles and instructional theory derived from previous courses are applied to the sponsoring dealership service operations. Special Electronics GM set, transmissions, A/C in dealership. (40 contact hrs)

AUTO-2840 — Dealership Experience 4 — 3.00 credit hours

- ▶ Prerequisite: Arrangement with Corporate Coordinator (formerly AUT 284) This course provides full-time, on-the-job experience. Fundamental principles and instructional theory derived from previous courses are applied to the sponsoring dealership work operation (Fuel systems, automatic transmissions) in dealership. (40 contact hrs)

AUTO-2850 — Dealership Experience 5 — 3.00 credit hours

- ▶ Prerequisite: Arrangement with Corporate Coordinator (formerly AUT 285) This course provides full-time, on-the-job experience. Fundamental principles and instructional theory derived from previous courses are applied to the sponsoring dealership work setting, namely driveability and transmission servicing in dealership. (40 contact hrs)

BCOM — Business Communications

BCOM-2050 — Business Communications — 4.00 credit hours

- ▶ Prerequisite: None (formerly BCO 205) BCOM-2050 focuses on developing both written and verbal communication skills required in business and industry. Students conduct primary and secondary research, analyze the results, compile findings, and compose a formal business report. They also develop effective verbal and nonverbal communication skills, understand team dynamics, and enhance presentation skills. Students create an employment package using current strategies as well as formulate a variety of business messages using the latest social media technologies. (4 contact hrs)

BCOM-2060 — Advanced Business Communications — 4.00 credit hours

- ▶ Prerequisite: BCOM-2050
Emphasis on the development of business communication skills needed to support a rapidly changing environment. Information, communication, teamwork, presentations, reports and proposals, and listening skills are just Part of what is required to today's business professionals. Important aspects needed to be an effective Knowledge Worker will be presented, investigated, and discussed. (4 contact hrs)

BCOM-2070 — Technical Business Communications & Project Management Principles — 3.00 credit hours

- ▶ Prerequisite: BCOM-2050
The course will focus on the role of the business professional and the specific components required to successfully manage projects and systems. The course emphasizes managing information technology and communicating ideas to others through project management. Various projects will include an overview of current and emerging technologies impacting project management. (3 contact hrs)

BCOM-2080 — Business Communications for Public Service — 2.00 credit hours

- ▶ Prerequisite: None
This course develops entry-level skills in business letters and interoffice memoranda, technical writing, and resumes and employment interviews, specifically designed for Public Service personnel. (2 contact hrs)

BIOL — Biology

BIOL-1000 — General Biology 1 — 4.00 credit hours

- Prerequisite: None
(formerly BIO 100) An introductory lecture and laboratory course in basic biological principles aimed at an understanding of the life processes common to all living things. The major areas of emphasis include the chemical and cellular basis of life, reproduction, growth, development, heredity, evolution, and ecology. (7 contact hrs)

BIOL-1010 — General Biology 2 — 4.00 credit hours

- Prerequisite: BIOL-1000 with grade C or better
(formerly BIO 101) A lecture and laboratory course in principles of biological diversity: taxonomy and systematics, comparative physiology, evolution, and ecology of plants and animals. (7 contact hrs)

BIOL-1310 — Environmental Science — 4.00 credit hours

- Prerequisite: None
(formerly NATS-1310) This is a lecture/laboratory/field course that introduces the student to the principles of environmental science. Coverage includes basic ecological concepts, energy and material flow, growth and regulation of populations, community interactions, and the relationships of these topics to the role of humans in protecting and preserving world ecosystems. (5 contact hrs)

BIOL-1400 — Fundamentals of Nutrition — 3.00 credit hours

- Prerequisite: None
(formerly BIO 140) A study of the nature and role of human nutrition with emphasis on changing needs in life's cycle. The relationship between nutrition and health throughout life is explored. No lab. (3 contact hrs)

BIOL-2400 — General Microbiology — 4.00 credit hours

- Prerequisite: BIOL-1000 with grade C or better
(formerly BIO 240) An introduction to the study of bacteria and other microorganisms emphasizing the interrelationships of their anatomy, physiology, and biochemistry to their roles in the living environment. Designed to meet the requirements of the science major and preprofessional student. (6 contact hrs)

BIOL-2540 — Biotechnology — 4.00 credit hours

- Prerequisite: BIOL-1000 with grade C or better
(formerly BTEC-2540) This lecture and laboratory course studies the use of DNA, RNA and proteins to improve the quality of life. Designed for students interested in pursuing careers such as biotechnology, biochemistry, medicine, and pharmacy. (4 contact hrs) Center Campus.

BIOL-2710 — Human Physiological Anatomy — 6.00 credit hours

- Prerequisite: None
(formerly BIO 271) Students will NOT receive credit for both BIOL-2710 and BIOL-2310. This course is designed for students in Health and Human Services programs. It is an intensive lecture/laboratory course emphasizing the basic concepts and principles of human anatomy and physiology. BIOL-1000 is strongly recommended as a prerequisite to BIOL-2710 for those planning to transfer to a four-year health science program. (7 contact hrs)

BIOL-2730 — Pathogenic Microbiology — 4.00 credit hours

- Prerequisite: None
(formerly BIO 273) This lecture/laboratory course is designed for students in Health and Human Services programs. An introduction to the study of medically significant microorganisms from groups such as the viruses, bacteria, and fungi, emphasizing their relationships to mankind, especially pertaining to disease production. (6 contact hrs) Center Campus.

BLAW — Business Law

BLAW-1080 — Business Law 1 — 4.00 credit hours

- Prerequisite: None
(formerly BUSN-1080) This fundamentals course is designed to provide a comprehensive overview of the legal and social environment of business, contracts, sales, and lease of goods. (4 contact hrs)

BLAW-1090 — Business Law 2 — 4.00 credit hours

- Prerequisite: BLAW-1080
(formerly BUSN-1090) This fundamentals course is designed to provide a comprehensive overview of liability of the parties under negotiable instruments, debtor-creditor relationships, agency and employment, equal employment opportunity law, business organizations, and real property and estates. (4 contact hrs)

BUSN — Business

BUSN-1010 — Business Enterprise — 3.00 credit hours

- Prerequisite: None
(formerly BUS 101) A fundamentals course designed to provide a comprehensive overview of American business enterprise, an exposure to business operations (business ownership, management, finance, marketing, accounting, information management), a basis upon which to establish a realistic business-related career objective, and a stepping stone to advanced business courses. (3 contact hrs)

BUSN-1060 — Fundamentals of Global Logistics — 3.00 credit hours

- Prerequisite: None
This course focuses on logistics and supply chain activities with emphasis placed on transportation strategies, inventory management, warehousing, facility location, material handling, reverse logistics, and the integration of channel partners. (3 contact hrs)

BUSN-1210 — Entrepreneurship Fundamentals — 3.00 credit hours

- Prerequisite: None
This course focuses on the fundamentals of creating a new business venture from an entrepreneurial point-of-view. Emphasis will be placed on the entrepreneurial perspectives, the creation, financing, and growth of a new business opportunity. This is achieved through the completion of case studies, web exercises, current application assignments, and computer simulation exercises. (3 contact hrs)

BUSN-1220 — Franchising Fundamentals — 3.00 credit hours

- Prerequisite: None
BUSN-1220 focuses on the important aspects of starting, developing, and managing franchise operations from a franchisor and franchisee perspective. It emphasizes the feasibility of entrepreneurs converting an existing business into a franchising opportunity. It also emphasizes analyzing franchise opportunities, such as identifying locations, financing, royalties, international franchising opportunities, and the legal aspects of franchising. (3 contact hrs)

BUSN-1240 — Corporate Entrepreneurship — 3.00 credit hours

- Prerequisite: None
BUSN-1240 focuses on the importance of innovation and developing an environment of entrepreneurship within a corporation and business. Emphasis is placed on the climate and culture of an entrepreneurial organization, strategies for creating new business ventures, and strategies for transforming firms toward a more entrepreneurially focused organization. (3 contact hrs)

BUSN-1660 — Business Negotiations — 3.00 credit hours

■ Prerequisite: None

This course focuses on understanding and development of the principles, strategies, and tactics of effective negotiation and professional relationship management. Emphasis is placed on the development of negotiation techniques and preparation, buyer-supplier interactions, international negotiations, and conflict resolution. (3 contact hrs)

BUSN-2000 — Global Entrepreneurship — 3.00 credit hours

■ Prerequisite: None

This course focuses on how small companies recognize and seek out business opportunities worldwide, and explores the knowledge necessary to create a global start-up, acquire sustained competitive advantage, and make global venturing decisions based on threats faced by entrepreneurs in today's global economy. (3 contact hrs)

BUSN-2010 — Personal Money Management — 3.00 credit hours

■ Prerequisite: None

(formerly BUS 201) (former title: Personal Finance) Principles and practices of personal financial planning. Current and future financial issues are explored. Topics such as financial services, stocks, bonds, mutual funds, budgeting, insurance, real estate, estate planning, and taxes are addressed. (3 contact hrs)

BUSN-2020 — Personal Investment Fundamentals — 3.00 credit hours

■ Prerequisite: None

(replaces but does not equate to BUSN-2050) An introductory course designed for students who are interested in learning about personal investments in financial assets. Topics addressed include techniques for participating in security markets, analysis and valuation of equity securities, fixed-income securities, mutual funds, the international securities markets, retirement planning (401Ks, IRAs, pension plans, and annuities), and portfolio management. (3 contact hrs)

BUSN-2030 — Global Purchasing & Supply Chain Management — 3.00 credit hours

■ Prerequisite: None

This course is designed to introduce the student to the basic concepts of global purchasing. Key elements in this course include managing international logistics and customs operations; indirect transactions; supplier source development issues; cultural, pre-procurement and quality considerations; counter-trade; methods of payment; and evaluating quotations. (3 contact hrs)

BUSN-2060 — Corporate Responsibility — 3.00 credit hours

■ Prerequisite: None

BUSN-2060 provides students with a comprehensive overview of the roles and responsibilities of business in society. The topics covered include corporate social responsibility, legal and regulatory compliance, corporate governance, business ethics, and stakeholder relationships. (3 contact hrs)

BUSN-2100 — International Business — 3.00 credit hours

■ Prerequisite: None

(formerly BUS 210) An overview of international business designed to provide a global perspective on international trade. Focuses on the current international business environment, growth strategies, management issues, marketing strategies, economic and monetary issues, and regional economic integration. (3 contact hrs)

CHEM — Chemistry

CHEM-1050 — Introduction to General Chemistry — 4.00 credit hours

- Prerequisite: MATH-0070 proficiency (demonstrated by math placement score, completing MATH-0070 with grade C or better, being enrolled in a higher level math, or having higher level math on college transcript)
(formerly CHM 105) This course is intended for those students who have never had or need a review of high school chemistry, and for some degree programs (Health and Human Services and other career preparation programs) requiring a course in chemistry basics. Topics introduced include: math and measurement, atomic structure, chemical bonding, naming and formulas, treatment of chemical reactions, stoichiometry, gas laws, solutions, and acid-base chemistry. The laboratory component complements lecture material while introducing students to a variety of experimental techniques. (7 contact hrs)

CHEM-1060 — Introduction to Organic Chemistry & Biochemistry — 4.00 credit hours

- Prerequisite: CHEM-1050 with grade C or better, or equivalent
(formerly CHM 106) This course introduces basics of organic and biochemistry and meets the degree requirements for many health science fields. Organic chemistry topics include nomenclature, structure, and reactivity of hydrocarbons and functional groups. Biochemistry topics include structure, reactivity, and metabolism of carbohydrates, lipids, proteins, and nucleic acid. The laboratory component complements and reinforces the topics covered in lecture. This course is strongly recommended as preparation for CHEM-2260. (7 contact hrs)

CHEM-1170 — General Chemistry 1 — 4.00 credit hours

- Prerequisite: CHEM-1050 with grade C or better and MATH-1000 proficiency (demonstrated by math placement score, completing MATH-1000 with grade C or better, being enrolled in higher math, or having higher level math on transcript); or a passing score on the American Chemical Society Placement Test
(formerly CHM 117) This course, intended for those seeking a degree in science or a pre-professional program (e.g. engineering, pre-medical, etc.), examines the areas of atomic and molecular structure, chemical periodicity, chemical bonding, reactions and stoichiometry, thermodynamics, solutions, and gas laws. The laboratory component enhances the lecture topics and begins to develop the student's repertoire of laboratory skills. (7 contact hrs)

CHEM-1180 — General Chemistry 2 — 4.00 credit hours

- Prerequisite: CHEM-1170 with grade C or better
(formerly CHM 118) A continuation of CHEM-1170 with emphasis on kinetics, chemical equilibrium of gaseous and aqueous environments, acid-base interactions, electrochemistry, nuclear chemistry, and coordination compounds. The laboratory component develops more independent skills as students plan and implement a series of qualitative semimicro analyses of ions in addition to demonstrating lecture concepts. (8 contact hrs)

CHEM-2260 — Organic Chemistry 1 — 4.00 credit hours

- Prerequisite: CHEM-1180 with grade C or better
(formerly CHM 226) This course is intended for science majors or those in pre-professional programs (e.g., pre-medical, pre-pharmacy, etc.). The structure, nomenclature, preparation, and reactivity of aliphatic and aromatic compounds are studied, including reaction mechanisms, stereochemistry, conformational analysis, and bonding theories. Carbocation chemistry is also studied. Functional groups and the principles of organic synthesis are introduced. (4 contact hrs)

CHEM-2270 — Organic Chemistry Laboratory — 2.00 credit hours

- Prerequisite: CHEM-2260 with grade C or better (formerly CHM 227) This laboratory class introduces students to important organic chemistry techniques used for the purification and characterization of organic compounds (e.g., crystallization, melting point, distillation, chromatography, etc.). Molecular spectroscopy (NMR, IR, etc.) is incorporated with an emphasis on structure determination. A variety of organic syntheses are carried out to give students a hands-on experience with the range of reactions discussed in lecture. (7 contact hrs)

CHEM-2280 — Organic Chemistry 2 — 4.00 credit hours

- Prerequisite: CHEM-2260 with grade C or better (formerly CHM 228) This course is a continuation of CHEM-2260. Electrophilic and nucleophilic aromatic reactions are explored. The chemistry of the functional groups (alcohols, aldehydes, ketones, acids, acid derivatives, ethers, amines, thiols, etc.) is studied with a continuing emphasis on mechanisms. Organic synthesis is also a major theme of this course, including the role of carbanions. (4 contact hrs)

CHIN — Chinese Language & Culture

CHIN-1260 — Introduction to Chinese Language & Culture — 4.00 credit hours

- Prerequisite: None (formerly CHIN-2920) This course is designed to introduce students to the Chinese speaking world and Chinese vocabulary and grammatical structures necessary to express personal meaning on basic topics. Students will engage in these activities within contextualized cultural settings. The vocabulary and grammatical structures are integrated into interactive and communicative activities that emphasize all four language skills: speaking, listening, reading, and writing. Students are required to use computer based technology to practice these skills. (5 contact hrs)

CHIN-1270 — Chinese Language & Culture 2 — 4.00 credit hours

- Prerequisite: CHIN-1260 or two or more years of high school Chinese (formerly CHIN-2921) This course continues students' development of Chinese language and culture by building and expanding on the culture, vocabulary and language structures learned in CHIN-1260. New language functions will be presented in meaningful activities that emphasize all four language skills: speaking, listening, reading, and writing and allow for further cultural exposure. Students are required to use computer based technology to practice these skills. (5 contact hrs)

CIVL — Civil Technology

CIVL-1000 — Materials — 3.00 credit hours

- Prerequisite: None (formerly CIV 100) Introductory study of the nature, origin, properties, and use of construction materials. Elementary chemical nature of materials and their interactions. Field and laboratory test studies for identification, classification, and control. (3 contact hrs) South Campus.

CIVL-1010 — Civil Technology Seminar — 1.00 credit hours

- Prerequisite: None (formerly CIV 101) Designed to acquaint the student with the programs of study, nature of work performed by technicians, and opportunities available to them. (1 contact hr) South Campus.

CIVL-1050 — Construction Safety Policy & Procedures — 3.00 credit hours

- Prerequisite: None Introductory study of construction safety and the ethics of safety. Students will learn about the governing bodies, safety standards, and the responsibilities of the employees and the employers. (3 contact hrs) South Campus.

CIVL-2200 — Soils & Foundations — 3.00 credit hours

- Prerequisite: None
(formerly CIV 220) Elementary study of exploring, sampling, testing, and evaluating subsurface materials, and their effect on types of foundations and construction. (4 contact hrs) South Campus.

CIVL-2210 — Drainage & Geology — 3.00 credit hours

- Prerequisite: None
(formerly CIV 221) This course introduces the student to the study of basic fluid mechanics which includes the geology of streams, watersheds, flood plains, backwaters and drainage and their influence on design of drainage systems. (4 contact hrs) South Campus.

CIVL-2220 — Materials Testing — 3.00 credit hours

- Prerequisite: CIVL-1000
This course will emphasize field and laboratory test studies for identification, classification, and control of materials. Structure, composition, and engineering properties of aggregates, cement, steel, concrete, and asphalt. The student will create mix designs, practice quality control, create reports, and perform nondestructive testing. (4 contact hrs)

CLCT — Climate Control Technology

CLCT-1200 — Fundamentals of Air Conditioning & Refrigeration — 3.00 credit hours

- Prerequisite: None
(formerly CCT 120) Theory, application and principles of air conditioning and refrigeration; study of basic cycle, systems, system components, accessories and refrigerants. (4 contact hrs) South Campus.

CLCT-1300 — Refrigeration 1 — 3.00 credit hours

- Prerequisite: CLCT-1200 and CLCT-1700, or related work experience
(formerly CCT 130) Application, installation and servicing of domestic refrigeration systems, including operation and trouble analysis of hermetic units, compressors and electrical components. (4 contact hrs) South Campus.

CLCT-1400 — Air Conditioning 1 — 3.00 credit hours

- Prerequisite: CLCT-1200 and CLCT-1700, or related work experience
(formerly CCT 140) Residential air conditioning systems: application, selection, installation, piping and service, including basic psychometrics. (4 contact hrs) South Campus.

CLCT-1500 — Heating 1 — 3.00 credit hours

- Prerequisite: CLCT-1700 or related work experience
(formerly CCT 150) Fundamentals of warm air heating: including the function control, service and testing of major components for gas, oil and electric residential and light commercial systems. (4 contact hrs) South Campus.

CLCT-1600 — Duct Layout & Fabrication — 3.00 credit hours

- Prerequisite: None
(formerly CCT 160) Sheet metal layout fundamentals and fabrication techniques as applied to cooling, heating and ventilation duct work. (4 contact hrs) South Campus.

CLCT-1650 — Systems Design of Heating & Air Conditioning — 3.00 credit hours

- Prerequisite: None
(formerly CCT 165) Covers architectural house plan, through the heat load computation, heating and cooling equipment selection, energy code requirements, and duct sizing for a complete residential forced-air system. (4 contact hrs) South Campus.

CLCT-1700 — Fundamentals of Controls — 3.00 credit hours

- Prerequisite: None
(formerly CCT 170) Elementary control systems for air conditioning, heating and refrigeration. Theory and construction of schematic and pictorial wiring diagrams. Study of electrical system components. (4 contact hrs) South Campus.

CLCT-1750 — Intermediate Controls — 3.00 credit hours

- Prerequisite: CLCT-1700 or related work experience
(formerly CCT 175) Intermediate control systems for air conditioning, heating and refrigeration. Theory and construction of schematic and pictorial wiring diagrams related to the systems. (4 contact hrs) South Campus.

CLCT-2300 — Refrigeration 2 — 3.00 credit hours

- Prerequisite: CLCT-1300, CLCT-1650, and CLCT-1750; or related work experience
(formerly CCT 230) Commercial systems: application, calculation of heat loads, installation, piping and service. Includes operating and testing of low and medium temperature and multiple systems. (4 contact hrs) South Campus.

CLCT-2350 — Mechanical Codes — 3.00 credit hours

- Prerequisite: CLCT-1200 and CLCT-1500 or industry field experience
(formerly CCT 235) Local and national codes governing the safe design, construction, installation, altering, servicing, testing and licensing as applied to mechanical heating, ventilating, air conditioning and refrigeration. (3 contact hrs) South Campus.

CLCT-2400 — Air Conditioning 2 — 3.00 credit hours

- Prerequisite: CLCT-1400, CLCT-1650, and CLCT-1750; or related work experience
(formerly CCT 240) Commercial systems: application, installation, piping and service. Includes heat pumps, absorption and centrifugal equipment, testing and balancing of systems. (4 contact hrs) South Campus.

CLCT-2500 — Heating 2 — 3.00 credit hours

- Prerequisite: CLCT-1500, CLCT-1650, and CLCT-1750; or related work experience
(formerly CCT 250) Trouble analysis and service of residential and commercial warm air heating systems: including humidifiers, electronic air cleaners, installation of oil tanks, piping for oil and gas units, and combustion testing. (4 contact hrs) South Campus.

CLCT-2550 — Steam & Hot Water Heating Systems — 3.00 credit hours

- Prerequisite: CLCT-1500, CLCT-1650, and CLCT-1750; or related work experience
(formerly CCT 255) CLCT-2550 covers the application of hot water and steam units for residential and light commercial systems: boilers, piping, circulators, heat transfer elements and controls. Topics include installation and service of both mechanical and electrical components. (4 contact hrs) South Campus.

CLCT-2700 — Advanced Controls — 3.00 credit hours

- Prerequisite: CLCT-1300, CLCT-1400, CLCT-1750, and CLCT-2550; or related work experience
(formerly CCT 270) Advanced control systems for regulating the air conditioning, heating and ventilation in commercial and industrial buildings. Pneumatic and electronic controls are used; emphasis on service and maintenance. (4 contact hrs) South Campus.

CORE — Mechanical Technology

CORE-1000 — Industrial Technology Fundamentals — 2.00 credit hours

- Prerequisite: None (formerly COR 100) An introductory course for students with little classroom or work related technical experience. The course will include an overview of both the technology and related terminology used in today's manufacturing and service industries. This class will provide a basis for continued studies in technological programs as well as providing a basis of understanding for students pursuing nontechnical degrees. (2 contact hrs) South Campus.

CORE-1060 — Industrial Computer Technology — 4.00 credit hours

- Prerequisite: None (formerly COR 106) This course is designed to provide students enrolled in technical programs an understanding of how the computer can be used as a tool to address a variety of situations utilizing multiple input sources common to industry. Word processing, spreadsheets with graphing capabilities, and illustration and drawing applications will be used by each student to develop a technical presentation. (4 contact hrs) South Campus.

CRER — Career Experience

CRER-1510 — Workplace Success Strategies — 1.00 credit hours

- Prerequisite: None (formerly CRER-2510) CRER-1510 is a fundamentals course that provides an overview of how work experience complements academic education to prepare students for the workforce. All students are encouraged to take this class especially those participating in an approved internship. (1 contact hr)

CRER-2100 — Internship Experience Part-Time — 0.00 credit hours

- Prerequisite: Internship Coordinator's approval of existing part-time internship (14-29 hours per week).
CRER-2100 provides students with supervised work experience in their field of study. This course may be taken eight times for credit. This course is graded on a pass/fail basis. (14-29 contact hrs per week for 16 wks)

CRER-2200 — Internship Experience Full-Time — 0.00 credit hours

- Prerequisite: Internship Coordinator's approval of existing full-time internship (30-40 hours per week).
CRER-2200 provides students with supervised work experience in their field of study. This course may be taken eight times for credit. (30-40 contact hrs per week for 16 wks)

CSSK - College Success Skills

CSSK-1200 — College Success Skills — 3.00 credit hours

- Prerequisite: None (formerly CSSK-1100) CSSK-1200 covers essential college skills such as time management, test taking, note taking, thinking and reasoning, managing stress, and work-life balance. In addition, effective ways of accessing information from various campus resources such as the library, learning center, and academic advising as well as identifying personality strengths, weaknesses, and interests to explore possible career paths will be taught. (3 contact hrs)

CULH — Culinary Arts

CULH-1050 — Culinary Techniques — 4.00 credit hours

- ▶ Prerequisite: None
- ▶ Corequisite: CULH-1155
(formerly CUL 105) CULH-1050 introduces students to the kitchen or “back of the house” operations. Students gain competence in culinary terms, equipment and utensil use, mise’ en place, sauces, stocks, soups, thickening agents, vegetables, potato/starch products, and pasta products. Students cook under the guidance of a chef-instructor. (6 contact hrs) Center Campus.

CULH-1155 — Sanitation — 2.00 credit hours

- ▶ Prerequisite: CULH-1050
(formerly CULH-1150) CULH-1155 is designed for supervisory personnel in Michigan food service establishments. Course content includes basic microbiology, safe food handling techniques, good hygienic practices, pest control, employee training, and the Michigan State law governing food service establishments. Upon successful completion, a student may earn Educational Foundation Certification credits for the National Restaurant Association ManageFirst(TM) program, and also satisfy a certification requirement for the American Culinary Federation. (2.0 contact hrs) Center Campus.

CULH-1200 — Cost Control — 3.00 credit hours

- ▶ Prerequisite: None
(formerly CUL 120) CULH-1200 relates principles of calculation to the food service industry. Recipe computations, food cost estimates, cash procedures, and payroll practices are studied. Upon successful exam completion, students may earn a certificate through the National Restaurant Association ManageFirst(TM) program. (3 contact hrs) Center Campus.

CULH-1255 — Table Service — 3.00 credit hours

- ▶ Prerequisite: None
(formerly CULH-1250) CULH-1255 introduces students to the dining room or “front-of-the-house” operations. By performing duties in the Center Stage restaurant, students gain competence in dining room operations and table service techniques. (3.5 contact hrs) Center Campus.

CULH-1310 — Culinary Skills Development — 4.00 credit hours

- ▶ Prerequisite: CULH-1050 and CULH-1155 with grade C or better and ServSafe certificate
(formerly CUL 131) CULH-1310 gives students a basic understanding of “back of the house” operations. It teaches the processing of meats, poultry, and seafood as well as pantry, breakfast preparation, and hot and cold hors d’oeuvres. Students cook under the guidance of a chef-instructor. (6 contact hrs) Center Campus.

CULH-1320 — International Kitchen — 5.00 credit hours

- ▶ Prerequisite: CULH-1050 and CULH-1155 and CULH-1310
(formerly CULH-1330) CULH-1320 involves the study of international foods and food culture. Students will prepare a variety of international dishes using standardized recipes in the commercial kitchen of our signature restaurant. Students will utilize the geographical spices that influence various regions of the world. Students cook under the direction of a chef-instructor. (8 contact hrs) Center Campus.

CULH-1340 — Production Baking — 4.00 credit hours

- ▶ Prerequisite: None
- ▶ Corequisite: CULH-1155
(formerly CUL 134) CULH-1340 gives students an understanding of baking, how breads and baked goods are produced, and teach the methods and skills used in this trade. Students learn to effectively produce a variety of breads, cakes, pies, and cookies. (6 contact hrs) Center Campus.

CULH-1400 — Supervision — 3.00 credit hours

- ▶ Prerequisite: None
(formerly CUL 140) CULH-1400 involves a study of the conditions that will confront the professional food supervisor or manager. The course covers supervisory procedures, management techniques, employee evaluation, training, and communication. Upon successful exam completion, students may earn a certificate through the National Restaurant Association ManageFirst (TM) program. (3 contact hrs) Center Campus.

CULH-1420 — Purchasing — 3.00 credit hours

- ▶ Prerequisite: None
CULH-1420 acquaints students with aspects of food and non-food purchasing for a quantity food operation. Upon successful exam completion, students may earn a certificate through the National Restaurant Association ManageFirst(TM) program. (3 contact hrs) Center Campus.

CULH-1430 — Menu Planning — 3.00 credit hours

- ▶ Prerequisite: CULH-1200
(formerly CUL 143) CULH-1430 emphasizes the importance of a menu in various food operations. The menu is considered to be the controlling factor in both commercial and noncommercial operations. Using a menu as a management tool in every area of operation - from planning the facility, purchasing food items, promoting items to customers, and providing excellent service - can help ensure success. Students plan and write a variety of menus. (3 contact hrs) Center Campus.

CULH-1440 — Beverage Service — 2.00 credit hours

- ▶ Prerequisite: None
(formerly CULH-2911) CULH-1440 involves a study of conditions that will confront the professional supervisor or manager in an establishment that serves beverages. This introductory class touches on wine, beer, spirits, and non-alcoholic beverages. It also covers purchasing, controls, equipment needs, and regulations. An additional fee is required for ServSafe(TM) Alcohol Awareness Training and Certification. (3 contact hrs)

CULH-2015 — A la Carte Dining — 4.00 credit hours

- ▶ Prerequisite: CULH-1155, CULH-1255, and CULH-1310
(formerly CULH-2010) Students rotate through assigned stations in our signature restaurant. They perform duties in the back and the front of the house. This includes applying American, Russian, and French table service styles in the dining room, as well as preparing items from an a la carte menu. Upon successful exam completion, students may earn a certificate through the National Restaurant Association ManageFirst (TM) program. (6 contact hrs) Center Campus.

CULH-2025 — Wine Appreciation — 2.00 credit hours

- ▶ Prerequisite: None
CULH-2025 introduces the learner to fundamental wine concepts, tasting, and how grapes are grown. It covers wine and food compatibility, wines of the new world, wines of the old world, other types of wine, and wine management. (3 contact hours) Center Campus.

CULH-2035 — Nutritional Cooking — 2.00 credit hours

- ▶ Prerequisite: CULH-1155 and CULH-1310
CULH-2035 addresses the highly demanding market of hospital, assisted living, institutional, and personal cooking. Students explore nutritional food preparation methods and techniques in one of the fastest growing sectors of the culinary field. (3 contact hrs) Center Campus.

CULH-2040 — Garde Manger — 3.00 credit hours

- ▶ Prerequisite: CULH-1050 and CULH-1155 and CULH-1310
(formerly CUL 204) CULH-2040 presents the artistic and decorative side of food preparation. Students are introduced to pates, hors d'oeuvres, canapes, aspics, marinations, brines, smoking, food sculpturing, and various decorative buffet presentations. (5 contact hrs) Center Campus.

CULH-2045 — Vegetarian Cuisine — 2.00 credit hours

- Prerequisite: CULH-1050, CULH-1155, and CULH-1310
CULH-2045 addresses the growing sector of vegetarians requesting meatless and/or no animal protein meals. Students prepare appetizers, soups, side dishes, and entrees. (3 contact hrs) Center Campus.

CULH-2050 — Catering — 3.00 credit hours

- Prerequisite: None
(formerly CUL 205) CULH-2050 gives students an overview of catering by highlighting and emphasizing the management and organizational responsibilities of a catered event. (3 contact hrs) Center Campus.

CULH-2080 — Wedding Cakes — 4.00 credit hours

- Prerequisite: CULH-1155 and CULH-1340 with grade C or better and a ServSafe certificate (formerly CULH-2915) CULH-2080 gives students an overall appreciation and understanding of wedding cakes. Students learn to effectively create different styles of wedding cakes using many techniques in a cost and time effective way. The class is not geared toward food competition, but toward putting these techniques in practice for the real world. (6 contact hrs) Center Campus.

CULH-2085 — The Art of Sculpted Cakes — 2.00 credit hours

- Prerequisite: CULH-1155 and CULH-1340 with grade of C or better and a ServSafe certificate
CULH-2085 introduces students to advanced cake decorating techniques used to create edible cake sculptures. Students learn to create the proper base and support structure as well as to create different styles of sculpted cakes. (3 contact hrs) Center Campus.

CULH-2100 — Centerpieces — 4.00 credit hours

- Prerequisite: None
(formerly CULH-2914) CULH-2100 gives students an overall appreciation and understanding of centerpieces used for displays. Students learn how to create gum paste and cast sugar centerpieces in a cost effective way to make them saleable for parties, sweet tables, weddings, etc. Many of the techniques learned may be used for pastry competitions. (6 contact hrs) Center Campus.

CULH-2120 — Chocolate Creations — 4.00 credit hours

- Prerequisite: CULH-2180
CULH-2120 gives students an overall appreciation and understanding of chocolate work. Students will learn to use chocolate and create candies, fillings, centerpieces, molds, and decorations. Many of the techniques learned may be used for pastry competitions. (6 contact hrs) Center Campus.

CULH-2160 — Plated Desserts — 4.00 credit hours

- Prerequisite: CULH-2180
CULH-2160 gives students an overall appreciation and understanding of plated desserts and the techniques used to create high quality, visually attractive desserts for restaurants, country clubs, and conference centers. (6 contact hrs) Center Campus.

CULH-2180 — Pastry Arts — 4.00 credit hours

- Prerequisite: CULH-1155 and CULH-1340 with grade C or better and a ServSafe certificate (formerly CULH-2020) CULH-2180 gives students an overall appreciation and understanding of fine pastries. Students learn to effectively produce a variety of specialty doughs, pastries, and desserts such as flans, tarts, individual and miniature pastries, souffles, chocolates, plated desserts, ice cream and sugar work, tortes and mousse tortes. (6 contact hrs) Center Campus.

CULH-2200 — Artisan & Special Breads — 4.00 credit hours

- Prerequisite: CULH-1155 and CULH-1340 with grade C or better and a ServSafe certificate (formerly CULH-2060) CULH-2200 gives students advanced training in producing breads, learning the artisan bread making techniques from the old world and from around the world, and producing effectively a variety of breads, decorated loaves, and bread centerpieces for parties, buffets, etc. (6 contact hrs) Center Campus.

DRAD — Drafting — Architectural

DRAD-1110 — Introduction to Architectural Drafting — 3.00 credit hours

- Prerequisite: None
(formerly DRAD-1180) This is a beginning course in architectural drafting fundamentals. The student will develop basic skills and techniques required for architectural drafting, lettering, line quality, symbol recognition, and term definition. Lab work will consist of exercises detailing various architectural elements and principles. The student will also practice these principles on various architectural drafting projects. Career opportunities, education, and duties will be discussed. The student will generate all drafting from the drawing board. (6 contact hrs) South Campus.

DRAD-1120 — Architectural Illustration 1 — 3.00 credit hours

- Prerequisite: None
(formerly DRAD-1100) The student will develop skills in illustrating architectural elements. The student will learn layout and illustrate these elements in two- and three-dimensional representation. Problems consist of designing and illustrating various presentation drawings. (6 contact hrs) South Campus.

DRAD-1140 — Residential Drafting & Design — 3.00 credit hours

- Prerequisite: DRAD-1110 and DRCG-1140, or high school equivalent with consent of program advisor (formerly DRCG-1190) This course is designed to provide the student with the information needed to design a residential building. In addition, the student will learn about the various component systems that make up a residential building. In the lab, the student will create a complete set of construction documents for a residential building. The student will be expected to generate drawing assignments from the drawing board and the computer using AutoCAD software. Design, production, accuracy, and craftsmanship will be stressed. (6 contact hrs) South Campus.

DRAD-1200 — History of Architecture — 3.00 credit hours

- Prerequisite: None
(formerly DAC 120) A historical study of the development of architecture; starting with a look at each of the periods of architecture, and progressing through to contemporary architecture and the problems therein. (3 contact hrs) South Campus.

DRAD-2090 — Architectural Commercial Drafting & Design — 3.00 credit hours

- Prerequisite: DRAD-1140
(formerly DRAD-1190) Emphasis is placed upon commercial and industrial construction design. Problems consist of existing structures, a medical clinic, storage facility, offices, lavatories, and laboratory. Introduction to technical aspects required in building design. Emphasizes greater use of materials, framing and section problems. Different types of drawings will be discussed and drawn such as reflective ceiling, electrical, equipment, structural steel, site, details and schedules. (6 contact hrs) South Campus.

DRAD-2110 — Applied Building Construction — 3.00 credit hours

- Prerequisite: None
(formerly CIVL-2110) This course acquaints the student with terminology, methods, procedures, materials, sequences of operation, types of construction, and planning involved in construction of buildings. (4 contact hrs) South Campus.

DRAD-2120 — Structural Detailing & Design — 3.00 credit hours

- Prerequisite: DRAD-1110
(formerly DAC 212) Course is designed to train the student to make detail drawings of structural members for fabrication. Includes working with architectural layouts, standard rolled steel cross sections, beams, plates, and angles in the design of structural members. Covers the design of structural elements in construction of buildings. Includes study of stresses, deflection, bending moments and column loading. (6 contact hrs) South Campus.

DRAD-2140 — Architectural Illustration 2 — 3.00 credit hours

- Prerequisite: DRAD-1120 and DRAD-1140
This course introduces color architectural illustration to the student. The student will learn to work with various fundamental color applications. Laboratory work will consist of exercises applicable to Architectural Illustration. The student will be expected to generate illustration assignments by hand and/or various computer graphic techniques. (6 contact hrs)

DRAD-2200 — Mechanical & Electrical Systems for Buildings — 3.00 credit hours

- Prerequisite: None
(formerly DAC 220) A study of the mechanical and electrical equipment used to control the environment in today's buildings and the principles and practical uses of such equipment. Among the topics studied are water supply, sanitary and storm drainage, heating, ventilation, air conditioning, electricity and lighting, fire protection, energy conservation techniques and solar energy. (3 contact hrs) South Campus.

DRAD-2220 — Architectural Design Procedures — 3.00 credit hours

- Prerequisite: DRAD-1140
(formerly DRAD-1210) A study of concepts and procedures essential to architectural design, including site analysis, programming, schematics, and design development. The student will solve a practical design problem and prepare a complete graphic solution. (6 contact hrs) South Campus.

DRAD-2230 — Construction Specifications — 3.00 credit hours

- Prerequisite: None
(formerly DRAD-2210) A survey of the content of various construction contracts and documents required as Part of the designing and construction of various building projects. General conditions, specifications, organization, addendums, bulletins, and terminology will be discussed. (3 contact hrs) South Campus.

DRAD-2280 — Architectural Drafting & Design Studio — 4.00 credit hours

- Prerequisite: DRAD-2090
(formerly DRAD-2190) Further emphasis is placed on commercial industrial design techniques. Introduction to structural framing, design of a building for multi-function purposes. Emphasizes foundation problems, sections, structures, varied details, and schedules. The student will also have to work with the material selection, material finish, functional flow diagrams, siting of the property, roads, walks, parking lots, and paving. (6 contact hrs) South Campus.

DRCG — Drafting & Computer Graphics**DRCG-1140 — Interactive Computer Graphics — Introduction to 2D & 3D AutoCAD — 4.00 credit hours**

- Prerequisite: None
(replaces DRCG-1100) This course is designed as an introduction to computer graphics using a PC-based system with AutoCAD software. This course covers computer graphic components, terms, and commands associated with AutoCAD software. This course covers basic file management, two-dimensional, and three-dimensional drawings. (6 contact hrs) South Campus.

EAPP — English for Academic Purposes**EAPP-1054 — Academic Speaking & Listening 1 — 4.00 credit hours**

- Prerequisite: Placement
(formerly EAPP-0054) In EAPP-1054, students will improve their ability to communicate fluently and accurately in academic environments. Students will practice listening to short speeches, communicating in groups, and speaking about academic topics. Correct pronunciation, rhythms of speech, and use of idioms are emphasized. (4 contact hrs)

EAPP-1100 — Integrated Skills & Preparatory Composition 1 — 4.00 credit hours

- Prerequisite: Placement (formerly ESLL-1010) This course introduces students to academic English through writing, reading, speaking, and listening activities. Students will practice using different verb tenses, making questions, learning prepositions, and using adjectives to describe people and places. Students will improve vocabulary and spelling. Regular use of computer lab is included. (5 contact hrs)

EAPP-1150 — Extensive Reading 1 — 4.00 credit hours

- Prerequisite: Placement (formerly ESLL-2914) In this course, students in the lower level of the placement range select and read books (primarily classic novels and biographies) that have been written (or rewritten in the case of classic literature) at their ability level. As they read many pages of interesting material, they increase their word recognition ability and general vocabulary, become fluent readers, and learn to enjoy reading in English. Brief oral and written book reports are required. (4 contact hrs)

EAPP-1200 — Integrated Skills & Preparatory Composition 2 — 4.00 credit hours

- Prerequisite: EAPP-1100 with grade C or better, or placement (formerly ESLL-1020) This course improves students' academic English through writing, reading, speaking, and listening activities. Students will practice more grammatical structures such as verb tenses, modals, adjectives, and adverbs. Students will write paragraphs using simple and complex sentences. Students will improve vocabulary and spelling. Regular use of computer lab is included. (5 contact hrs)

EAPP-1254 — Academic Speaking & Listening 2 — 4.00 credit hours

- Prerequisite: EAPP-1054 with grade C or better, or COMPASS ESL Listening score 65 or above In EAPP-1254, students will continue to improve their ability to communicate fluently and accurately in academic environments. Students will practice listening to academic lectures, communicating in groups, and giving speeches on academic topics. Correct pronunciation, rhythms of speech, and use of idioms are emphasized. (4 contact hrs)

EAPP-1300 — Integrated Skills & Preparatory Composition 3 — 4.00 credit hours

- Prerequisite: EAPP-1200 with grade C or better, or placement (formerly ESLL-1030) This course improves students' academic English through writing, reading, speaking, and listening activities. Students will practice more verb tenses, including the present perfect, as well as modals, gerunds, and infinitives. Students will use new structures, vocabulary, and complex sentences in longer paragraphs. Regular use of computer lab is also included. (5 contact hrs)

EAPP-1350 — Extensive Reading 2 — 4.00 credit hours

- Prerequisite: EAPP-1150 with grade C or better, or placement In this course, students in the upper level of the placement range select and read books (primarily classic novels and biographies) that have been written (or rewritten in the case of classic literature) at their ability level. As they read many pages of interesting material, they increase their word recognition ability and general vocabulary, become fluent readers, and learn to enjoy reading in English. Brief oral and written book reports are required. (4 contact hrs)

EAPP-1400 — Integrated Skills & Preparatory Composition 4 — 4.00 credit hours

- Prerequisite: EAPP-1300 with grade C or better, or placement (formerly ESLL-1040) This course improves students' academic English through writing, reading, speaking, and listening activities with a focus on writing and grammar. Students will practice advanced verb tenses, modals in the past, and other advanced grammar structures. Students will write both extended paragraphs and summaries using new structures and vocabulary. Students will improve their academic vocabulary. Regular use of computer lab is also included. (5 contact hrs)

EAPP-1500 — Integrated Skills & Preparatory Composition 5 — 4.00 credit hours

- Prerequisite: EAPP-1400 with grade C or better, or placement (formerly ESLL-1050) This advanced course provides a bridge from EAPP classes to English composition courses. It also prepares students for academic work in other college classes. Students will review grammatical structures and sentence structure with a focus on using a variety of sentence types. Students will write paragraphs, summaries, and essays using new structures and vocabulary. Students will continue to improve their academic vocabulary. Regular use of computer lab is also included. (5 contact hrs)

ECHS — Early Childhood Studies

ECHS-1100 — Early Childhood Development — 4.00 credit hours

- Prerequisite: None (formerly ECH 110) This course emphasizes developmental processes of the young child to age nine, including the physical, social, emotional and cognitive changes. It covers the influence of environment on the developing child's emerging sense of self-esteem and introduces various methods of observing and assessing children. Students will complete 30 hours of observation in a preschool or child care center with preschool age children. (4 contact hrs) Center Campus.

ECHS-1150 — Infant-Toddler Development & Curriculum — 4.00 credit hours

- Prerequisite: None (formerly ECHS 1540) This course focuses on growth and development of infants and toddlers as it relates to planning safe, stimulating, and developmentally appropriate environments. Schedules and activities will be planned to promote social/emotional, cognitive, language and aesthetic development of the very young child. Appropriate observation and documentation to support authentic assessment techniques of infants and toddlers are studied and implemented. Strategies that support and empower families through respectful and reciprocal relationships are included. Students will complete 30 hours of observation with infants and toddlers. (4 contact hrs)

ECHS-1200 — Early Childhood Curriculums — 4.00 credit hours

- Prerequisite: ECHS-1100 (formerly ECH 120) (Effective Spring/Summer 2009: course description changed) This course identifies preschool curriculum models and analyzes activities to be implemented in each classroom area. Theories of practice and methods in early childhood education are included to assist in teaching and administering preschool and child care programs. Environments, equipment, routines, and child guidance techniques developmentally appropriate for children ages 2 1/2 to 5 are discussed. Students will complete 30 hours of observation in a preschool or child care center with preschool age children. (4 contact hrs) Center Campus.

ECHS-1300 — Art & Representing Skills for Children — 3.00 credit hours

- Prerequisite: ECHS-1100 (formerly ECH 130) ECHS-1300 explores child-centered art and creative expressive activities related to the growth and development of the child age 2-9. Students will develop, implement, and evaluate art activities in various mediums and materials. (3 contact hrs) Center Campus.

ECHS-1400 — Music & Movement for Children — 3.00 credit hours

- Prerequisite: ECHS-1100 and ECHS-1200 (formerly ECH 140) This course studies the relationship of music and movement to cognitive development and cultural awareness. Students will gain skills needed to incorporate developmentally appropriate music and movement activities in the early childhood curriculum. Experiences in planning, creating, and implementing movement activities, singing, musical games and instruments, and music appreciation will be provided. (3 contact hrs) Center Campus.

ECHS-1520 — The Exceptional Child — 3.00 credit hours

- Prerequisite: ECHS-1100 or PSYC-2210 or permission of program coordinator (formerly ECHS-2915) This course is designed to help the early childhood educator understand the difference between normal and exceptional development of young children including identification of developmental delays; sensory impairment; physical, learning and behavioral disabilities; and chronic health problems. Methods for planning how environments, curriculum and materials can be adapted to accommodate special needs are identified. Strategies for working with parents and collaborating with support services are included. Federal and state legislation, including the state administrated special education code, are studied. (3 contact hrs) Center Campus.

ECHS-1550 — Family Child Care Management — 3.00 credit hours

- Prerequisite: None (formerly ECHS-1560) ECHS-1550 focuses on adapting the home to assure a safe, healthy learning environment, planning multi-age routines and activities, and developing positive child guidance skills. It emphasizes record keeping, menu planning, program marketing, as well as meeting state regulations and standards for National Association of Family Child Care accreditation. Students will complete 6 hours of observation. 3 contact hrs) Center Campus.

ECHS-1580 — School-Age Care — 3.00 credit hours

- Prerequisite: None (formerly ECH 158) No credit after EDUC-1580. This course is designed for the paraprofessional who works with school-age children. It reviews the physical, social/emotional, cognitive and motor development of the child 5-12 years old and studies methods of planning and implementing environments and activities that promote literacy, creativity, problem solving, independence, and self-esteem Topics include strategies that support and empower families through respectful, reciprocal relationships. (3 contact hrs) Center Campus.

ECHS-1600 — Parents As Partners — 3.00 credit hours

- Prerequisite: None (formerly ECH 160) This course focuses on understanding and appreciating the importance of children's families and communities. Students study methods and skills that will facilitate understanding to create respectful, reciprocal relationships to support and empower families and involve them in their children's development and learning. (3 contact hrs) Center Campus.

ECHS-1710 — Child Care Management — 3.00 credit hours

- Prerequisite: ECHS-1100 and ECHS-1200 (formerly ECHS-1700) This course is designed to help students develop the necessary knowledge and skills to manage child care centers. Through the use of a theoretical model the student will demonstrate the ability to maintain a healthy and safe environment, assure developmentally appropriate curriculum, manage a budget including supplies and equipment, schedule and work with staff and with working parents, meet licensing regulations, and demonstrate an awareness of NAEYC accreditation criteria and procedures. (3 contact hrs) Center Campus.

ECHS-1800 — Child Development Associate Credential Preparation, Part 1 — 3.00 credit hours

- Prerequisite: None (formerly ECH 180) This course is designed to fulfill the following Child Development Associate Credential Content areas: Competency Goal #2: To advance physical and intellectual competence in the functional areas of the physical, cognitive, communication, and creative. Competency Goal #3: To support social and emotional development and provide guidance in the functional areas of self, social, and guidance in children. (3 contact hrs) Center Campus.

ECHS-1810 — Child Development Associate Credential Preparation, Part 2 — 3.00 credit hours

- ▶ Prerequisite: ECHS-1800
- ▶ Corequisite: ECHS-1815
(formerly ECH 181) This course is designed to fulfill the following Child Development Associate Credential Content areas: Competency Goal #1 - To establish a safe, healthy, learning environment; Competency Goal #4 - To establish positive and productive relationships with families; Competency Goal #5 - To ensure a well-run, purposeful program responsive to participant needs. (6 contact hrs per week for 8 wks) Center Campus.

ECHS-1815 — Child Development Associate Credential Preparation, Part 3 — 3.00 credit hours

- ▶ Prerequisite: ECHS-1800
- ▶ Corequisite: ECHS-1810
(formerly ECHS-1820) ECHS-1815 is designed to fulfill the Child Development Associate Credential content area of Making a Commitment of Professionalism (#6) and to provide guidance in the preparation of competency documentation materials and the resource file. The student will be assisted in writing, speaking, and demonstrating competence in the 13 functional areas of the CDA. (3 contact hrs) Center Campus.

ECHS-2100 — Implementing the Curriculum — 2.00 credit hours

- ▶ Prerequisite: ECHS-1100, ECHS-1200, ECHS-1300, ECHS-1150, and ECHS-1600
- ▶ Corequisite: ECHS-2110, ECHS-1400
(formerly ECH 210) ECHS-2100 provides theory and principles related to the skills required to design and implement the ECHS curriculum. It includes methods of incorporating all areas of curriculum - math, science, sociodramatic play, technology, motor skills, language, and the arts and emphasizes integrating emergent literacy throughout the curriculum. Topics include understanding of group and individual behavior. (2 contact hrs) Center Campus.

ECHS-2110 — Curriculum Skills — 2.00 credit hours

- ▶ Prerequisite: ECHS-1100, ECHS-1200, ECHS-1300, ECHS-1150, and ECHS-1600
- ▶ Corequisite: ECHS-1400, ECHS-2100
(formerly ECH 211) This course provides an opportunity for students to practice and gain skills designing and implementing the early childhood curriculum. Students will develop curriculum plans as well as organize, create, and implement experiences in art, movement, music, literacy, socio-dramatic play, science, technology, and cooking. Students will gain beginning skills in observation, documentation, and assessment. Students will complete 30 hours of observation in a preschool or child care center with preschool age children. (2 contact hrs) Center Campus.

ECHS-2310 — Professional Issues in Early Childhood — 1.00 credit hours

- ▶ Prerequisite: ECHS-1400, ECHS-1710, ECHS-2100 and ECHS-2110
- ▶ Corequisite: ECHS-2330, ECHS-2340
(formerly ECH 231) This course explores the current issues in the field of early childhood. These issues include advocacy, professional ethics, continuing education, and professionalism. Students will gain experience using the NAEYC Code of Ethical Conduct. (2 contact hrs per week for 8 wks) Center Campus.

ECHS-2330 — Early Childhood Practicum — 3.00 credit hours

- ▶ Prerequisite: ECHS-1400, ECHS-1710, ECHS-2100 and ECHS-2110 with grade C or better
- ▶ Corequisite: ECHS-2310, ECHS-2340
(formerly ECHS-2320) In a practicum setting students are given the opportunity to assess growth and development of preschool children and gain skill in interacting with children. Students will plan, implement, and evaluate learning activities of the individual child and for groups of children. (10 contact hrs per week) Center Campus.

ECHS-2340 — Early Childhood Practicum Seminar — 2.00 credit hours

- Prerequisite: ECHS-1400, ECHS-1710, ECHS-2100 and ECHS-2110 with grade C or better
 - Corequisite: ECHS-2310, ECHS-2330
- This course offers in depth consideration of issues related to the practicum classroom including authentic observation, documentation and assessment, and developmentally appropriate practice in curriculum development. Methods of forming respectful and reciprocal relationships with families and the teaching staff are also considered. (2 contact hrs) Center Campus

ECON — Economics

ECON-1160 — Principles of Economics 1 — 3.00 credit hours

- Prerequisite: None
- (formerly ECO 116) An introduction to basic principles of economics with an emphasis on macroeconomic theory. This course of study will include an analysis of national income, employment, and prices, and concludes with a discussion of monetary and fiscal policies. It is recommended that students should follow ECON-1160 with ECON-1170 for a more complete introduction to economics. (3 contact hrs)

ECON-1170 — Principles of Economics 2 — 3.00 credit hours

- Prerequisite: ECON-1160
- (formerly ECO 117) A continuation of the basic principles of economics with an introduction to microeconomic theory. This course of study will include an analysis of supply and demand and the decision-making processes of firms in perfectly and imperfectly competitive markets. (3 contact hrs)

ECON-2110 — International Economics — 3.00 credit hours

- Prerequisite: ECON-1160
- This course serves as an introduction to international trade and finance. It examines the structure of international trade and the functioning of the international monetary system. Attention is given to recent issues in these areas and the relationship between domestic and international economies. (3 contact hrs)

EDUC — Education

EDUC-1010 — Paraprofessional Theory & Practice — 4.00 credit hours

- Prerequisite: None
- This course and practicum is intended for students seeking to meet the standards of the No Child Left Behind Legislation and to introduce the student to the role and responsibilities of the paraprofessional in the K-12 setting. It may be used as a “first step” in a career ladder toward obtaining a paraprofessional certificate or teaching certification. Topics covered include human growth and development, learning principles, instructional strategies for reading, math, and writing, behavior management, professionalism and strategies for working with special needs students. The Practicum component (*24 hours of field work with a K-12 teacher) complements the classroom material while providing the student the opportunity to directly apply classroom theory in a K-12 educational environment. *Student responsible for acquiring fieldwork site. *Before attending a school to complete the Practicum, it is necessary to have a Family Independent Agency (FIA) background check and a criminal background check. The college instructor will provide appropriate forms. (4 contact hrs) Center Campus.

EDUC-2010 — Introduction to Education — 4.00 credit hours

- Prerequisite: ENGL-1180 or ENGL-1210
- An introductory course designed to provide prospective education majors with the opportunity to explore the teaching profession. Course content focuses on the foundations of education including the overview of the history and philosophy of education, school governance and finance, best practices in learning theories and instruction strategies, as well as exploration of current issues and trends. This course also provides an overview of unique teaching opportunities, university transfer requirements, and the Michigan requirements for teacher certification. Students will complete 30 hours of field observation. (94 total contact hrs)

ELEC — Electronic Technology

ELEC-1100 — Introduction to Electronics — 3.00 credit hours

- Prerequisite: None
(formerly EETE-1100) ELEC-1100 is designed for non-ELEC majors who lack a formal training experience in the following areas: series, parallel, series-parallel and basic A.C. circuits. Students will use basic algebra, scientific calculators and an electronic software program in this class. (4 contact hrs) South Campus.

ELEC-1111 — Electrical Fundamentals for Non-Electrical Tradesmen — 2.00 credit hours

- Prerequisite: None
(formerly ATEE-1110) ELEC-1111 is designed for non-electrical apprentices. Topics include atomic structure; Ohm's Law; series and parallel A.C. circuits; magnetism and induction; D.C. motors and generators; D.C. meters; A.C. fundamentals; capacitance; inductance; alternators; A.C. motors; A.C. meters. (2 contact hrs) South Campus.

ELEC-1125 — Electric Line & Smart Grid Design — 2.00 credit hours

- Prerequisite: None
(replaces ATEE-1410) ELEC-1125 explains how sensors, communication technologies, computational ability, control, and feedback mechanisms can be effectively combined to create a continually adjusting smart grid system. It provides an understanding of both Intelligrid architecture and EnergyPort as well as how to integrate intelligent systems to achieve the goals of containment, energy efficiency in power production and delivery, and end-use energy efficiency. (2 contact hours) South Campus.

ELEC-1161 — Electronic Technology 1 — 3.00 credit hours

- Prerequisite: None
(formerly EETE-1160) This course is intended for those students seeking entry-level knowledge in electronic technology. This course will provide the student with theory and practical experimentation in the following areas as applied to D.C. circuits: Series, Parallel, and Series-Parallel circuits. Meters will be used to measure and evaluate signals and operating voltages. Identification of basic electronic components as they relate to actual and schematic symbols. Ohm's Law, Watt's Law, Kirchhoff's Laws, and the Superposition Theorem will be employed. An electronic software program will be applied to various circuits in class. Scientific calculators and basic algebra will be used in class. (4 contact hrs) South Campus.

ELEC-1171 — Electronic Technology 2 — 3.00 credit hours

- Prerequisite: ELEC-1161
(formerly EETE-1170) This course is a continuation for students seeking entry-level knowledge in electronic technology. This course will provide theory and experimentation in the following areas as applied to A.C. circuits: alternators, sine waves, capacitance, inductance, RC, RL and RCL series and parallel circuits, phase shift and filter, phase lead and lag circuits. Experimentation will include the use of meters, the oscilloscope, and the function generator. (4 contact hrs) South Campus.

ELEC-1182 — Semiconductor Theory & Devices — 3.00 credit hours

- Prerequisite: ELEC-1171
(formerly ELEC-1181) ELEC-1182 provides students with the knowledge required to understand and troubleshoot electronic circuits containing diodes, transistors, FETs, and MOSFETs. Among the topics discussed are Thevenin's Theorem, semiconductor theory, half-wave and full-wave rectifiers, transistor biasing circuits, FET and MOSFET biasing. Students will learn through lecture, textbook assignments, hands-on laboratory experimentation, and simulated virtual experiments utilizing computer software. (8 contact hrs per week for 8 weeks) South Campus.

ELEC-1192 — Semiconductor Devices & Circuits — 3.00 credit hours

- Prerequisite: ELEC-1182 (formerly EETE-2280) This course provides students with theory and practical experimentation using the following electronic devices: BJT, SCR, UJT, PUT, Triac, Diac, Four Layer Diode, SUS, SBS, Op-amps, and optoelectronic devices. Circuit designs include amplitude control, phase shift control, relaxation oscillators inverting, and non-inverting amplifiers. (8 contact hrs per week for 8 weeks) South Campus.

ELEC-1211 — Digital Electronics Basics — 3.00 credit hours

- Prerequisite: ELEC-1171 (formerly EETE-1210) This course will provide students with the knowledge required to understand and troubleshoot digital electronic circuits. Among the topics discussed are number systems, codes, logic gates, Boolean statements, combinational logic, flip-flops, counters, shift registers, memory and storage, and integrated circuit technologies. Knowledge will be gained through lecture, textbook assignments, hands-on laboratory experiments, and simulated virtual experiments utilizing virtual circuit software. (4 contact hrs) South Campus.

ELEC-1221 — Microcontrollers With Robotic Application — 3.00 credit hours

- Prerequisite: ELEC-1211 This course will provide students with the knowledge required to understand, program, and apply microcontrollers (pic chips) to robotic applications using the Basic Stamp. The first half of the class will be spent learning to program and interface simple circuitry using the Basic Stamp interface board. The second half of the class will be spent applying this knowledge to a mobile robot with onboard sensors. Among the topics discussed are pic chip programming, controlling inputs and outputs, motion and rotational control, digital displays, measurement of light, frequency and sound, controlling servo motors, robotic navigation, tactile sensing, light sensitive navigation, and robotic control with distance detection. Knowledge will be gained through lecture, textbook assignments, hands-on laboratory experiments, and project troubleshooting. (4 contact hrs) South Campus.

ELEC-1230 — Troubleshooting 1 — 3.00 credit hours

- Prerequisite: ELEC-1171
- Corequisite: ELEC-1240 (Recommended) (formerly ECS 123) Study of signal processing circuitry. Horizontal and vertical scan circuits, video display terminals, RF circuitry, power supplies. Use of test equipment to trace signal flow paths and to evaluate operating parameters. (4 contact hrs) South Campus. Fall semester.

ELEC-1240 — Troubleshooting 2 — 3.00 credit hours

- Prerequisite: ELEC-1230 (formerly ECS 124) Diagnosis of faults in signal processing circuits and associated control circuits. Fault location and correction in video display terminals. Replacement procedures for defective components. Use of test equipment to locate defective components. (4 contact hrs) South Campus. Fall semester.

ELEC-1250 — Introduction to Audio & Video Technology — 2.00 credit hours

- Prerequisite: None This course focuses on application of electronic concepts with components in audio and video technology. Also covered are mechanical hookups, connections and basic electronic troubleshooting, and servicing. The student will become familiar with basic electronic equipment used in an audio and video studio, and troubleshoot operational and connection problems. (2 contact hrs) South Campus.

ELEC-1300 — Electric Theory — Electrical Equipment & Introduction to Machine Circuits — 2.00 credit hours

- Prerequisite: None (formerly ATEE-1300) After a brief introduction to the fundamentals of electricity, this course covers wire size, insulation, connections, and wiring methods. Topics also include switches, relays, motor starters, and other control components. ELEC-1300 also introduces machine tool control circuits, maintenance procedures, and safe working practices. (2 contact hrs) South Campus.

ELEC-1310 — Electrical — Basic Direct & Alternating Current Motor Control Circuits — 2.00 credit hours

- Prerequisite: ATAM-1350 or ELEC-1300 (formerly ATEE-1250) ELEC-1310 provides an introduction to D.C. and A.C. motor control circuits. Topics include fundamental concepts of electricity and magnetism, series and parallel circuits, D.C. motors and generators, basic electrical instruments, A.C. motors, and electric motor control symbols and circuits. (2 contact hrs) South Campus.

ELEC-2005 — Discrete Amplifiers & Introduction to Op-Amps — 3.00 credit hours

- Prerequisite: ELEC-1192 (formerly EETE-1191) ELEC-2005 provides students theory and practical experimentation dealing with discrete transistor amplifiers and basic operational amplifier circuits. Among the circuits to be discussed are Voltage, Power, CC and CB amplifiers as well as inverting, non-inverting, differential, and summing op-amp amplifiers. (4 contact hrs) South Campus.

ELEC-2010 — Instrumentation 1-Transducer Theory — 3.00 credit hours

- Prerequisite: ELEC-1211 (formerly EETE-2010) ELEC-2010 covers theory and application of the following devices and topics: Thevenin's Theorem, operational amplifiers, passive and active filters, loading, oscilloscope operation and the following transducers: I.C. temperature, thermistor, RTD, thermocouple, capacitance sensor, strain gauge, LVDT and others. Students will use Electronics Workbench to simulate electronic circuits and instrumentation. (8 contact hrs per week for 8 weeks)

ELEC-2150 — LabVIEW Basics 1 — 3.00 credit hours

- Prerequisite: ELEC-1211 or approval of program advisor (formerly ELEC-2911) ELEC-2150 will provide an introduction to the LabVIEW graphical system design platform. Students create, edit, and execute programs that utilize basic LabVIEW functions. (8 contact hrs per week for 8 wks) South Campus.

ELEC-2160 — LabVIEW Basics 2 — 3.00 credit hours

- Prerequisite: ELEC-2150 (formerly ELEC-2912) ELEC-2160 will build upon the foundation of knowledge established in ELEC-2150 in further exploring the functionality of the LabVIEW programming platform. (8 contact hrs per week for 8 wks) South Campus.

ELEC-2270 — Microcontroller Programming — 3.00 credit hours

- Prerequisite: ELEC-1211 and either ELEC-1192 or ELEC-2005 (formerly EETE-2270) ELEC-2270 stresses the concepts of microcontroller programming including instruction sets, loops, software delays and data structures. (8 contact hrs per week for 8 weeks) South Campus.

ELEC-2370 — Electrical — Polyphase Alternating Current Fundamentals, Electrical Instruments & Illumination — 2.00 credit hours

- Prerequisite: ELEC-1171 or ATEE-2350 or related work experience (formerly ATEE-2360) ELEC-2370 covers three and four-wire two-phase circuits, three-phase induction, star and delta circuits, power, balanced and unbalanced loads, transformer principles, characteristics and connection, electrical instruments, self-synchronous systems, protective relays, lamps and illumination. (2 contact hrs) South Campus.

ELEC-2380 — Electrical — Alternating Current Machines — 2.00 credit hours

- Prerequisite: ELEC-2370 or related work experience (formerly ATEE-2260) ELEC-2380 examines alternators, rotating magnetic fields, A.C. motors, speed control, types of winding, introduction to A.C. motor control. (2 contact hrs) South Campus.

ELEC-2400 — Microprocessor Interfacing — 3.00 credit hours

- Prerequisite: EETE-2270 or ELEC-2270 (formerly EETE-2400) ELEC-2400 covers interfacing the microcomputer in serial and parallel format. Topics include handshake control, PIA, ACIA, UARTS, AD and DA conversions, interfacing the microcomputer to TTYS CRTs Modems, floppy disks, dynamic and static memories, and electrical/mechanical devices. (8 contact hrs per week for 8 weeks) South Campus.

ELEC-2410 — Electrical — National Electrical Code — 2.00 credit hours

- Prerequisite: None (formerly ATEE-2410) ELEC-2410 studies national and local electrical codes for wiring and apparatus. It covers wiring design and protection, wiring methods and materials, general use equipment, special occupancies, special equipment, and the use of tables and diagrams for the solution of practical wiring problems. (2 contact hrs) South Campus.

ELEC-2490 — Instrumentation 2-Advanced Op-Amps & Linear Integrated Circuits — 3.00 credit hours

- Prerequisite: ELEC-2010 (formerly EETE-2490) ELEC-2490 focuses on operational amplifier applications, passive and active filters, voltage compositors, phase-locked-loop and data acquisition. (4 contact hrs) South Campus.

ELEC-2550 — Electrical — Industrial Electronic Fundamentals — 2.00 credit hours

- Prerequisite: ELEC-1171 or ATEE-2350 or related work experience (formerly ATEE-2550) ELEC-2550 provides an introduction to electronics which includes semiconductor theory and circuits, transistor theory and circuits, power supplies, oscillator circuits, photosensitive devices, and pulse circuits. (2 contact hrs) South Campus.

ELEC-2560 — Electrical — Welding Controllers — 2.00 credit hours

- Prerequisite: ELEC-2550 or related work experience (formerly ATEE-2560) Resistance welders and controllers are the main topics of ELEC-2560. Subtopics include spot welders, various types of welder controllers, plug-in accessories, test equipment, portable and stationary welders, and arc welders. (2 contact hrs) South Campus.

ELEC-2650 — Computer Servicing 1 — 4.00 credit hours

- Prerequisite: None (formerly ECS 265) The student will become familiar with personal computer equipment and computer servicing concepts. Topics covered are disassembly and assembly procedures, identification and replacement of parts, configuration problems, and electrostatic considerations. Emphasis will be on troubleshooting and diagnostic routines and procedures. (4 contact hrs) South Campus.

ELEC-2660 — Computer Servicing 2 — 4.00 credit hours

- Prerequisite: ELEC-2650 (formerly ECS 266) Continuation of ELEC-2650. The course will acquaint the student with fundamental computer servicing concepts. The student will become familiar with computer equipment and peripherals, including monitors, mice, printers, CD-ROM drives and sound cards. Emphasis will be on troubleshooting and diagnostic routines and procedures. (4 contact hrs) South Campus.

EMSA — Emergency Medical Services

EMSA-1215 — Basic Emergency Medical Technician Lecture — 7.00 credit hours

- Prerequisite: Acceptable score on reading placement test
- Corequisite: EMSA-1220, EMSA-1250 (replaces EMSA-1211 and EMSA-1241 together but does not equate to either course separately) EMSA-1215 provides an introduction to Basic EMT. It is designed to provide the student with an outline of the EMS system and introduce assessment skills, as well as provide pathophysiology of common neurological, respiratory, and cardiac related emergencies. (7 contact hrs) Center Campus.

EMSA-1220 — Basic EMT Lab — 4.00 credit hours

- ▶ Prerequisite: None
- ▶ Corequisite: EMSA-1215, EMSA-1250
(formerly EMTC-1220) Practical skills of Basic EMT are learned. (6 contact hrs)

EMSA-1250 — Clinical Rotation for the Basic EMT — 1.00 credit hours

- ▶ Prerequisite: None
- ▶ Corequisite: EMSA-1215, EMSA-1220
(formerly EMTC-1250) Clinical rotation in the hospital and EMS units for the Basic EMT. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. Off-site, by arrangement. (5 contact hrs per week for 8 wks) Center Campus.

EMSA-2510 — Introduction to Paramedic Procedures — 4.00 credit hours

- ▶ Prerequisite: Permission from instructor and acceptable score on reading placement test
- ▶ Corequisite: EMSA-2520, EMSA-2530, EMSA-2550
(formerly EMTC-2510) This course provides an introduction to paramedic procedures. It reviews traumatic injuries and the physical exam, and prepares the student to enter the clinical environment. (4 contact hrs) Center Campus.

EMSA-2520 — Pharmacology for the Paramedic 1 — 3.00 credit hours

- ▶ Prerequisite: Permission of instructor
- ▶ Corequisite: EMSA-2510, EMSA-2530, EMSA-2550
(formerly EMTC-2520) Study of generalized drug therapy for the paramedic. (3 contact hrs) Center Campus.

EMSA-2530 — Paramedic Lab 1 — 3.00 credit hours

- ▶ Prerequisite: Permission of instructor
- ▶ Corequisite: EMSA-2510, EMSA-2520, EMSA-2550
(formerly EMTC-2530) Practical applications for Introduction to Paramedic Procedures and Paramedic Lecture 2. (6 contact hrs) Center Campus.

EMSA-2550 — Paramedic Lecture 2 — 4.00 credit hours

- ▶ Prerequisite: EMSA-2510 with grade C or better
- ▶ Corequisite: EMSA-2520, EMSA-2530
(formerly EMTC-2550) This course presents a study of cardiology and introduction to the EKG. (4 contact hrs) Center Campus.

EMSA-2560 — Paramedic Lecture 3 — 3.00 credit hours

- ▶ Prerequisite: EMSA-2550 with grade C or better
- ▶ Corequisite: EMSA-2570, EMSA-2580, EMSA-2612, EMSA-2620
(formerly EMTC-2560) Study of common medical emergencies, obstetrics, shock, and allergies. (3 contact hrs) Center Campus.

EMSA-2570 — Pharmacology for the Paramedic 2 — 3.00 credit hours

- ▶ Prerequisite: EMSA-2520 with grade C or better
- ▶ Corequisite: EMSA-2560, EMSA-2580, EMSA-2612, EMSA-2620
(formerly EMTC-2570) Study of cardiac-related drug therapy for the paramedic. (3 contact hrs) Center Campus.

EMSA-2580 — Paramedic Lab 2 — 3.00 credit hours

- ▶ Prerequisite: EMSA-2530 with grade C or better
- ▶ Corequisite: EMSA-2560, EMSA-2570, EMSA-2612, EMSA-2620
(formerly EMTC-2580) Practical applications for Paramedic Lecture 3 and 4. (6 contact hrs) Center Campus.

EMSA-2600 — Advanced Life Support Internship — 6.00 credit hours

- Prerequisite: Permission of instructor (formerly EMTC-2600) Internship with a paramedic in an out-of-hospital environment. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (Up to 25 contact hrs per week for 12 wks are provided to meet minimal competencies) Off-site, by arrangement.

EMSA-2611 — Hospital Clinical Rotation for the Paramedic — 2.00 credit hours

- Prerequisite: Permission of instructor (formerly EMSA-2610) (Note: EMSA-2611 & EMSA-2612 together equal EMSA-2610) In-hospital clinical rotation class offered first semester. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (12.5 contact hrs per week for 8 wks) Off-site, by arrangement.

EMSA-2612 — Hospital Clinical Rotation for the Paramedic 2 — 4.00 credit hours

- Prerequisite: EMSA-2611 (formerly EMSA-2610) (Note: EMSA-2611 & EMSA-2612 together equal EMSA-2610) In-hospital clinical rotation class offered second semester. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (12.5 contact hrs per week for 16 wks) Off-site, by arrangement.

EMSA-2620 — Paramedic Lecture 4 — 3.00 credit hours

- Prerequisite: None
- Corequisite: EMSA-2560, EMSA-2570, EMSA-2580, EMSA-2612 (formerly EMTC-2620) 12-lead EKG and Advanced Cardiac Life Support for the Paramedic. (3 contact hrs) Center Campus.

EMSA-2800 — Emergency Services Instructor/ Coordinator — 9.00 credit hours

- Prerequisite: Approval of faculty, valid provider license or certificate, and 3 years related work experience.
This course covers the fundamentals for designing effective emergency services instruction. Students will learn to: develop an educational program that is ethical and legal, develop skills to address multiple learning styles, create engaging lesson plans, and assess the efficacy of teaching. Finally, students will practice these skills in a student teaching experience. Successful completion will make students eligible for instructor licensing or certification exam. (9 contact hours a week for 16 weeks with 30 hours of student teaching.)

ENGL — English

ENGL-0050 — Preparatory Composition — 3.00 credit hours

- Prerequisite: Placement (formerly ENG 005) Extensive work with punctuation, sentence and paragraph structure. Designed as preparatory for successful work in freshman composition courses. (3 contact hrs)

ENGL-1000 — Sentence Structure & Style — 3.00 credit hours

- Prerequisite: None (formerly ENG 100) Students get a thorough review of sentence elements before moving on to extensive practice with stylistic devices that improve their expression at the sentence level. Designed to give students confidence when they prepare college assignments or do any writing as Part of their jobs. (The course cannot be substituted for required composition classes where principles of organization for paragraphs and essays are taught and practiced.) (3 contact hrs)

ENGL-1180 — Communications 1 — 4.00 credit hours

- Prerequisite: Placement, or ENGL-0050 or EAPP-1500 with grade C- or better (formerly ENG 118) No credit after ENGL-1210. The focus of this course is college-level expository and argumentative writing. This course places extensive emphasis on organization and development of essays along with the study of grammar and mechanics. This course develops competence in English sentence elements and skill in organizing, proofreading, and revising essays. Students who have completed ENGL-1210 successfully should NOT take ENGL-1180. Students will NOT receive credit for both. (4 contact hrs)

ENGL-1190 — Communications 2 — 4.00 credit hours

- Prerequisite: ENGL-1180 or ENGL-1210 (formerly ENG 119) No credit after ENGL-1220. The focus of this course is to continue the development of writing skills learned in ENGL-1180 or ENGL-1210. This course places extensive emphasis upon research and documentation. Students who have completed ENGL-1220 successfully should NOT take ENGL-1190. Students will NOT receive credit for both. (4 contact hrs)

ENGL-1210 — Composition 1 — 3.00 credit hours

- Prerequisite: Placement, or ENGL-0050 or EAPP-1500 with grade C- or better (formerly ENG 121) No credit after ENGL-1180. The focus of this course is the writing of expository and argumentative essays. This course emphasizes logical development of ideas and refinement of personal style. Students who have completed ENGL-1180 successfully should NOT take ENGL-1210. Students will NOT receive credit for both. (3 contact hrs)

ENGL-1220 — Composition 2 — 3.00 credit hours

- Prerequisite: ENGL-1180 or ENGL-1210 (formerly ENG 122) No credit after ENGL-1190. The focus of this course is the writing of critical essays based upon readings in literature, and the further development of writing skills learned in ENGL-1180 or ENGL-1210. The course places extensive emphasis upon research. Students who have completed ENGL-1190 successfully should NOT take ENGL-1220. Students will NOT receive credit for both. (3 contact hrs)

ENGL-1730 — Contemporary American Literature — 3.00 credit hours

- Prerequisite: None (formerly ENG 173) Reading of American works which are currently influencing and defining thought and art, as a means of introducing stimulating writers and books. Emphasis on discussion and critical analysis. (3 contact hrs)

ENGL-2410 — Creative Writing — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190 or consent of instructor (formerly ENG 241) Course primarily in writing the short story and poetry with emphasis on creation of personal imaginative work. (3 contact hrs)

ENGL-2420 — Advanced Creative Writing — 3.00 credit hours

- Prerequisite: ENGL-2410 or consent of instructor (formerly ENG 242) Course designed for the experienced writer who has developed the fundamentals taught in ENGL-2410. Revising and marketing manuscripts will be covered. (3 contact hrs)

ENGL-2510 — British Literature to 1760 — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190 This course begins with a study of the literature from the Medieval period and moves to study works written throughout the age of Chivalry, the Elizabethan era, the Seventeenth century political upheaval and Restoration, and the Age of Enlightenment in the Eighteenth Century. Authors that may be covered include Chaucer, Mallory, More, Sidney, Spenser, Marlowe, Shakespeare, Raleigh, Donne, Herrick, Marvell, Milton, Dryden, Swift, and Pope. (3 contact hrs)

ENGL-2520 — British Literature From 1760 to Present — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190

This course carries on the study of British Literature from the pre-Romantics through the modernist period and into the present day. Authors that may be covered in this course include Blake, Burns, Wordsworth, Coleridge, Keats, Byron, Shelley(s), Dickens, Browning(s), Tennyson, Arnold, Rossetti, Hardy, Hopkins, Yeats, Joyce, Eliot, Lawrence, Thomas, and Heaney. (3 contact hrs)

ENGL-2600 — Introduction to Poetry — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190

(formerly ENG 260) Readings to discover and understand the pleasures of poetry. Selections from among the best poems produced by Western Civilization. Writing of critical papers. (3 contact hrs)

ENGL-2610 — Introduction to Prose Fiction — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190

(formerly ENG 261) Reading and discussion of fiction, such as novels, novellas, and short stories. Readings, discussions, and lectures on representative works that have influenced Western Civilization with a consideration of the individual work's style, form, and milieu. Writing of critical papers. (3 contact hrs)

ENGL-2640 — Children's Literature — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190 or consent of instructor

(formerly ENG 264) Study of picture books, novels, folk tales, and poetry intended for children from preschool through high school with an emphasis on developing the student's analytical abilities and broadening the student's knowledge of children's literature. (3 contact hrs)

ENGL-2710 — American Literature: Colonial to 1865 — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190

(formerly ENG 271) This course begins with the earliest American literature written by Native Americans, and moves on to European expectations, settlements, and explorations of the "new world". It also covers the literature of the American Revolution, the literary life of the new nation, culminating in the voices of American Romanticism and anti-slavery reform. Authors to be covered may include Bradford, Winthrop, Edwards, Bradstreet, Franklin, Wheatley, Jefferson, Poe, Emerson, Thoreau, Hawthorne, Stowe, and Douglass. (3 contact hrs)

ENGL-2720 — American Literature, 1865 to 1920 — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190

(formerly ENG 272) This course presents a study of major cultural and literary developments between the end of the Civil War and the end of World War I. We will consider Reconstruction, Western Expansion, industrialization and urban growth, the role of the new immigrants, the "woman question" and how these issues found literary expression in what is commonly referred to as Realism and Naturalism. Authors to be discussed may include Whitman, Dickinson, Twain, Davis, James, Howells, Dreiser, Crane, Norris, Cahan, Dos Passos, Gilman, Chopin, Wharton, Freeman, Jewett, Sinclair, Dunbar, and Chesnut. (3 contact hrs)

ENGL-2730 — American Literature, 1920 to Present — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190

(formerly ENG 273) This course traces the cultural and literary concerns faced by Americans in the twentieth century; the Depression, World War II, post-war prosperity, the ethnic revival of the sixties, and the current political, social, and cultural concerns. Authors to be covered may include Anderson, Hemingway, Fitzgerald, Hurston, O'Connor, Welty, Cummings, Wright, Faulkner, Steinbeck, Odets, O'Neill, Miller, Gold, Ellison, Bellow, Malamud, Roth, Updike, Frost, Eliot, Sandburg, Williams, Millay, Moore, Toomer, Hughes, Baraka, Brooks, Baldwin, and Walker. (3 contact hrs)

ENGL-2800 — World Literature to 1400 — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190
(formerly ENG 280) World Literature to 1400 provides an examination of works of literature from a variety of cultures, with the time period ranging from the earliest texts known through approximately 1400. Students will apply techniques for literary analysis, including the writing of one or more critical papers that incorporate research on an aspect of world literature. (3 contact hrs)

ENGL-2810 — World Literature From 1400 — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190
(formerly ENG 281) World Literature from 1400 provides an examination of works of literature from a variety of cultures, with the time period ranging from approximately 1400 CE on. Students will apply techniques for literary analysis in the writing of one or more critical papers that incorporate research on an aspect of world literature. (3 contact hrs)

ENGL-2850 — Shakespeare Survey — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190
(formerly ENG 285) Study of Shakespeare's life, sonnets, comedies, histories, and tragedies. Writing of critical papers. (3 contact hrs)

ENGR — Pre-Engineering

ENGR-1000 — Introduction to Engineering — 3.00 credit hours

- Prerequisite: None
(formerly EGR 100) An introduction to the engineering professions through lectures and guest speakers. This course emphasizes engineering research, covers work place expectations, academic preparation, computers in engineering and problem solving through teamwork. (3 contact hrs)

ENVS — Environmental Science

ENVS-1050 — Environmental Science — 4.00 credit hours

- Prerequisite: None
(formerly EVS 105) This interdisciplinary science course is a study of environmental problems and alternative solutions to these problems. The integral nature of all parts of the environment as well as specific environmental problems are stressed. Such topics as man and his relationship to the environment, energy resource limitations, land use, water and air pollution are included. (4 contact hrs) South Campus.

ESCI — Earth Science

ESCI-1210 — Earth Science — 4.00 credit hours

- Prerequisite: None
(formerly NATS-1210) This is a lecture/laboratory course for non-science majors. It is a survey of the earth sciences intended to aid the student in understanding the interrelationships of the universe through the investigation of such topics as matter and energy, astronomy, geology, and meteorology. (4 contact hrs)

FINC — Finance

FINC-1010 — Introduction to Finance — 3.00 credit hours

- Prerequisite: None
(formerly CRFN-1030) FINC-1010 introduces students to the various financial markets. Emphasis is on exploring the function and operation of the Federal Reserve System, interest rates, the characteristics of different financial markets/institutions, and financial risk management. Students learn how these topics relate to financial management in the business environment. (3 contact hrs)

FINC-2020 — Bank & Lending Management — 3.00 credit hours

- Prerequisite: None
FINC-2020 introduces students to the banking and financial-services industry (FSI). Emphasis is on an overview of the industry, assessment of risk factors, business and commercial real estate lending. The theory and objectives of bank regulation, bank failures, and ethics specific to FSI are explored. (3 contact hrs)

FINC-2030 — Corporate Finance — 3.00 credit hours

- Prerequisite: ACCT-1080 and FINC-1010
FINC-2030 introduces students to various corporate finance techniques. Emphasis is on understanding the goals and functions of financial management, financial analysis, forecasting, planning, short and long-term financing, and the capital budgeting process. (3 contact hrs)

FINC-2040 — The Stock Market — 3.00 credit hours

- Prerequisite: None
FINC-2040 introduces students to stocks, bonds, and other securities. Emphasis is on analysis of the financial markets, risks associated with securities, and the methods used to control these risks. (3 contact hrs)

FIRE — Fire Science

FIRE-1000 — Philosophy of Fire Protection — 3.00 credit hours

- Prerequisite: None
(formerly FSC 100) The philosophy and history of fire protection; history of loss of life and property from fire; review of municipal fire defenses; study of the organization and function of federal, state, county, and private fire protection agencies; survey of professional fire protection career opportunities. (3 contact hrs) Center Campus.

FIRE-1010 — Fundamentals of Fire Prevention — 3.00 credit hours

- Prerequisite: None
(formerly FSC 101) Organization and function of the fire prevention organization; inspections, surveying and mapping procedures; recognition of fire hazards; engineering a solution to the hazard; enforcement of the solution; public relations as affected by fire prevention. (3 contact hrs) Center Campus.

FIRE-1180 — Fire Science 1 — 4.00 credit hours

- Prerequisite: None
(formerly FSC 118) Fundamentals of fire investigation; chemistry of fire and fire behavior; determining point of origin and ignition sources; properties of combustibles and residues of pyrolysis; recognition of arson evidence. (4 contact hrs) Center Campus.

FIRE-1190 — Fire Science 2 — 4.00 credit hours

- Prerequisite: None
(formerly FSC 119) Coordinated lab and lecture on hazardous materials and special hazards as they apply to the field of fire protection. Chemical and physical properties of hazardous material, processing hazards, life hazards, storage, handling, and fire fighting techniques. Regulations by various governmental agencies, insurance services, and suggested codes. (4 contact hrs) Center Campus.

FIRE-1280 — Fire Protection Equipment & Systems 1 — 3.00 credit hours

- Prerequisite: None
(formerly FSC 128) Introduction to the concept of fire protection systems. Study of extinguishing agents and their application. Concentration on fixed and portable water, carbon dioxide, dry chemical, dry powder, foam, and halogenated systems. (3 contact hrs) Center Campus.

FIRE-1290 — Fire Protection Equipment & Systems 2 — 3.00 credit hours

- Prerequisite: None
(formerly FSC 129) Continuation of FIRE-1280 with special emphasis on sprinkler systems, automatic detection systems, municipal alarm systems, and the design requirements for application in fire prevention and fire suppression. (3 contact hrs) Center Campus.

FIRE-2000 — Basic Fire Academy — Firefighter 1 — 6.00 credit hours

- Prerequisite: Consent of Department and acceptable score on reading placement test. Michigan State law mandates that persons taking this course must be at least 18 years of age, have a valid Michigan driver's license, no felony convictions, and successfully pass the Michigan Municipal League Physical Agility test prior to being accepted.
FIRE-2000 is for students who are currently employed by a fire department recognized by the Michigan Fire Marshall, are currently seeking employment, and/or are a volunteer in a recognized fire district. This course provides an introduction to basic fire suppression, prevention procedures, and skill development. This course meets the State-mandated requirements for preparing students to take the exam for State certification for entry-level or on-call or volunteer firefighters. (12.5 contact hrs) East Campus.

FIRE-2010 — Basic Fire Academy — Firefighter 2 — 6.00 credit hours

- Prerequisite: FIRE-2000 and consent of department
FIRE-2010 is for students who are currently employed by a fire department recognized by the Michigan Fire Marshall, are currently seeking employment, and/or are a volunteer in a recognized fire district. This course deals with advanced fire suppression techniques, including prevention procedure and skill development. This course meets the State-mandated requirements for preparing students to take the exam for State certification for entry-level or on-call or volunteer firefighters. (12.5 contact hrs) East Campus.

FIRE-2130 — Fire Hydraulics & Water Supply — 3.00 credit hours

- Prerequisite: None
(formerly FSC 213) Hydrostatics and hydrokinetics, Bernoulli's Theorem, Pascal's Theorem, Venturi Action, Hazen-Williams Formula, water distribution systems, pump velocity, discharge, friction loss, engine and nozzle pressures as they relate to the study of fire science. Concentration on theory followed by practical application to the fire service. (3 contact hrs) Center Campus.

FIRE-2300 — Fire Department Administration — 3.00 credit hours

- Prerequisite: None
(formerly FSC 230) Organization, supervision, and effective management of modern fire departments; survey of municipal fire problems; fire defenses and insurance rates; legal aspects of fire prevention; records and measurement of results. (3 contact hrs) Center Campus.

FIRE-2410 — Building Construction for Fire Protection — 3.00 credit hours

- Prerequisite: None
(formerly FSC 241) Fundamental building construction and design; fire protection features, special considerations. (3 contact hrs) Center Campus.

FIRE-2510 — Fire Fighting Tactics & Strategy — 3.00 credit hours

- Prerequisite: None
(formerly FSC 251) Review of fire chemistry, equipment, and manpower; basic fire fighting tactics and strategy; methods of attack; pre-planning fire problems. (3 contact hrs) Center Campus.

FREN — French Language

FREN-1260 — Elementary French 1 — 4.00 credit hours

- Prerequisite: None (formerly FRE 126) This course is designed to introduce students to the French speaking world and French vocabulary and grammatical structures necessary to express personal meaning on basic topics. Students will engage in these activities within contextualized cultural settings. The vocabulary and grammatical structures are integrated into interactive and communicative activities that emphasize all four language skills: speaking, listening, reading, and writing. Students are required to use computer based technology to practice these skills. (5 contact hrs)

FREN-1270 — Elementary French 2 — 4.00 credit hours

- Prerequisite: FREN-1260 or two or more years of high school French (formerly FRE 127) This course continues students' development of French language and culture by building and expanding on the culture, vocabulary and language structures learned in FREN-1260. New language functions will be presented in meaningful activities that emphasize all four language skills: speaking, listening, reading, and writing and allow for further cultural exposure. Students are required to use computer based technology to practice these skills. (5 contact hrs)

FREN-2360 — Intermediate French 1 — 4.00 credit hours

- Prerequisite: FREN-1270 (formerly FRE 236) Third-semester French picks up where FREN-1270 has ended. The central goal is to advance the student's communicative ability and cultural competency with an emphasis on assimilating the language for complex communicative purposes. New language functions will be presented in meaningful activities that emphasize all four language skills: speaking, listening, reading and writing and empower further cultural exploration. Students are required to use computer based technology to practice these skills. (5 contact hrs)

FREN-2370 — Intermediate French 2 — 4.00 credit hours

- Prerequisite: FREN-2360 (formerly FRE 237) This course will stress the expansion of the student's vocabulary, language skills and cultural competency. Classroom activities will center on a thorough review of the most important aspects of French grammar, as well as active oral and written use of the language. The oral exercises will expose students to extended discourse and will develop content and context as appropriate for students moving from the intermediate to the more advanced proficiency levels. Authentic material will provide the student with opportunities to critically engage with elaborate cultural situations. Students are required to use computer based technology to practice these skills. (5 contact hrs)

GEOG — Geography

GEOG-1100 — Principles of Geography — 3.00 credit hours

- Prerequisite: None (formerly GEO 110) Geographic principles underlying the patterns of man's activity on earth's surface. Systematic geography. (3 contact hrs)

GEOG-1500 — Geography of Michigan & the Upper Great Lakes — 3.00 credit hours

- Prerequisite: None (formerly GEO 150) A geographic study of the landforms, culture and economic activities of Michigan and the surrounding Great Lakes states and provinces. (3 contact hrs)

GEOG-2000 — World Regional Geography — 4.00 credit hours

- Prerequisite: None (formerly GEO 200) An introductory study of geography from a world regional perspective focusing upon the distribution and interconnections of the world's physical, economic, cultural, and political systems. (4 contact hrs)

GEOL — Geology

GEOL-1080 — Geology of Michigan — 3.00 credit hours

- Prerequisite: None
(formerly GEL 108) A basic introduction to Michigan geology, including its minerals and rocks, fossils, scenic features and the processes that formed them, geologic history, and economic geology. Not intended for geology majors. (3 contact hrs) South Campus.

GEOL-1140 — Introduction to Physical Geology — 4.00 credit hours

- Prerequisite: None
(formerly GEL 114) An integrated lecture-laboratory course that introduces students to the study of Geology. Coverage includes formation and identification of common minerals and rocks, development of Earth's landscape through the study of surface processes, origin of volcanoes, earthquakes, and mountain ranges, and their relationship to the Theory of Plate Tectonics. One optional field trip. (6 contact hrs)

GEOL-1150 — Historical Geology: the Study of the Geologic History of Planet Earth — 4.00 credit hours

- Prerequisite: None
(formerly GEL 115) An integrated lecture-laboratory-field course that studies the geologic history of Planet Earth from its creation to the present time. The first Part of the course focuses on the methods geologists use to investigate and unravel Earth's history; the second Part of the course applies these methods to present the geologic history of the North American continent. One required field trip. (6 contact hrs)

GRMN — German Language

GRMN-1260 — Elementary German 1 — 4.00 credit hours

- Prerequisite: None
(formerly GER 126) This course is designed to introduce students to the German speaking world and German vocabulary and grammatical structures necessary to express personal meaning on basic topics. Students will engage in these activities within contextualized cultural settings. The vocabulary and grammatical structures are integrated into interactive and communicative activities that emphasize all four language skills: speaking, listening, reading, and writing. Students are required to use computer based technology to practice these skills. (5 contact hrs)

GRMN-1270 — Elementary German 2 — 4.00 credit hours

- Prerequisite: GRMN-1260 or two or more years of high school German
(formerly GER 127) This course continues students' development of German language and culture by building and expanding on the culture, vocabulary and language structures learned in GRMN-1260. New language functions will be presented in meaningful activities that emphasize all four language skills: speaking, listening, reading, and writing and allow for further cultural exposure. Students are required to use computer based technology to practice these skills. (5 contact hrs)

GRMN-2360 — Intermediate German 1 — 4.00 credit hours

- Prerequisite: GRMN-1270
(formerly GER 236) Third-semester German picks up where GRMN-1270 has ended. The central goal is to advance the student's communicative ability and cultural competency with an emphasis on assimilating the language for complex communicative purposes. New language functions will be presented in meaningful activities that emphasize all four language skills: speaking, listening, reading and writing, and empower further cultural exploration. Students are required to use computer based technology to practice these skills. (5 contact hrs)

HHSC — Health & Human Service – General

HHSC-1010 — Animal Health Careers — 1.00 credit hours

- Prerequisite: None
(formerly ALH 101) HHSC-1010 gives students information on the various career opportunities available in the animal health field. Topics include: Veterinarian, Veterinary Technician, Veterinary Assistant, Zoo Work, Kennel Management, various species-specific careers, governmental and research careers, and business opportunities. Additional topics include: education requirements, licensing and registration, ethics, and jurisprudence. (1 contact hr) Center Campus.

HHSC-1020 — Physical Therapy Careers — 1.00 credit hours

- Prerequisite: None
(formerly ALH 102) HHSC-1020 introduces students to the practice of physical therapy in various settings. Topics include an overview of the health care systems, the history of physical therapy, the roles and functions of physical therapy providers, and the language of the physical therapy profession. (2 contact hrs per week for 8 wks) Center Campus.

HHSC-1030 — Orientation to Occupational Therapy — 1.00 credit hours

- Prerequisite: None
(formerly ALH 103) This course is designed to orient the student to the practice of occupational therapy in various health care settings. Review of foundations, history, professional organizations, legal and ethical aspects of practice and philosophical base of the profession and its personnel. Includes observational experience. (1 contact hr) Center Campus.

HHSC-1040 — Introduction to the Profession of Nursing — 1.50 credit hours

- Prerequisite: None
HHSC-1040 provides introductory information related to the practice of nursing. It explores key concepts instrumental to nursing in relationship to nurses' scope of practice and the use of technology in an ever-changing, multicultural healthcare environment. (1.5 contact hrs)

HHSC-1700 — Medical Terminology — 3.00 credit hours

- Prerequisite: None
(formerly MAST-1700) This course is designed for those individuals who have a need for working knowledge of medical terminology in a variety of medical, paramedical, and medical office positions. Stress will be placed on medical terminology as it occurs in the body's many anatomical systems encompassing the structure of each anatomical system, common disease, anomalies, and surgeries. (3 contact hrs)

HIST — History

HIST-1260 — Women in European History to 1450 — 3.00 credit hours

- Prerequisite: None
(formerly HIS 126) A survey of the history of women and their roles (political, economic, social, religious) in European history from prehistory through the Middle Ages including accounts of selected exceptional women, notable and notorious alike, who left their mark on the past. (3 contact hrs)

HIST-1270 — Women in European History, 1450-1848 — 3.00 credit hours

- Prerequisite: None
(formerly HIS 127) A survey of the history of women and their roles (political, economic, social, religious, cultural) in European history from the Renaissance to the beginning of the women's movement in 1848 and including accounts of selected exceptional women, notable and notorious alike, who left their mark on the past. (3 contact hrs)

HIST-1400 — History Goes to the Movies — 3.00 credit hours

- Prerequisite: None
(formerly HIS 140) Explores and evaluates historical fact, fancy and falsehood portrayed in feature films depicting an historical era or specific historical theme; examines historical problems raised by cinematic subjects. (3 contact hrs)

HIST-1500 — Western Civilization to 1648 — 4.00 credit hours

- Prerequisite: None
(formerly HIST-1100) The evolution of Western Civilization and its development from ancient times through the reformation. (4 contact hrs)

HIST-1600 — Western Civilization Since 1648 — 4.00 credit hours

- Prerequisite: None
(formerly HIST-1210) The people, ideas, and movements, both revolutionary and reactionary that shaped modern western history. (4 contact hrs)

HIST-1700 — The World Since 1945 — 3.00 credit hours

- Prerequisite: None
This course focuses on the recovery from World War II, the Cold War, decolonization, the emergence of Asia, the breakup of the Soviet Union, and globalization. (3 contact hrs)

HIST-2000 — History of Invention & Technology in America — 3.00 credit hours

- Prerequisite: None
(formerly HIS 200) A survey of inventions, their technological application and how they affected American economic, social, and political development. (3 contact hrs)

HIST-2100 — History of the United States to 1877 — 4.00 credit hours

- Prerequisite: None
(formerly HIST-2300) Broad historical view of development of the United States before 1877. (4 contact hrs)

HIST-2200 — History of the United States Since 1877 — 4.00 credit hours

- Prerequisite: None
(formerly HIST-2310) A broad historical survey of the emergence of the United States as an industrial nation and world power. (4 contact hrs)

HIST-2330 — History of American Movies 1896-1950 — 3.00 credit hours

- Prerequisite: None
(formerly HIS 233) Surveys the development of American Society by viewing movies as Part of our popular culture. (3 contact hrs)

HIST-2340 — Cultural History: American Architecture 1630-2000 — 3.00 credit hours

- Prerequisite: None
(formerly HIST-2911) The events and personalities that shaped the development of American architectural history from the colonial period to the present including an appreciation of the relationship between America's history and value system and its architectural traditions. (3 contact hrs)

HIST-2360 — The Changing of America, 1945 to the Present — 3.00 credit hours

- Prerequisite: None
(formerly HIS 236) Analysis of the forces that have shaped modern America: the Cold War, the Kennedy years, the Great Society, Vietnam, Watergate, the Energy Crisis, the Conservative Resurgence. (3 contact hrs)

HIST-2370 — Vietnam Wars — An International History, 1945 to Present — 4.00 credit hours

- Prerequisite: None (formerly HIST-2912) HIST-2370 surveys the varied geopolitical, strategic, military, economic, social, technological, cultural, and intellectual developments that contributed to the ever deepening involvement of the United States and its allies in Vietnam over the years after World War II. The course also considers the Vietnam War as a microcosm of the varied international political, economic, social and cultural forces that shaped twentieth century world history, including colonialism, imperialism, nationalism, capitalism, communism, revolution, westernization, modernization, nation-building, decolonization, Third-World economic development, the Cold War and globalization. (4 contact hrs)

HIST-2375 — War, Genocide & the Holocaust — 4.00 credit hours

- Prerequisite: None (formerly HIST-2913) The purpose of this course is to better understand the origins, development, conduct, and legacy of the Holocaust and other genocides that have occurred in the 20th century. It explores the historical, religious, political, cultural, and ideological roots of the systematic and state-sponsored mass murder by the Nazi's of millions of Jews, Gypsies, the physically and mentally disabled, homosexuals, political and religious dissidents and the Slavic peoples of Poland and Russia who were portrayed in Nazi propaganda as racially inferior. Although the Holocaust seems far removed from our contemporary experience, it is a defining moment in world history and the archetype of more recent genocides. (4 contact hrs)

HIST-2390 — The History of Michigan — 3.00 credit hours

- Prerequisite: None (formerly HIS 239) A general survey of the historical development of Michigan from the primitive wilderness to the present. The growth of the cultural, economic, political, and social institutions which enhance understanding of Michigan will be studied. (3 contact hrs)

HIST-2420 — Latin America in the Modern World — 3.00 credit hours

- Prerequisite: None (formerly HIS 242) The study of changes in Latin American civilization in the 19th and 20th centuries. A survey of political, economic, and social problems of the many Latin American nations in the modern world. (3 contact hrs)

HIST-2520 — Asia in the Modern World — 4.00 credit hours

- Prerequisite: None (formerly HIS 252) The study of Asian nations and their problems in the 19th and 20th centuries. The western influence on Asian culture and history; the position of Asian nations in present international affairs. (4 contact hrs)

HIST-2650 — Middle East Since 1945 — 3.00 credit hours

- Prerequisite: None This course provides an introduction to the history and culture of the modern Middle East and the major events which have shaped its development since 1945. Events such as independence, Arab-Israeli Conflict, and the Cold War as well as their resulting legacies within the region will be highlighted. Particular reference will be given to not only key cultural and artistic contributions of the region but also to such ongoing regional challenges as poverty, income inequality, modernization/liberalization, and the relationship between Islam and the state. The effectiveness and potential future impact of such regional solutions as Pan-Arabism, Pan-Islam, and Islamic Fundamentalism will be explored. (3 contact hrs)

HITT — Health Information Technology

HITT-1102 — Introduction to Health Information Management & the Health Care Environment — 3.00 credit hours

- ▶ Prerequisite: Admission into Health Information Technology Program and BIOL-2710, HHSC-1700, ITCS-1010, and BCOM-2050 with grade C or better
- ▶ Corequisite: HITT-1103, HITT-1104
This course provides the student with an introduction to the organization of health care and to the health information management profession. Health record content, documentation requirements, and the accrediting and licensing agencies that govern health information will be reviewed. (3 contact hrs) Center Campus. Fall semester only.

HITT-1103 — Legal Aspects of Health Information Management — 3.00 credit hours

- ▶ Prerequisite: Admission into Health Information Technology Program and BIOL-2710, HHSC-1700, ITCS-1010, and BCOM-2050 with grade C or better
- ▶ Corequisite: HITT-1102, HITT-1104
This course covers legal and accreditation issues in health information management, including the Health Insurance Portability and Accountability Act (HIPAA); confidentiality and the right to privacy; the legislative process; the local, state, and federal court systems; legal vocabulary; retention directions; and ethical issues in health care and health information management. (3 contact hrs) Center Campus. Fall semester only.

HITT-1104 — Health Information Statistics — 4.00 credit hours

- ▶ Prerequisite: Admission into Health Information Technology Program and BIOL-2710, HHSC-1700, ITCS-1010, and BCOM-2050 with grade C or better
- ▶ Corequisite: HITT-1102, HITT-1103
(formerly HITT-2107) HITT-1104 discusses the fundamental concepts of the most frequently used health statistics, including vital and descriptive statistics, emphasizing the reliability and validity of data and database issues such as data searching and access. (4 contact hrs) Center Campus. Fall semester only.

HITT-1201 — Pathophysiology & Pharmacology Applications in Health Information — 3.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program, and HITT-1102, HITT-1103, and HITT-1104, with grade C or better
- ▶ Corequisite: HITT-1206, HITT-1208, HITT-1209
The course focus is on description of conditions and diseases of the organ systems, including etiology, signs and symptoms, and methods of diagnosis and treatment. Students will build on their knowledge of anatomy and physiology and medical terminology through a detailed study of common pathological conditions and the drugs used in their treatment. (3 contact hrs) Center Campus. Winter semester only.

HITT-1206 — Health Information Management Systems — 3.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program, and HITT-1102, HITT-1103, and HITT-1104 with grade C or better
- ▶ Corequisite: HITT-1201, HITT-1208, HITT-1209
(formerly HITT-1203) This course provides the students with an overview of various health information management systems. Students will gain knowledge of chart tracking, chart deficiency, processing release of information requests, master patient index, and various registries. A hands-on lab will help the students gain proficiency in basic health information management functions. (4 contact hrs) Center Campus. Winter semester only.

HITT-1208 — Computers in Healthcare — 2.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program, and HITT-1102, HITT-1103, and HITT-1104 with grade C or better
- ▶ Corequisite: HITT-1201, HITT-1206, HITT-1209 (formerly HITT-1205) This course, providing an overview of information technology in healthcare, reviews common software applications used in organizations (administrative, patient registration, ADT, clinical applications, point-of-care data capture, radiology, pharmacy, and other ancillary departments) and the role of the health information management professional in the applications. Students must be fluent with word processing, e-mail, Internet searching, Excel, PowerPoint, and basic database development and query. This course covers current information in the following areas: data and information, data integrity, document imaging, electronic health records, and emerging technologies in healthcare information systems. (2 contact hrs) Center Campus. Winter semester only.

HITT-1209 — International Classification of Disease (ICD) — Beginning Coding — 3.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program, and HITT-1102, HITT-1103, and HITT-1104 with grade C or better
- ▶ Corequisite: HITT-1201, HITT-1206, HITT-1208 (HITT-1209 & HITT-2108 together replace HITT-1207) HITT-1209 introduces students to the International Classification of Disease (ICD) as used in diagnostic and procedural coding. Laboratory session focuses on the application of the related skills with accuracy and completeness using manual and computerized methods. (4 contact hours) Center Campus. Winter semester only.

HITT-2101 — Professional Practice Experience 1 — 3.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program and HITT-1201, HITT-1206, HITT-1208 and HITT-1209 with grade C or better
- ▶ Corequisite: HITT-2105, HITT-2106, HITT-2108 During this professional practice experience, students will apply to non-acute care settings knowledge from previous courses. Students will be expected to complete the professional practice experience manuals provided at the beginning of the semester. This is a non-paid, non-working clinical affiliation. Students may be asked to complete assignments given by the clinical site periodically, but may not be substituted for paid workers. Effective 2010FA, this course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (8 contact hrs per week for 16 wks) Center Campus. Fall semester only.

HITT-2105 — Healthcare Reimbursement Systems — 3.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program and HITT-1201, HITT-1206, HITT-1208, and HITT-1209 with grade C or better
- ▶ Corequisite: HITT-2101, HITT-2106, HITT-2108 (formerly HITT-2102) This course covers the complex financial systems in today's healthcare environment. The student will obtain insight into how reimbursement systems have made an impact on providers, payers, and consumers. Students will develop skills in coding compliance, revenue cycle management and case mix management. (3 contact hrs) Center Campus. Fall semester only.

HITT-2106 — CPT/HCPCS & Outpatient Coding — 3.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program, and HITT-1201, HITT-1206, HITT-1208, and HITT-1209 with grade C or better
- ▶ Corequisite: HITT-2101, HITT-2105, HITT-2108 (formerly HITT-2103) This course uses Current Procedural Terminology (CPT) to prepare the student to code various body systems, disease processes and treatments in the outpatient settings. Billing and insurance procedures as well as chargemaster description and maintenance will be addressed. This course uses encoder and grouping software. (4 contact hrs) Center Campus. Fall semester only.

HITT-2108 — International Classification of Disease (ICD) — Intermediate Coding — 3.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program, and HITT-1201, HITT-1206, HITT-1208, and HITT-1209, with grade C or better
- ▶ Corequisite: HITT-2101, HITT-2105, HITT-2106 (HITT-1209 & HITT-2108 together replace HITT-1207) HITT-2108 is a continuation of HITT-1209 that emphasizes the development of intermediate skills to code accurately and ethically. Students will gain an understanding of case mix analysis and application of reimbursement policies and procedures. Advanced case studies, along with the computerized encoding software, will be used in this course. (4 contact hrs) Center Campus.

HITT-2202 — Organizational Performance for Health Information Management Professionals — 3.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program, and HITT-2101, HITT-2105, HITT-2106, and HITT-2108, with grade C or better
- ▶ Corequisite: HITT-2203, HITT-2204, HITT-2205
This course is an introduction to quality assessment and improvement techniques. Students will learn about data collection tools, data analysis, reporting methods, quality assessment plans, team development, utilization and resource management, case management, risk management, clinical and critical pathways, project management, and accreditation standards governing a variety of health care organizations. The instruction will cover the organizational structure of the medical staff and its composite members and will provide an overview of a Joint Commission on Accreditation of Health Care Organizations survey schedule. Other issues that may be addressed include practitioner credentialing, information management plans and how they interface with quality assessment efforts, standard performance measures, and practice guidelines. (3 contact hrs) Center Campus. Winter semester only.

HITT-2203 — Management for Health Information Management Professionals — 3.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program, and HITT-2101, HITT-2105, HITT-2106, and HITT-2108, with grade C or better
- ▶ Corequisite: HITT-2202, HITT-2204, HITT-2205
This course is an overview of management principles for first line managers in the Health Information Management (HIM) field. Topics covered in the course include motivational theory, leadership, supervisory skills, human resource management, budgeting, ergonomics, marketing HIM services, presentation skills and techniques, professional image and development, HIM departmental performance improvement and appropriate oral and communication skills. (3 contact hrs) Center Campus. Winter semester only.

HITT-2204 — Health Information Technology Seminar — 1.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program, and HITT-2101, HITT-2105, HITT-2106 and HITT-2108 with grade C or better
- ▶ Corequisite: HITT-2202, HITT-2203, HITT-2205
This course will assist the student to prepare for the national Registered Health Information Technician examination. The student will develop an individual or group study plan and complete a mock examination. In addition, the course will discuss skills for job searching and interviewing and review the importance of continuing education within the health information management profession. (1 contact hr) Center Campus. Winter semester only.

HITT-2205 — Professional Practice Experience 2 — 3.00 credit hours

- ▶ Prerequisite: Admission into the Health Information Technology Program, HITT-2101, HITT-2105, HITT-2106, and HITT-2108, with grade C or better
- ▶ Corequisite: HITT-2202, HITT-2203, HITT-2204 (formerly HITT-2201) Student will demonstrate basic competencies of health information technology in an acute care setting. This supervised professional practice experience will provide the students with observation of and interaction with health information functions. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (8 contact hrs) Center Campus. Winter semester only.

HLND - Homeland Security

HLND-1000 — Citizen Emergency Preparedness — 2.00 credit hours

- ▶ Prerequisite: None
HLND-1000 introduces students to the elements of disaster preparedness for hazards that may impact a community. Students are trained in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations, and will be certified to the healthcare provider level in accordance with the CPR standards of the American Heart Association. The course will introduce students to topics which will begin to prepare them to assist others in their home, neighborhood, or workplace following a disastrous event when professional responders may not be immediately available to help. (4 contact hrs)

HLND-1010 — Citizen Emergency Preparedness for Medical Assistants — 2.00 credit hours

- ▶ Prerequisite: None
- ▶ Corequisite: MAST-1360, MAST-1400, MAST-1500, MAST-1800
HLND-1010 introduces students to the elements of disaster preparedness for hazards that may impact a community. Students are trained in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations, and will be certified to the healthcare provider level in accordance with the CPR standards of the American Heart Association. The course will introduce students to topics which will begin to prepare them to assist others in their home, neighborhood, or workplace following a disastrous event when professional responders may not be immediately available to help. (4 contact hrs)

HLND-1100 — Introduction to Homeland Security — 3.00 credit hours

- ▶ Prerequisite: None
(formerly HLND-2911) HLND-1100 introduces students to the vocabulary and to the important components of Homeland Security and discusses the importance of the agencies associated with Homeland Security and their inter-related duties and relationships. It examines historical events that impact Homeland Security, state, national, and international laws, and the most critical threats confronting Homeland Security. (3 contact hrs)

HLND-1180 — Intelligence Analysis & Security Management — 3.00 credit hours

- ▶ Prerequisite: None
HLND-1180 examines intelligence analysis and its indispensable relationship to the security management of terrorist attacks, man-made disasters, and natural disasters. It also explores vulnerabilities of our national defense and private sectors, as well as the threats posed to these institutions by terrorists, man-made disasters, and natural disasters. Students will discuss substantive issues regarding intelligence support of homeland security measures implemented by the United States and explore how the intelligence community operates. (3 contact hrs)

HLND-1190 — Border Security & Transportation — 3.00 credit hours

- ▶ Prerequisite: None
HLND-1190 provides an in-depth view of modern border and transportation security. Specific topics include security for seaports, ships, aircraft, trains, trucks, pipelines, and buses. Discussion focuses on the technology needed to detect terrorists and their weapons as well as on the legal, economic, political, and cultural aspects of terrorism. (3 contact hours)

HLND-2000 — Introduction to Emergency Management — 3.00 credit hours

- Prerequisite: None
HLND-2000 addresses preparedness and response in emergency situations resulting from natural, technological, and terrorist hazards. This is an exercise-based course which utilizes case-study analysis and table-top disaster exercises. The instructional methodologies include lecture, case-study review, planning exercises, and table-top simulations aimed at introducing students to a structured decision-making process that focuses on a multi-jurisdictional, multi-agency, and multi-disciplined approach to hazard mitigation. (3 contact hrs)

HTMT — Hospitality Management

HTMT-1010 — Introduction to the Hospitality Industry — 4.00 credit hours

- Prerequisite: None
This course will introduce the student to the topics which will begin to prepare them for managerial careers in these fields. This course will introduce the following areas: Industry Overview, Lodging, Commercial and Non-Commercial Food Service, Recreation and Leisure Organizations, The Business Meeting Coordinator, and a Career in Hospitality. (4 contact hrs)

HTMT-1020 — Lodging Management 1 — 3.00 credit hours

- Prerequisite: None
This course presents a logical approach to front office procedures by detailing the guest's interaction with the lodging facility, from the reservation process to checkout and settlement. The student will be exposed to the various elements of effective front office management, considering planning and evaluation of front office operations and staff. The front office operation is placed within the context of the overall operation of a hotel. (3 contact hrs)

HTMT-1030 — Event Planning — 3.00 credit hours

- Prerequisite: None
(replaces but does not equate to HTMT-2010) HTMT-1030 presents a logical approach to event management procedures by detailing events ranging from celebrity appearances, music concerts, fashion and charity shows to brand launches. The student will be exposed to the various elements of effective event planning, observing events, and evaluation of the events success. Event planning ensures the smooth running of an event, minimizes risks, maximizes the enjoyment of the audience and generates a positive financial return for the planner. (3 contact hrs)

HTMT-1040 — Hospitality Sales & Marketing — 4.00 credit hours

- Prerequisite: None
This course is designed to provide students with a solid background in hospitality sales, especially the principles and practices of marketing the services of the hospitality industry. Emphasizes the marketing concept with applications leading to customer satisfaction and reviews methods of external and internal stimulation of sales. The course may include practical sales/marketing exercises. (4 contact hrs)

HUMN — Humanities

HUMN-1210 — Introduction to the Arts — 3.00 credit hours

- Prerequisite: None
(formerly HUM 121) An introductory course in the Humanities, stressing an objective approach to the arts. It is designed to provide the student with the tools necessary to understanding various forms of artistic expression and to establish the understanding that form and content in art are products of fundamental cultural values. Painting, sculpture, architecture, and music are stressed. Related field trips are a Part of the humanities program. (3 contact hrs)

HUMN-1250 — Human Values, Technology & the Automobile — 3.00 credit hours

- Prerequisite: None
(formerly HUM 125) An examination within the context of an introduction to the Humanities of the combined impact of the motor vehicle, the automotive industry, and the highway upon American culture. Emphasis upon lifestyles and values through expressions available in the visual arts, industrial design, architecture, music, and literature. (3 contact hrs)

HUMN-1270 — Rock Music: A Cultural Perspective — 4.00 credit hours

- Prerequisite: None
This introductory course studies the development of rock music and its influence on society. The course includes basic music terminology as well as representative styles and artists that had major impacts on rock music and on society. (4 contact hrs)

HUMN-1300 — Theater Arts — 4.00 credit hours

- Prerequisite: None
This course is designed to increase understanding and appreciation of the theater. Discussions, writing, and performance activities will focus on theater history, dramatic writing, and production elements. Related field trips are a Part of the course. (4 contact hrs)

HUMN-1460 — The Film As Art — 3.00 credit hours

- Prerequisite: None
(formerly HUM 146) Analysis and evaluation of a variety of films as art media. Aesthetic considerations in film techniques; production and editing. Important feature films as well as film shorts will be screened and provide the basis for discussion. (3 contact hrs)

HUMN-1472 — Selected Studies in Film: the Western — 3.00 credit hours

- Prerequisite: None
(formerly HUM 147C) A course to permit the student further development of specialized interest in film. This will be done through background readings, screening, and analytical writing concerning major motion pictures. Such topics as film history, the documentary, film production, or the study of a major film artist will be offered. (3 contact hrs)

HUMN-1473 — Selected Studies in Film: Gangsters — 3.00 credit hours

- Prerequisite: None
(formerly HUM 147E) A course to permit the student further development of specialized interest in film. This will be done through background readings, screening, and analytical writing concerning major motion pictures. Such topics as film history, the documentary, film production, or the study of a major film artist will be offered. (3 contact hrs)

HUMN-1474 — Selected Studies in Film: Vietnam on Film — 3.00 credit hours

- Prerequisite: None
(formerly HUM 147D) A course to permit the student further development of specialized interest in film. This will be done through background readings, screening, and analytical writing concerning major motion pictures. Such topics as film history, the documentary, film production, or the study of a major film artist will be offered. (3 contact hrs)

HUMN-1476 — Selected Studies in Film: Science Fiction — 3.00 credit hours

- Prerequisite: None
(formerly HUM 147H) A course to permit the student further development of specialized interest in film. This will be done through background readings, screening, and analytical writing concerning major motion pictures. Such topics as film history, the documentary, film production, or the study of a major film artist will be offered. (3 contact hrs)

HUMN-1479 — Selected Studies in Film: Shakespeare Through Film — 3.00 credit hours

- Prerequisite: None
(formerly HUM 147K) A course to permit the student further development of specialized interest in film. This will be done through background readings, screening, and analytical writing concerning major motion pictures. Such topics as film history, the documentary, film production, or the study of a major film artist will be offered. (3 contact hrs)

HUMN-1700 — Comparative Religions — 3.00 credit hours

- Prerequisite: None
(formerly HUM 170) The course begins by exploring the dimensions and functions of religion in the lives of human beings. Then basic beliefs of a variety of eastern and western religions are surveyed and discussed, noting similarities and differences among these traditions. Field trips to a variety of religious services supplement classroom lecture and discussion. (3 contact hrs)

HUMN-1750 — Introduction to Mythology — 3.00 credit hours

- Prerequisite: None
(formerly HUM 175) An introductory outline of myths and legends from ancient Greece, Rome, the Middle East and Northern Europe, together with more recent and non-European parallels. Recurring themes and structures will be examined. Students will be introduced in stages to the subject matter for its own sake while analyzing the human thought behind each myth, plus its influence on literature, art and film. (3 contact hrs)

HUMN-2000 — Introduction to Asian Religions & Culture — 3.00 credit hours

- Prerequisite: None
(formerly HUM 200) The religious traditions of India, China and Japan form the backdrop for studying the impact of religion on community and culture. Special focus will be on the interaction of religion with community life and social change in the twentieth century. (3 contact hrs)

HUMN-2100 — Western Religious Traditions: Judaism, Christianity, & Islam — 3.00 credit hours

- Prerequisite: None
HUMN-2100 focuses on the traditions of Judaism, Christianity, and Islam. Through textbook, primary sources, and other materials, students will develop an understanding of the historical as well as modern-day manifestations of the religions covered. By the end of the class, students will possess an understanding of the history, system, and dynamics of these traditions. This class will also look at how these religions are being portrayed and dealt with in popular culture and the media. (3 contact hrs)

INTL — International Studies

INTL-2000 — Introduction to Latin America — 4.00 credit hours

- Prerequisite: None
(Humanities credit) This multidisciplinary course will draw on the arts, humanities, social science, history, and geography to examine significant questions using Latin America as the basis. These questions relate to the encounter of cultures, of forging community, notions of rights, revolution, and dependence and change in a globalizing world. The course will also explore an understanding of the roots of Latin America civilization with its ethnic diversity, including a profile on the Latin Americans descendants in the United States and an analysis of the role of military and US policies toward Latin America, the impact of the external debt, free trade agreements and their effects on the environment. (4 contact hrs)

INTL-2010 — Introduction to Russia & Eastern Europe — 4.00 credit hours

- Prerequisite: None (formerly INTL-2913) (Social Science credit) This course introduces students to the geography, history, economics, politics, and arts of Russia and Eastern Europe. This interdisciplinary introduction will help students better understand the values and experiences of other peoples as the world becomes a global community. (4 contact hrs)

INTL-2300 — Introduction to Japan — 4.00 credit hours

- Prerequisite: None (formerly INTL-2911) (Humanities credit) This course draws on the arts, humanities, social science, history, and geography of Japan. This course discusses the encounter of cultures, centrality of family, veneration of nature, synthesis of foreign ideas, and Japan's role in the global community. (4 contact hrs)

INTL-2500 — Introduction to Chinese Civilization — 4.00 credit hours

- Prerequisite: None (formerly INTL-2912) (Social Science credit) This multidisciplinary course will draw on geography, history, the social sciences, literature, and art to examine the evolution of traditional Chinese civilization from its prehistoric beginnings until 1600. This course will survey the environmental, political, social, economic, scientific, intellectual, religious, and cultural factors that contributed to the development of traditional Chinese civilization and the subsequent impact of that civilization on the world. (4 contact hrs)

INTL-2700 — Introduction to Africa — 4.00 credit hours

- Prerequisite: None (Social Science credit) Drawing on the social sciences, this multidisciplinary course examines the forces that have shaped African civilization. The course explores Africa's cultural and historical legacy outside of the Eurocentric parameter. General themes include the continent's geography, anthropology, religion, and art. The impacts that the Atlantic slave trade, European colonization, industrialization, and independence movements had on the Africa's political, economic, and social growth are also examined. (4 contact hrs)

INTL-2800 — Introduction to the Middle East — 4.00 credit hours

- Prerequisite: None This multi-disciplinary introductory course offers a general survey of the arts, humanities, social science, history and geography of the Middle East. Topics will be drawn from historical and contemporary issues relevant to the analysis of the Middle East as a complex and rich regional system within a changing globalized world. The course will also explore Middle Eastern diversity and its expressions in music, art, literature, and film produced by the cultures of the region. Special attention will be given to the consistent contact between the West and the Middle East, beginning in the middle ages through the crusades and perpetuating to current times, as manifested in different western economic and military policies implemented in the region. In addition, the curriculum will touch on critical issues such as the veil and women's rights, the Middle-Eastern experience in the US, the war on terror, the Israeli-Palestinian conflict, and the Arab Spring. A central objective of the course is targeted towards increasing sensitivity to racial bias and improving students' awareness of multicultural issues. (4 contact hrs)

ITAL — Italian Language

ITAL-1260 — Elementary Italian 1 — 4.00 credit hours

- Prerequisite: None (formerly ITA 126) This course is designed to introduce students to the Italian speaking world and Italian vocabulary and grammatical structures necessary to express personal meaning on basic topics. Students will engage in these activities within contextualized cultural settings. The vocabulary and grammatical structures are integrated into interactive and communicative activities that emphasize all four language skills: speaking, listening, reading, and writing. Students are required to use computer based technology to practice these skills. (5 contact hrs)

ITAL-1270 — Elementary Italian 2 — 4.00 credit hours

- Prerequisite: ITAL-1260 or two or more years of high school Italian (formerly ITA 127) This course continues students' development of Italian language and culture by building and expanding on the culture, vocabulary and language structures learned in ITAL-1260. New language functions will be presented in meaningful activities that emphasize all four language skills: speaking, listening, reading, and writing and allow for further cultural exposure. Students are required to use computer based technology to practice these skills. (5 contact hrs)

ITAL-2360 — Intermediate Italian 1 — 4.00 credit hours

- Prerequisite: ITAL-1270 (formerly ITA 236) Third-semester Italian picks up where ITAL-1270 has ended. The central goal is to advance the student's communicative ability and cultural competency with an emphasis on assimilating the language for complex communicative purposes. New language functions will be presented in meaningful activities that emphasize all four language skills: speaking, listening, reading and writing, and empower further cultural exploration. Students are required to use computer based technology to practice these skills. (5 contact hrs)

ITAL-2370 — Intermediate Italian 2 — 4.00 credit hours

- Prerequisite: ITAL-2360 (formerly ITA 237) This course will stress the expansion of the student's vocabulary, language skills and cultural competency. Classroom activities will center on a thorough review of the most important aspects of Italian grammar, as well as active oral and written use of the language. The oral exercises will expose students to extended discourse and will develop content and context as appropriate for students moving from the intermediate to the more advanced proficiency levels. Authentic material will provide the student with opportunities to critically engage with elaborate cultural situations. Students are required to use computer based technology to practice these skills. (5 contact hrs)

ITAP — IT- Applications Professional

ITAP-1510 — Advanced Business Document Design & Publication — 3.00 credit hours

- Prerequisite: ITCS-1400 (formerly ITAP-1500) Students will design business forms and publications employing principles of design, balance, restraint, and creativity as well as create interactive and static electronic forms that address specific business needs. Using the most recent features of MS® Office, students will create and record macros, organize and perform mail merges, and professionally format and publish a variety of business reports. Students will also learn how to save, protect, share, apply version controls, and publish business messages in a variety of ways. (3 contact hrs)

ITAP-1610 — Business Intelligence Systems & Analysis — 3.00 credit hours

- Prerequisite: ITCS-1400 (formerly ITAP-1600) This course allows students to apply advanced Microsoft Excel skills in order to analyze data from a Business Intelligence System. Students will also explore the fundamentals of Business Intelligence Systems, including what is a Business Intelligence System, how they are used, what are data mining and data warehouses, and the future of Business Intelligence Systems. The course will also explore advanced topics in Microsoft Excel. (3 contact hrs)

ITAP-1710 — Database Analysis & Design — 3.00 credit hours

- Prerequisite: ITCS-1400 (formerly ITAP-1700) This course allows students to apply advanced Microsoft Access skills in the design and implementation of a database. Students will explore the fundamentals of database design, logic, normalization, and security. The course also explores advanced topics in Microsoft Access. (3 contact hrs)

ITAP-2001 — Enterprise Content Management 1 — 3.00 credit hours

■ Prerequisite: None

This course introduces Enterprise Content Management (ECM), defining ECM components and technologies while reviewing typical content-related business challenges and trends. Students gain fundamental understanding of and appreciation for effective document management, workflow/business process management, compliance requirements and standards, and document lifecycles. (3 contact hrs)

ITAP-2010 — Fundamentals of Electronic Records Management (ERM) — 3.00 credit hours

■ Prerequisite: None

(formerly ITBS-1400) ITAP-2010 introduces Electronic Records Management (ERM). Organizations realize the need for focusing on the effective management of records. Topics include taxonomies, retention schedules, and legal and regulatory requirements. (3 contact hrs)

ITAP-2020 — Enterprise Content Management 2 — 3.00 credit hours

■ Prerequisite: ITAP-2001

This course introduces Enterprise Content Management 2 content. Students will gain an understanding for the development and implementation of a content management system. Topics include creating indexes, electronic folders and taxonomies, workflow, versioning, searching, retrieval, scanning, importing various document and content types, auditing, and reporting. (3 contact hrs)

ITAP-2100 — Enterprise Collaboration for the Web — 3.00 credit hours

■ Prerequisite: ITWP-1000

This course introduces Enterprise Collaboration for the Web. Students will gain an understanding for the development and implementation of web portals using web collaboration tools. Topics include creating and modifying web pages, lists and libraries, views, data sources, controls, master pages, cascading style sheets, workflows, usability, and accessibility. (3 contact hrs)

ITBS — Business Information Systems

ITBS-1000 — Computer Keyboarding — 2.00 credit hours

■ Prerequisite: None

(formerly BIS 100) ITBS-1000 is designed for students who want to keyboard efficiently on personal computers. Students learn the touch method for keying alphabetic, numeric, punctuation, and selected symbol keys as well as how to operate related machine parts. (2 contact hrs)

ITBS-1020 — Keyboard Speed Development — 2.00 credit hours

■ Prerequisite: None

(formerly BIS 102) Keyboarding experience with the ability to touch type as least 20 words per minute is required. ITBS-1020 is designed to improve keyboarding skills. Emphasis is on a combination of speed and accuracy. Includes diagnostic and motivational drills, speed and accuracy exercises for improvement, and timed material for assessment. (2 contact hrs)

ITCS — Computer Information Systems

ITCS-1010 — Computer & Information Processing Principles — 4.00 credit hours

- Prerequisite: None
(formerly CIS 101) ITCS-1010 introduces Information Technology concepts and methods that knowledge workers use to organize and manage information resources. Computer concept topic areas include up-to-date information about hardware, software, the Internet, telecommunications and network systems, databases, commerce and transaction processing, and information and decision support systems. Students develop or enhance basic skills in using computer applications software (word processing, database management systems, spreadsheet, and presentation packages) to effectively communicate for the benefit of an organization. Methods of instruction include lecture and lab. (4 contact hrs)

ITCS-1140 — Introduction to Program Design & Development — 4.00 credit hours

- Prerequisite: None
(formerly ITCS-1130) ITCS-1140 provides students with a fundamental understanding of computer programming and the detailed logic used to develop them. Students also explore various programming techniques, constructs, debugging methods and object oriented concepts. (4 contact hrs)

ITCS-1160 — Introduction to Oracle: SQL — 2.00 credit hours

- Prerequisite: ITCS-1010 or ITCS-2335
(formerly CIS 116) No credit after ITCS-2280. ITCS-1160 provides practical knowledge of Structured Query Language to define, query, and update data using Oracle as the relational database. (2 contact hrs)

ITCS-1170 — Database Design & Implementation With SQL & XML — 4.00 credit hours

- Prerequisite: ITCS-1140 and either ITCS-1010 or ITCS-2335
No credit after ITCS-2280. ITCS-1170 familiarizes students with database usage, design, and implementation. It also explores fundamentals of Structured Query Language (SQL) along with Extensible Markup Language (XML). (4 contact hrs)

ITCS-1250 — C# Programming — 4.00 credit hours

- Prerequisite: ITCS-1140 or ITCS-1950
ITCS-1250 is an entry-level course covering syntax, input/output layout, testing, debugging, documentation, problem definition, loops, and decisions. Student programs are entered using Microsoft C#. (4 contact hrs)

ITCS-1400 — Micros in Business — 4.00 credit hours

- Prerequisite: ITCS-1010 or ITCS-2335
(formerly CIS 140) ITCS-1400 is an in-depth extension of work completed in ITCS-1010. Students develop the further understanding needed for entry-level positions in automated offices or for participation on teams involved in the use of advanced office systems. (4 contact hrs)

ITCS-1950 — Introduction to Game Development — 4.00 credit hours

- Prerequisite: None
(formerly ITCS-2913) ITCS-1950 introduces principles of game programming through hands-on creation of simple games with a current games-centered programming language. Major topics include syntax, data structures for games, designing game worlds with objects (OOP), sprites, audio playback, player input, animation, collision detection, simple physics, basic AI (Artificial Intelligence) and game engines. Both text-based and graphics-based games are examined. (4 contact hrs)

ITCS-2000 — Game Programming in Direct X with C++ — 4.00 credit hours

- Prerequisite: ITCS-2530 and ITCS-1950
ITCS-2000 provides students with higher order programming skills necessary to manipulate class level objects such as characters, sounds, background objects, and worlds used in the development of game programs. Students code game solutions utilizing Direct X and C++. (4 contact hrs)

ITCS-2050 — Advanced Game Development — 4.00 credit hours

- Prerequisite: ITCS-1950 and MACA-1040
Building on principles of game design presented in ITCS-1950, ITCS-2050 uses currently available game development software to create actual games. Students develop a text-based adventure game, a 2D single and multi-player game, and a 3D single and multi-player game. (4 contact hrs)

ITCS-2060 — Mobile Game Development — 3.00 credit hours

- Prerequisite: ITCS-1950, ITCS-2500, ITCS-2000, and ITCS-2050
ITCS-2060 will focus on practical hands-on development of games on handheld devices. The topics covered in Mobile Game Development will be mobile game concepts, mobile game mechanics, mobile game styles, game physics, and mobile game deployment. Students implement all programs and examples on a microcomputer and will deploy them on small devices. (4 contact hrs)

ITCS-2140 — Database Programming Using Microsoft SQL Server — 3.00 credit hours

- Prerequisite: ITCS-1170 and either ITCS-1140 or ITCS-1130
This course instructs students on how to develop a database using Structured Query Language (SQL) and Transaction Structured Query Language (T-SQL). Advanced querying techniques, implementation of programming objects, and working with XML data will also be explored. (3 contact hrs)

ITCS-2250 — Advanced C# Programming — 3.00 credit hours

- Prerequisite: ITCS-1140 or ITCS-1950
ITCS-2250 is an advanced course covering syntax, input/output layout, testing, debugging, documentation, Windows Forms, and an introduction to Windows Presentation Foundation using the current Dot Net Framework. Student programs will be entered using Microsoft C#. (3 contact hrs)

ITCS-2335 — Foundations of Business Information Technology — 4.00 credit hours

- Prerequisite: IT program major or admitted into Walsh College Fast Track program
ITCS-2335 examines current and developing Business Information Technologies (BIT) and their potential for satisfying emerging business needs. Students explore the critical role of BIT in modern business. (4 contact hrs)

ITCS-2430 — Database Maintenance Using Microsoft SQL Server — 3.00 credit hours

- Prerequisite: ITCS-1170
This course introduces students to database administration. Students will explore how to install, maintain, secure, trouble-shoot, and optimize a database using Microsoft SQL Server. (3 contact hrs)

ITCS-2500 — Introduction to Mobile Development — 3.00 credit hours

- Prerequisite: ITCS-1140 or ITCS-1950
ITCS-2500 provides students with a practical hands-on introduction to mobile application development. Students will learn about the mobile development framework and the fundamental concepts of classes, objects, menus, lists, buttons, services, XML, messaging, debugging, life cycle events, and data storage. Students taking this class should have a good working knowledge of programming (loops and decision structures) and design (flowcharting and pseudo code). (3 contact hrs)

ITCS-2510 — Mobile Development 2 — 3.00 credit hours

- Prerequisite: ITCS-2500
ITCS-2510 continues to focus on practical hands-on mobile application development. Advances topics in mobile development such as threads, services and notifications, databases, content providers, locations and maps, and application deployment. Students implement all programs and examples on a microcomputer. (3 contact hrs)

ITCS-2530 — C++ Programming 1 — 4.00 credit hours

- Prerequisite: ITCS-1140 or ITCS-1950
(formerly CIS 253) ITCS-2530 provides students with a practical introduction to the C++ object-oriented programming language. Students learn new concepts not available in traditional programming languages such as encapsulation, data hiding, and polymorphism. Students code programs using basic constructions of decision, loops, structures, and simple functions inherent to both the C and C++ languages. Additional topics involve objects, classes, data types and arrays. Students implement all programs and/or examples on microcomputers. (4 contact hrs)

ITCS-2550 — C++ Programming 2 — 3.00 credit hours

- Prerequisite: ITCS-2530
(formerly CIS 255) ITCS-2550 provides students with a continuing study of C++ object-orientated programming language. Students learn additional concepts of operator overloading, multiple public and private inheritance, C++ pointers, files and streams, virtual functions, and basic C++ CLASS libraries. Additional CLASS libraries will be used as required. Primarily, the course emphasizes object-orientated concepts and design. Students code programs involving objects, classes, multiple inheritance, new data types, C++ pointers, and file I/O. Students implement all programs and/or examples on microcomputers. (3 contact hrs)

ITCS-2590 — Java 1 — 4.00 credit hours

- Prerequisite: ITCS-1140 or ITCS-1950
(formerly CIS 259) ITCS-2590 provides students with a practical introduction to the Java programming language. Students learn how concepts of encapsulation, constructors, inheritance, and polymorphism are implemented within the language. Students code programs using primitive types, basic statements, and dynamic data structures. Additional topics involve objects, classes, applets, and API. Students implement all programs and/or examples on a microcomputer network. (4 contact hrs)

ITCS-2620 — Java 2 — 3.00 credit hours

- Prerequisite: ITCS-2590
(formerly CIS 262) ITCS-2620 provides students with a continuing study of the Java programming language. Students learn additional concepts involved with building portable GUI applications/applets using JFC Swing components, JavaBeans, and JDBC. Additional topics include RMI and Servlets. Students implement all programs and/or examples on a microcomputer network. (3 contact hrs)

ITCS-2830 — Applications Implementation & Testing — 4.00 credit hours

- Prerequisite: BCOM-2070 and either ITCS-1230 or ITCS-2590
ITCS-2830 provides students with practical experience in developing and critiquing sets of application level specifications. Students begin by developing components of application-level specifications given a set of high-level requirements. Students are then given a complete set of project specifications and a completed software application. Students design and execute a test plan; testing the application for compliance to application specifications. Students make recommendations for application improvements. Student improvement recommendations include the application interface, application function, processes supported by the application, source code errors, application security, and application deviations from the original project specifications. (4 contact hrs)

ITIA — IT– Information Assurance

ITIA-1200 — Introduction to Information Systems Security — 3.00 credit hours

- Prerequisite: ITNT-1500 or ITNC-1000 or ITNC-1030 (formerly ITCS-2180) ITIA-1200 introduces students to the various elements of information systems security. Topics include information security planning, logical and physical security design, security plan implementation and administration, and legal and liability issues surrounding information systems. Students explore various security threats and learn how to protect an organization against malicious attacks through processes that ensure confidentiality, availability, and data integrity. (3 contact hrs)

ITIA-1300 — Information Security Safeguards — 3.00 credit hours

- Prerequisite: ITIA-1200
ITIA-1300 focuses on information security technologies and provides hands-on lab exercises that prepare students to effectively defend a network. Perimeter components such as firewalls, VPNs, and intrusion detection systems are discussed and configured. Best practices of perimeter defense are examined, along with solutions to real-world problems associated with information security technologies. Students expand their knowledge of network security tools and techniques through various lab exercises. (3 contact hrs)

ITIA-1400 — Building an Information Protection Program — 3.00 credit hours

- Prerequisite: ITIA-1200 with grade C or better
ITIA-1400 guides students through the requirements necessary to establish and manage a successful Assets Protection Program in a global environment. Students learn how to safeguard corporate assets in a flexible, cost-effective manner using a state-of-the-art asset protection program. Students develop a comprehensive information systems security program that includes risk management, computer security incident handling, contingency planning, awareness and training, physical and environmental security, auditing, and corporate ethics. (3 contact hrs)

ITIA-2300 — Information Systems Threat Assessment — 3.00 credit hours

- Prerequisite: ITIA-1200 with grade C or better
ITIA-2300 provides a process for the systematic review of risk, threats, hazards, and concerns to an organization's security posture. As security professionals, students learn cost-effective measures to lower risk to an acceptable level. Students utilize various tools and methods for examining security weaknesses, creating an audit report, and recommending security improvements. (3 contact hrs)

ITIA-2600 — Principles of Cryptography — 3.00 credit hours

- Prerequisite: ITIA-1200 with grade C or better
ITIA-2600 introduces students to the principles of cryptography, both in theory and practice. Topics include classical encryption techniques, abstract algebra, number theory, symmetric and asymmetric ciphers, public and private key cryptosystems, message authentication, and hash algorithms. While abstract algebra and number theory play a large role in contemporary cryptography, limited time will be spent on mathematics. The primary focus of this course is applied cryptography, where students understand modern cryptographic systems, their strengths and weaknesses, and algorithms used. (3 contact hrs)

ITIA-2700 — Computer Forensics — 3.00 credit hours

- Prerequisite: ITOS-1310 or ITOS-1400 or ITOS-1410; ITOS-1710; and ITIA-1200 with grade C or better
This course gives students a solid foundation in computer forensics, helping them pass appropriate certification exams and become skilled computer forensics investigators. It covers various operating systems and computer hardware along with several computer forensics software tools. Students learn how to record a crime scene, how to properly secure the evidence, and how to evaluate and document a case. (3 contact hrs)

ITML — Microcomputer Literacy

ITML-1000 — Microcomputer Literacy — 2.00 credit hours

- Prerequisite: None
(formerly MCL 100) ITML-1000 is an introduction to microcomputer use intended for students with little or no microcomputer knowledge. Students are introduced to the uses of database, spreadsheet, graphics, word processing and telecommunication using microcomputers. (2 contact hrs)

ITNC — IT– Networking – Cisco

ITNC-1000 — Cisco Networking 1 — 4.00 credit hours

- Prerequisite: MATH-0070 proficiency (demonstrated by math placement score, completing MATH-0070 with grade C or better, being enrolled in a higher level math, or having higher level math on college transcript)
ITNC-1000 focuses on networking terminology and protocols, local area networks (LANs), wide area networks (WANs), Open System Interconnection (OSI) models, cabling, cabling tools, routers, router programming, Ethernet, IP addressing, and network standards. In accordance with the Cisco Quality Assurance Plan, to advance to the next course, students must pass the final exam with a score of 70% or greater and demonstrate proficiency in the skills-based assessment (graded as pass or fail). This is the first of four courses to prepare students for the Cisco Certified Network Associate (CCNA) exam. (4 contact hrs)

ITNC-1020 — Cisco Certified Entry Networking Technician (CCENT) 1 — 3.00 credit hours

- Prerequisite: None
ITNC-1020 focuses on the skills needed to obtain entry-level home network installer jobs, including home network technicians, computer technicians, cable installers, and help desk technicians. It provides a hands-on introduction to networking and the Internet using tools and hardware commonly found in home and small business environments. Network addressing, services, wireless technologies, ISP services, and basic network security are addressed. This is one of two courses that prepare students for the Cisco Certified Entry Networking Technician (CCENT) Certification Exam. (3 contact hrs)

ITNC-1030 — Cisco Certified Entry Networking Technician (CCENT) 2 — 3.00 credit hours

- Prerequisite: ITNC-1020
ITNC-1030 focuses on the skills needed to obtain entry-level home network installer jobs, including home network technicians, computer technicians, cable installers, and help desk technicians. It provides a hands-on introduction to networking and the Internet using tools and hardware commonly found in home and small business environments. Routing, WAN technologies, ISP services, and basic network security are addressed. This is the second of two courses that prepare students for the Cisco Certified Entry Networking Technician (CCENT) Certification Exam. (3 contact hrs)

ITNC-1100 — Cisco Networking 2 — 4.00 credit hours

- Prerequisite: ITNC-1000 or ITNC-1030
ITNC-1100 focuses on initial router configuration, TCP/IP, and access control lists (ACLs). Students develop skills on how to configure a router, manage Cisco IOS software, configure router protocols on routers, and set the access lists to control the access to routers. In accordance with the Cisco Quality Assurance Plan, in order to advance to the next course, students must pass the final exam with a score of 70% or greater and demonstrate proficiency in the skills-based assessment (graded as pass or fail). This is the second of four courses to prepare students for the Cisco Certified Network Associate (CCNA) exam. (4 contact hrs)

ITNC-2000 — Cisco Networking 3 — 4.00 credit hours

- Prerequisite: ITNC-1100
ITNC-2000 focuses on advanced IP addressing techniques (Variable Length Subnet Masking), Intermediate routing protocols (RIP v2, single-area OSPF, EIGRP), command-line interface configuration of switches, Ethernet switching, Virtual LANs (VLANs), Spanning Tree Protocol (STP), and VLAN Trunking Protocol (VTP). In accordance with the Cisco Quality Assurance Plan, to advance to the next course, students must pass the final exam with a score of 70% or greater and demonstrate proficiency in the skills-based assessment (graded as pass or fail). This is the third of four courses to prepare students for the Cisco Certified Network Associate (CCNA) exam. (4 contact hrs)

ITNC-2100 — Cisco Networking 4 — 4.00 credit hours

- Prerequisite: ITNC-2000
ITNC-2100 focuses on advanced IP addressing techniques (Network Address Translation, Port Address Translation, and DHCP), WAN technology and terminology, PPP, ISDN, DDR, Frame Relay, network management, and introduction to optical networking. This is the last of the four courses to prepare students for the Cisco Certified Network Associate (CCNA) exam. (4 contact hrs)

ITNC-2210 — Introduction to IP Telephony — 4.00 credit hours

- Prerequisite: ITNC-2100
(formerly ITNT-2911) ITNC-2210 explains how telephony infrastructure is built and works today, major concepts concerning voice and data networking, transmission of voice over data networks, and IP signaling protocols used to interwork with current telephony systems, and quality of service mechanisms. This course provides the foundation for gaining hands-on skills and detailed understanding of IP based voice packet telephony. (4 contact hrs)

ITNC-2300 — Cisco Certified Network Associate — Security — 4.00 credit hours

- Prerequisite: ITNC-2100
ITNC-2300 focuses on core network security concepts and skills needed to install, troubleshoot, and monitor a network to maintain the integrity, confidentiality, and availability of data and network devices. This course prepares students for the Cisco Certified Networking Associate - Security (CCNA Security) Certification Exam. (4 contact hrs)

ITNT — IT – Networking

ITNT-1500 — Principles of Networking — 4.00 credit hours

- Prerequisite: None
(formerly ITCS-1500 & ITCS-1510 together) ITNT-1500 introduces students to the basic principles and concepts of networking. It focuses on the terminology and technologies found in current networking environments. Topics include internetworking protocols and communication methods, network media, troubleshooting and configuration utilities, basics of network design and network management. (4 contact hrs)

ITNT-1600 — Introduction to Wireless Networks — 3.00 credit hours

- Prerequisite: ITNT-1500 or ITNC-1000 or ITNC-1030
ITNT-1600 provides a complete foundation of knowledge for individuals entering the wireless networking industry. Students learn the protocols, transmission methods and IEEE 802.11 standards of wireless communications; the advantages, disadvantages, and implications of different wireless technologies; the important types of wireless networks; and various key technologies and applications that have been developed on top of wireless infrastructures. Students gain a solid understanding of wireless device configuration from hands-on lab exercises incorporated throughout the course. (3 contact hrs)

ITNT-1700 — Wireless Network Integration — 3.00 credit hours

- Prerequisite: ITNT-1600
ITNT-1700 provides students with a continuing study of wireless network technologies with a focus on hardware installation, configuration, and management; troubleshooting techniques; wireless network project planning; and security. Students gain a solid understanding of wireless network integration and management from hands-on lab exercises incorporated throughout the course. (3 contact hrs)

ITNT-2130 — Network Design 1 — 3.00 credit hours

- Prerequisite: ITOS-1400 or ITOS-1410
(formerly ITCS-2130) ITNT-2130 focuses on the process of designing computer networks that meet specific business and technical goals. Students learn how to design a network that meets requirements for functionality, capacity, performance, availability, scalability, affordability, security, and manageability. (3 contact hrs)

ITOS — IT – Operating Systems

ITOS-1310 — Managing a MS Windows Client Environment — 3.00 credit hours

- Prerequisite: ITNT-1500 or ITNC-1000
(formerly ITOS-1300) ITOS-1310 provides a technical overview of the Microsoft Windows operating system, providing hands-on experience with commands and utilities. Students explore the basic structure, functions, and tools of the current Windows client operating system. Topics include installation, configuration, and management of hardware, user accounts, networking, printing, applications, security, performance, and troubleshooting. (3 contact hrs)

ITOS-1400 — Managing a Microsoft Windows Server Environment — 3.00 credit hours

- Prerequisite: ITNT-1500 or ITNC-1000 or ITNC-1030
(formerly ITCS-1440) This course provides students with the knowledge and skills required to manage accounts and resources, maintain server resources, monitor server performance, and safeguard data in a Microsoft Windows Server environment. Topics include managing user, computer, and group accounts; managing access to network resources; managing printers; managing an organizational unit in a network-based on Active Directory directory service; and implementing Group Policy to manage users and computers. (3 contact hrs)

ITOS-1410 — Windows Server Administration 1 Environment — 4.00 credit hours

- Prerequisite: ITNT-1500 or ITNC-1000
This course provides students with the knowledge and skills to install and configure a Microsoft Windows server environment. Topics include managing user accounts, resource management, hardware configuration, monitoring system performance, file and print services, basic Active Directory management, IP addressing, basic virtualization technologies, and basic Windows security principles. (4 contact hrs)

ITOS-1500 — Implementing Microsoft Windows Server Active Directory — 3.00 credit hours

- Prerequisite: ITOS-1310 or ITOS-1400
(formerly ITCS-2911) This course provides students with the knowledge and skills needed to successfully plan, implement, and troubleshoot a Microsoft Windows Server Active Directory directory service infrastructure. The course focuses on a Windows Server directory service environment, including forest and domain structure, Domain Name System (DNS), site topology and replication, organizational unit structure and delegation of administration, Group Policy, and user group and computer account strategies. (3 contact hrs)

ITOS-1510 — Windows Server Administration 2 Environment — 4.00 credit hours

► Prerequisite: ITOS-1410

This course provides students with the knowledge and skills to install and configure a Microsoft Windows server environment. Topics include operating system deployment, patch management, server monitoring, advanced file sharing, network infrastructure services, remote access, network security, intermediate Active Directory management, and Group Policy. (4 contact hrs)

ITOS-1600 — Managing a Microsoft Windows Application Infrastructure — 3.00 credit hours

► Prerequisite: ITOS-1310

This course provides the knowledge and skills to manage and configure Windows Server Applications Infrastructure technologies, including Terminal Services, Web Services infrastructure and security, Media Server, Microsoft Windows SharePoint Services server options, File Server, Print Services, network maintenance, and Simple Network Management Protocol. (3 contact hrs)

ITOS-1710 — Introduction to Linux — 3.00 credit hours

► Prerequisite: None

ITOS-1710 provides a technical overview of the Linux operating system, providing hands-on experience with commands and files. Students explore the basic structure, functions, and tools of the Linux operating system. Topics include basic Linux commands, files and directories, text editing, pipes and filters, shell environment, and scripting. This is one of two courses required for students wishing to pursue the Linux+ industry certification. (3 contact hrs)

ITOS-1720 — Linux Server Administration — 3.00 credit hours

► Prerequisite: ITOS-1710 and either ITNT-1500 or ITNC-1000 or ITNC-1030

ITOS-1720 provides students with the knowledge and skills required to perform basic Linux server administration. Topics include management of user accounts; configuring TCP/IP networking services; administering printing, web, file sharing, naming, and addressing services; configuring basic security and event logging. This is one of two courses required for students wishing to pursue the Linux+ industry certification. (3 contact hrs)

ITOS-2400 — Managing a Microsoft Windows Server Network — 3.00 credit hours

► Prerequisite: ITOS-1310 or ITOS-1400

ITOS-2400 introduces students to the major areas of network and network service configuration on Windows Server. Topics include configuring protocols, name resolution, remote access, RADIUS, routing, security, and vital network services such as DNS, WINS, DHCP, and IPSec. (3 contact hrs)

ITOS-2500 — Implementing & Managing Microsoft Exchange Server — 3.00 credit hours

► Prerequisite: ITOS-2400

ITOS-2500 provides students with the knowledge and skills that are necessary to update and support a reliable, secure messaging infrastructure. Students learn how to create, store, and share information within the infrastructure by properly configuring and managing Microsoft Exchange Server. This course prepares students to sit for Microsoft Certification Exam 70-284. (3 contact hrs)

ITOS-2510 — Virtualization Technologies — 3.00 credit hours

► Prerequisite: ITOS-1410 and ITOS-1710

This course provides students with the knowledge and skills to install, configure, and manage various virtualization technologies. Topics include an overview of virtualization offerings, and the installation, configuration, maintenance, backup and restore, and migration of virtual servers. Virtual storage and virtual networking will also be covered. (3 contact hrs)

ITOS-2600 — Windows Server Administration — 3.00 credit hours

► Prerequisite: ITOS-1500 and ITOS-2400

This course provides the skills required to provide day-to-day management of infrastructure, Web, and IT application servers for an enterprise organization. Students will create scripts and batch files to automate regular server administration tasks. (3 contact hrs)

ITOS-2700 — Windows Server Enterprise Administration — 3.00 credit hours

- Prerequisite: ITOS-1500 and ITOS-1600 and ITOS-2400
This course provides the knowledge and skills to manage the overall IT environment and architecture of an enterprise network. Students will translate business goals into technology decisions and designs, taking mid-range and long-term strategies into account. Students will make key decisions about network infrastructure, directory services, identity management, authentication, security policies, business continuity, and IT design. (3 contact hrs)

ITWP — IT– Web Programming

ITWP-1000 — Introduction to Web Programming — 3.00 credit hours

- Prerequisite: ITCS-1010 or ITCS-2335
(formerly ITCS-1340) This course introduces Web Programming using HTML, current web technologies, and website development tools. It emphasizes the fundamental understanding of HTML for web page development, the utilization of CSS for web page layout and formatting, and the use of JavaScript for interactivity and covers current industry standards, processes and techniques. (3 contact hrs)

ITWP-1050 — Basic Web Design With Cascading Style Sheets — 3.00 credit hours

- Prerequisite: ITWP-1000
(formerly ITWP-2911) This course provides students with the knowledge base and industry skill set to utilize Cascading Style Sheets to control and manage the look, feel and consistency of all web pages included within a specific web site. Students learn how to format fonts, text, page layouts, web page elements, and positioning. Validation using industry tools and web standards will be discussed. (3 contact hrs)

ITWP-1100 — Web Programming with JavaScript & Dynamic HTML — 3.00 credit hours

- Prerequisite: ITWP-1000
(formerly ITCS-1350) This course introduces students to the use of JavaScript programming as a development tool for interactive web pages including client-side processing. It emphasizes basic programming and key web authoring techniques with a focus on industry standards. Students explore how JavaScript supplements the use of Dynamic HTML, the flow of control, objects, functions, arrays, methods, and data manipulation. The DOM and AJAX are introduced. (3 contact hrs)

ITWP-1400 — SEO (Search Engine Optimization) For the Web — 4.00 credit hours

- Prerequisite: ITWP-1000
(formerly ITWP-1350) This course is designed to teach participants current Search Engine Optimization concepts and website techniques to obtain the most favorable search engine positions possible. Course topics include identifying appropriate keywords for optimization, designing a search-engine-friendly website, on/off page factors that influence search engine results, link-building strategies, using analytics to refine search results, and web copywriting. This course will also provide an overview of pay-per-click advertising and how various new media are used to promote a website and examine common industry tools for analyzing websites and improving search results. (4 contact hrs)

ITWP-2300 — Building Dynamic, Intelligent Web Based Solutions with ASP.NET — 3.00 credit hours

- Prerequisite: ITCS-1140, ITCS-1170, and ITWP-1000
(formerly ITCS-2440) In this advanced course, students gain experience implementing a website that supports CGI, ActiveX DLL, server-side scripting, client-side scripting, graphics, C#, scripts, cookies, and data base interrogation and updates. (3 contact hrs)

ITWP-2400 — Web Programming with XML — 3.00 credit hours

- ▶ Prerequisite: ITWP-1000 and ITCS-1130 or ITCS-1140, and ITCS-1160 or ITCS-1170 (formerly ITWP-2912) This course is designed to teach participants how to create a well-formed XML document, how to use CSS and XSLT style sheets to transform an XML document, and how to use XML as a data source to bind web elements to XML. Among the many topics that will be discussed are working with the DOM (Document Object Model), processing XML with application code and the integration of XML into an infrastructure. Common industry tools and applications for creating, debugging, and validating XML documents will be examined. (3 contact hrs)

ITWP-2600 — Web Commerce (E-Commerce) — 3.00 credit hours

- ▶ Prerequisite: ITWP-1000 and ITWP-1050 (formerly ITCS-2450) ITWP-2600 explores the activities required to correctly and efficiently implement an E-Commerce solution utilizing Dreamweaver or other development tools and methodologies. Participants construct a web site that includes catalog display, web site advertisement, email subscription, funds transference and collections, and other web site related activities necessary for a successful E-Commerce web presence. Social media techniques, social networking sites and components, online JavaScript libraries, XML and electronic cash vendors and services will be examined. (3 contact hrs)

ITWP-2750 — Web Programming: PHP — 3.00 credit hours

- ▶ Prerequisite: ITWP-1000 and ITOS-1710 and one of the following: ITCS-1230 or ITWP-1100 or ITCS-2530 or ITCS-2590
This course explores the development and implementation of the Web Programming Language PHP. Topics include language control logic, language specific functions and processes, arrays, manipulating strings, file upload, text file read and write, and database functionality including selects, inserts, and updates. Error handling and debugging will be discussed. (3 contact hrs)

ITWP-2810 — Web Principles for Industry — 3.00 credit hours

- ▶ Prerequisite: ITWP-1100, ITWP-1400, ITWP-2600 and ITWP-2300 or ITWP-2750 (formerly ITWP-2800) This course is designed to teach participants a fundamental understanding of Information Technology architecture as it relates to business principles using collaborative and research techniques. Course topics include database proficiencies, URL identification, testing and troubleshooting, security, mobile and multimedia trends, and global awareness. (3 contact hrs)

JOUR — Journalism

JOUR-1100 — Writing News for Publication — 3.00 credit hours

- ▶ Prerequisite: None (formerly JOUR 110) Focuses on the elements of news story writing and reporting. Student learns to write spot news and feature stories, interview newsmakers, and gather information. Student writing will be submitted to college student newspaper for publication. Journalistic style calls for typed assignments. (3 contact hrs)

LAWE — Law Enforcement

LAWE-1100 — Criminal Justice — 3.00 credit hours

- ▶ Prerequisite: None (formerly LAW 110) Philosophy and history of criminal justice; agencies and processes; evaluation of current criminal justice services and their social and constitutional aspects. (3 contact hrs) Center Campus.

LAWE-1120 — Introduction to Corrections — 3.00 credit hours

- ▶ Prerequisite: None (formerly LAWE-2911) This course introduces the philosophy and history of correctional agencies and processes, including incarceration, probation, and parole. (3 contact hrs) Center Campus.

LAWE-1280 — The Police Function — 3.00 credit hours

- Prerequisite: None
(formerly LAW 128) An overview of the police role in society and the way in which the police are organized to discharge that function in the United States. The organization of municipal policing is studied at both operational and administrative levels. This includes the patrol, investigative, specialized, and support functions as well as an examination of the selection and training requirements for police. (3 contact hrs) Center Campus.

LAWE-1290 — Current Issues in Policing — 3.00 credit hours

- Prerequisite: None
(formerly LAW 129) This course will select for study major issues affecting police. Examples are police-community relations; recruitment and selection; recognition and management of stress; the use of deadly force; new technology; and police productivity. The list will be updated to maintain currency. (3 contact hrs) Center Campus.

LAWE-1300 — Police Field Study — 3.00 credit hours

- Prerequisite: 30 semester hours of credit and faculty approval
(formerly LAW 130) This course is designed to give the advanced student an opportunity to observe field practices of law enforcement agencies. Students will spend time in a law enforcement agency such as a police department, sheriff's department, or court to observe actual job related tasks. In addition, the student will have classroom lectures regarding specific law enforcement responsibilities. (3 contact hrs) Center Campus.

LAWE-1320 — Interviewing — 3.00 credit hours

- Prerequisite: None
(formerly LAW 132) Practical interviewing and related consideration in agreement with current legal stipulations. (3 contact hrs) Center Campus.

LAWE-1400 — Crime Causation — 3.00 credit hours

- Prerequisite: None
(formerly LAW 140) Relationships between crime and social, political, economic, and behavioral factors. Crime prevention programs. Emphasis on urban crime. (3 contact hrs) Center Campus.

LAWE-1410 — Delinquency Prevention & Control — 3.00 credit hours

- Prerequisite: None
(formerly LAW 141) Problems of juvenile courts, institutional treatment, community resources for prevention, probation, and police programs. (3 contact hrs) Center Campus.

LAWE-1500 — Analysis of Terrorism — 3.00 credit hours

- Prerequisite: None
(formerly LAW 150) A detailed examination of the causes, phenomena, and significance of terrorism of all types, including those which are revolutionary in origin, as well as state, liberation, and criminal. The workshop, having provided a sound knowledge of the origins, leadership and policies of terrorism, will monitor its path and practices in the world of today as well as providing some assessment of the threat of tomorrow. By means of the workshop approach, each student will learn to track the activities of the various terrorist groups. (3 contact hrs)

LAWE-1600 — Introduction to Cyber Crime Investigation — 3.00 credit hours

- Prerequisite: None
(formerly LAWE-2915) LAWE-1600 provides students with an overview of cyber crimes, computer-related crime issues confronting the American criminal justice system, and various means of investigating those crimes. (3 contact hrs)

LAWE-2320 — Police Leadership, Management, & Supervision — 3.00 credit hours

- Prerequisite: None (formerly LAWE-2914) This course will provide students with basic knowledge of the theory and practice of effective leadership as it relates to law enforcement. Topics include distinguishing between management and leadership; personal traits, characteristics, and behaviors of effective leaders; and factors that influence interaction between various levels of police officers. Students will also assess their personal leadership skills. (3 contact hrs)

LAWE-2330 — Introduction to Criminal Investigations — 3.00 credit hours

- Prerequisite: None (formerly LAWE-2913) LAWE-2330 introduces the duties and role of the criminal investigator in conducting investigations. Topics include basic leads, investigative techniques, rules of evidence, and case preparation for court. (3 contact hrs) East Campus.

LAWE-2350 — Criminal Investigation & Laboratory Techniques — 4.00 credit hours

- Prerequisite: None (formerly LAW 235) Coordinated lecture and laboratory experience in the fundamentals of investigation, techniques of crime scene recording and search, collection and preservation of evidence, modus operandi, follow up and case preparation. (4 contact hrs) Center Campus.

LAWE-2680 — Evidence & Criminal Procedures — 4.00 credit hours

- Prerequisite: None (formerly LAW 268) Principles, duties, and mechanics of criminal procedure as applied to important areas of arrest, force, and search and seizure. (4 contact hrs) Center Campus.

LAWE-2690 — Criminal Law — 4.00 credit hours

- Prerequisite: None (formerly LAW 269) Elements of substantive criminal law relevant to attaining the preservation and protection of life and property. The structure, definitions, and most applicable pertinent sections of the criminal statutes. (4 contact hrs) Center Campus.

LAWE-2700 — Advanced Court Procedures — 3.00 credit hours

- Prerequisite: LAWE-1100 and either LAWE-1280 or LAWE-1290 (formerly LAW 270) This course provides practical experience in advanced court processes connected with law enforcement. The student will be presented with a factual scenario in which the student will be assigned a role. The student will then be faced with the consequences of police actions taken through civil, criminal, and department legal proceedings. (3 contact hrs) Center Campus.

LAWE-2810 — Basic Police Academy — 15.00 credit hours

- Prerequisite: Consent of department. Pre-service students must score a minimum level 4 on the ACT Work Keys reading for information examination. Students must meet the admissions standards as set by the Michigan Commission on Law Enforcement Standards (MCOLES). At a minimum, persons taking this course must be at least 18 years of age, have a valid Michigan driver's license, no felony convictions, and successfully pass the Michigan Commission on Law Enforcement Standards (MCOLES) reading and writing and physical fitness pre-employment tests. (formerly LAWE-2800) LAWE-2810 prepares students in the proper techniques of patrol procedures, criminal investigation, and crime scene process. Emphasis is on conflict resolution, report writing, and detention and prosecution of prisoners. First aid, investigations, evidence collection, disaster control, civil disorders, and tactical operations are also covered. This course meets the state-mandated requirements for preparing students to take the exam for State certifications for entry-level police officers. (48.25 contact hrs) East Campus.

LEGA — Legal Assistant

LEGA-2010 — Michigan Legal System & Ethics — 2.00 credit hours

- ▶ Prerequisite: None
(formerly LAT 201) A general orientation to the Michigan Legal Systems: its courts, processes and procedures. The Federal Court system is also reviewed. In-depth study of the Michigan Rules of Professional Conduct and their application to attorneys and legal assistants; review of the Code of Judicial Conduct and its application to all Michigan judges; ethical responsibilities of legal assistants arising from the Rules and Judicial Canons. (2 contact hrs) South Campus.

LEGA-2030 — Legal Research & Writing 1 — 3.00 credit hours

- ▶ Prerequisite: BLAW-1090 and LEGA-2010
(formerly LEGA-2080) LEGA-2030 provides students with the necessary skills in utilizing a law library and conducting legal research, including computer-assisted research. Students will analyze facts to determine legal issues and apply the law to discuss these issues by preparing a legal memorandum. Using “Plain English” in drafting the legal written product and ethical issues in good legal writing are emphasized. (3 contact hrs)

LEGA-2040 — Legal Research & Writing 2 — 3.00 credit hours

- ▶ Prerequisite: LEGA-2030
(formerly LEGA-2190) LEGA-2040 is a continuation of Legal Research & Writing 1. Students will further develop skills in utilizing a law library and conducting legal research, including computer-assisted research. Students will also analyze facts to determine legal arguments and apply the law to discuss these arguments by preparing a legal brief. (3 contact hrs)

LEGA-2090 — Legal Procedure — 4.00 credit hours

- ▶ Prerequisite: LEGA-2010
(formerly LAT 209) Step-by-step process on how to assist the lawyer in a civil lawsuit. Introduce the student to investigating and planning the litigation; pre-trial litigation; settlement, trial and post-trial proceedings; utilizing federal and state court rules. (4 contact hrs)

LEGA-2100 — Mechanics of Real Estate Law — 3.00 credit hours

- ▶ Prerequisite: LEGA-2010
(formerly LAT 210) A study of the law of real property. Emphasis upon the preparation of various real estate documents such as deeds, leases, closing statements, etc. (3 contact hrs)

LEGA-2110 — Principles of Family Law — 2.00 credit hours

- ▶ Prerequisite: LEGA-2010
(formerly LAT 211) A study of the marriage relationship; legal problems with children; dissolution of marriage; custody; legitimacy; adoption; change of name; guardianship; support; court procedures; separation agreements. (2 contact hrs)

LEGA-2120 — Administration of Estates — 2.00 credit hours

- ▶ Prerequisite: LEGA-2010
(formerly LAT 212) A presentation of information and procedures with respect to wills, trusts, estates, probate proceedings, conservatorships, administration of testate and intestate estates, analysis of the Estates and Protected Individuals Code (EPIC), will execution, life insurance, and estate planning. (2 contact hrs)

LEGA-2130 — Proceedings Under the Federal Bankruptcy Code & Debt Collection — 2.00 credit hours

- ▶ Prerequisite: LEGA-2010
(formerly LAT 213) The law of debt collection practice and procedure in Michigan and a study of the Federal Bankruptcy Code. Emphasis on the many forms and procedures used by attorneys in Michigan debt collection practice and Federal Bankruptcy practice. Students prepare a practice set of bankruptcy forms for a liquidation case. (2 contact hrs)

LEGA-2160 — Proceedings Under Administrative Agencies — 2.00 credit hours

- Prerequisite: LEGA-2010 (formerly LAT 216) Procedures for preparing cases for hearings before an administrative agency including researching appropriate regulations, preparing complaints and other phases of pleading, applying for execution of an order by the administrator, preparing claims for preliminary examination, providing data sought by administrative subpoena, taking depositions, and making discovery orders for preliminary examination. (2 contact hrs)

LEGA-2170 — Criminal Law & Procedures — 2.00 credit hours

- Prerequisite: LEGA-2010 (formerly LAT 217) A study of Michigan and Federal criminal law principles and procedures. An examination of the role and responsibilities of the Legal Assistant in aiding the attorney representing the criminally accused person in pre-trial, trial, and appellate proceedings. (2 contact hrs)

LEGA-2180 — Business Associations — 2.00 credit hours

- Prerequisite: LEGA-2010 (formerly LAT 218) A detailed study of the four major forms of doing business: sole proprietorship, partnership, corporation, and limited liability company, with an emphasis on the legal requirements to organize and operate each type, including a comparison of the liability involved. Various legal forms utilized in Michigan practice will be reviewed, together with the tax forms appropriate to each (state and federal). The Legal Assistant's role in assisting the attorney who represents clients in these various forms will be highlighted. (2 contact hrs)

LEGA-2210 — Electronic Evidence & Discovery — 4.00 credit hours

- Prerequisite: LEGA-2010 and LEGA-2090. (formerly LEGA-2911) A general orientation of the Laws of Evidence as it pertains to the Michigan Legal System. An examination of the role and responsibility of the Legal Assistant in the identification and preservation of electronic evidence in pre- and post-trial settings. (4 contact hrs) Online only.

LEGA-2220 — Computerized Litigation Support Concepts (CLSC) — 3.00 credit hours

- Prerequisite: ITCS-1010 and LEGA-2010
LEGA-2220 prepares students to use computer applications in legal organizations and in enhancing the success of legal assistants. Topics include various changes/trends in Internet legal/factual research, legal timekeeping and billing, and software for litigation support, case management, and docket control. The course also familiarizes students with common law office uses of WordPerfect and Microsoft Office applications. (3 contact hrs) Online only.

LIFE — Life-Career Development

LIFE-1000 — Career Exploration — 3.00 credit hours

- Prerequisite: None (formerly LCD 100) An experiential course in which career exploration is conducted based upon a person's interests, skills, values and personality type. This will be determined by appropriate interest, aptitude and personality type inventories and/or tests. Emphasis is placed on career research and setting realistic career goals. Academic tests and written assignments will be required. (3 contact hrs)

LIFE-1100 — Strategies for College Success — 3.00 credit hours

- Prerequisite: None (formerly LCD 110) An experiential course which enhances the understanding of techniques utilized by successful college students. Activities are designed to increase competency in those techniques. Topics include but are not limited to: expectations of college professors, characteristics of successful college students, time management, stress management, and the challenges of combining academic, career, and personal responsibilities. An analysis of personal learning style as suggested by personality type inventories will be conducted. Academic testing and written assignments will be required. (3 contact hrs)

MACA — Media & Communication Arts

MACA-1010 — Introduction to Photography — 4.00 credit hours

- Prerequisite: None
This course is an introduction to today's photography. Camera operations, exposure control, composition theory, image processing, and printing using current software applications are covered. Students must have a digital camera with manual exposure capabilities. (6 contact hrs) South Campus.

MACA-1020 — Fundamentals of Design — 4.00 credit hours

- Prerequisite: None
(formerly MCA 102, GCA 102) (3 credit hrs prior to Fall 2005) Introduction to design concept. Problems in two-dimensional design using lines and planes in black and white and color. (6 contact hrs) South Campus.

MACA-1040 — Illustration Fundamentals — 4.00 credit hours

- Prerequisite: None
(formerly MCA 104, GCA 104) (3 credit hrs prior to Fall 2005) Freehand and conceptual drawing dealing with perspective, composition, layout and rendering techniques used by the technical and commercial artist. (6 contact hrs) South Campus.

MACA-1050 — Digital Layout — 4.00 credit hours

- Prerequisite: None
(formerly MCA 105, PRT 145) (3 credit hrs prior to Fall 2005) Introduction to the Macintosh operating system and Digital Page Layout with QuarkXpress to create composite page layouts as B/W or color images. (6 contact hrs) South Campus.

MACA-1055 — Digital Layout: Adobe — 4.00 credit hours

- Prerequisite: None
(3 credit hrs prior to Fall 2005) Design and layout problems using the software applications Adobe InDesign and Adobe Acrobat. Students will utilize contemporary design fundamentals to create a variety of single and multi-page publications in black and white, spot and process color. (6 contact hrs) South Campus.

MACA-1065 — Black & White Photography — 4.00 credit hours

- Prerequisite: None
(formerly MACA-1060) This course is an introduction to black and white photography. Basic camera operations, exposure control, composition, film processing, and print enlargement will be covered. Students must have a 35mm single lens camera with manual controls. (6 contact hrs) South Campus.

MACA-1070 — Rendering — 4.00 credit hours

- Prerequisite: None
(formerly MCA 107, GCA 107) (3 credit hrs prior to Fall 2005) MACA-1070 covers final art rendering techniques in black and white and some color. It familiarizes students with a variety of media and mixed media including markers, prisma pencils, and ink. Problems include analyzing the pattern of reflections, light and shade, and the description of surface development on a variety of materials including chrome, sheetmetal, plastic and glass. (6 contact hrs) South Campus.

MACA-1090 — Figure Illustration 1 — 4.00 credit hours

- Prerequisite: None
(formerly MCA 109, GCA 109) (3 credit hrs prior to Fall 2005) Introduction to drawing the human form from life, photographs, and imagination using a variety of media and techniques; a comprehensive study and application of draftsmanship as it relates to the surface anatomy, body movements and relationships, and their systematic application to commercial illustration. (6 contact hrs)

MACA-1130 — Advertising Art — 4.00 credit hours

- ▶ Prerequisite: MACA-1020, and MACA-1050 or MACA-1055 (formerly MCA 113, GCA 103) (3 credit hrs prior to Fall 2005) Advertising for newspaper, magazine, and other communication forms. Application of a variety of media to assigned problems. (6 contact hrs)

MACA-1160 — Previsualization — 4.00 credit hours

- ▶ Prerequisite: None (formerly MACA-1150) Student projects examine a variety of concept and storytelling processes through visual communication. From print to film to animation to interactive media, the class focuses on the creative aspects of previsualization for industry and storyboarding in the communicative arts. (6 contact hrs)

MACA-1200 — Digital Illustration — 4.00 credit hours

- ▶ Prerequisite: MACA-1050 or MACA-1055 (formerly MCA 120, GCA 120) (3 credit hrs prior to Fall 2005) An introduction to vector based software applications Adobe Illustrator and Macromedia Freehand. Students create industry related illustrations including technical renderings, editorial and promotional illustrations. (6 contact hrs) South Campus.

MACA-1310 — Typography & Spacial Development — 4.00 credit hours

- ▶ Prerequisite: MACA-1200 and MACA-1320, and either MACA-1050 or MACA-1055 (formerly MACA-2912) This course presents an introduction to typography. Topics include type evolution, attributes of type, and type family classification. The course explores creative use of type with regard to legibility and readability in design layouts utilizing grids and type in a digital environment. (6 contact hrs) South Campus.

MACA-1320 — Introduction to Photoshop — 4.00 credit hours

- ▶ Prerequisite: None (formerly MACA-1300) MACA-1320 presents an introduction to Adobe Photoshop. Topics include file formats, resolutions, tools, and theories of image creation and manipulation. (6 contact hrs) South Campus.

MACA-1400 — Introduction to Digital Video — 4.00 credit hours

- ▶ Prerequisite: None (formerly MCA 140, GCS 292X) (3 credit hrs prior to Fall 2005) A practical hands-on course introducing the use of digital video equipment for studio and location applications. Pre-production planning, camera operations, lighting, audio acquisition, and editing techniques are covered. Emphasizing teamwork, students will work in each position of a production crew. Students use college provided digital video equipment and non-linear editing suites to produce effective video programming. (6 contact hrs) South Campus.

MACA-1410 — Television/Video Studio Production — 4.00 credit hours

- ▶ Prerequisite: None Lecture and hands-on experience in live to tape studio programming for television and video productions. Technical principles of studio recording of audio and video programs will be emphasized. Students will perform duties of each position in a studio production team. (6 contact hrs) South Campus.

MACA-1420 — Film Production 1 — 4.00 credit hours

- ▶ Prerequisite: MACA-1400 Students will gain hands-on experience in the responsibilities of production crew members in the film industry. MACA-1420 emphasizes the roles of producer, director, script supervisor, production assistant, camera operator, sound mixer, lighting technician, and editor. (6 contact hrs)

MACA-1720 — Web Page Design: Dreamweaver — 4.00 credit hours

- Prerequisite: MACA-1320 (formerly MCA 172, GCA 172) (3 credit hrs prior to Fall 2005) (Effective Fall 2007: course description changed; course title changed from Macromedia to Dreamweaver) Dreamweaver, the industry standard for creating web sites, is used in this web page design course. Students learn the basic theory and practical experience of web design and web site development in the areas of creating and planning a web site project; designing graphics needed for a web page and site; applying industry standard software needed to create, breakdown, compress, preview, and export HTML pages; applying industry standard software used to organize, manage, maintain, link, test, and publish a completed web site; and applying industry standard software used to add complex web code and behaviors to create interactivity on the page. (6 contact hrs) South Campus.

MACA-2020 — Design for Advertising — 4.00 credit hours

- Prerequisite: MACA-1020, and MACA-1050 or MACA-1055, and MACA-1200 or MACA-1320 (formerly MCA 202) (3 credit hrs prior to Fall 2005) Students design three-dimensional design concepts for various forms of communication using a variety of media, computer programs, materials, and techniques in black and white and color. May be taken twice for credit. (6 contact hrs) South Campus.

MACA-2110 — Photojournalism — 4.00 credit hours

- Prerequisite: MACA-1010
MACA-2110 introduces students to the practices and principles of photojournalism. Topics include techniques used in documentary, event, and public relations photography. Students must have a digital camera with manual exposure controls. (6 contact hrs) South Campus.

MACA-2150 — Advanced Digital Layout — 4.00 credit hours

- Prerequisite: MACA-1320 and MACA-1200, and MACA-1050 or MACA-1055 (formerly MCA 215, PRT 237) (3 credit hrs prior to Fall 2005) MACA-2150, a continuation of MACA-1050, uses QuarkXpress software to create composite page layouts as B&W or color images. Other page layout applications introduced include Adobe InDesign and Adobe Acrobat. Students utilize contemporary design fundamentals to create a variety of single and multi-page publications in black and white, spot and process color. Electronic files are output to a variety of B&W and color proofing devices. (6 contact hrs) South Campus.

MACA-2176 — Painted Illustration — 4.00 credit hours

- Prerequisite: MACA-1040 (formerly MACA-2175) MACA-2176 focuses on advanced problems in full color using acrylic paint to produce portfolio samples. Students use a variety of media and mixed media on different surfaces. Samples include architecture, character, vehicle, prop, and product renderings, and illustrative compositions for advertising and animation markets. Problems include setting a mood, telling a story, and being expressive. Group critiques discuss design, concept, color harmony, and composition. May be taken two times for credit with the approval of a Media & Communication Arts advisor. (6 contact hrs) South Campus.

MACA-2180 — Concept Illustration — 4.00 credit hours

- Prerequisite: MACA-1040 and MACA-1200
MACA-2180 combines traditional and digital media in today's illustration market. Focusing on "telling the story" in a multimedia environment, students learn to seamlessly integrate traditional painted or drawn illustration elements with photography, type, scanned textures, and Photoshop effect elements to create a print or web-ready image. (6 contact hrs) South Campus.

MACA-2190 — Figure Illustration 2 — 4.00 credit hours

- Prerequisite: MACA-1090 (formerly MCA 219, GCA 219) (3 credit hrs prior to Fall 2005) Advanced study of figure illustration as applied in book, magazine, advertising, and other commercial area; assigned problems using materials and techniques required by mass reproduction processes. May be taken two times for credit with the approval of a Media & Communication Arts advisor. (6 contact hrs)

MACA-2200 — Digital Editing — 4.00 credit hours

- Prerequisite: MACA-1200 (formerly MCA 220, GCA 235) (3 credit hrs prior to Fall 2005) A continuation of MACA-1200 with advanced Adobe Illustrator techniques. Introduction to multimedia applications including Adobe AfterEffects. Students create advanced portfolio projects in black-and-white and color covering a variety of rendering styles, editorial and promotional illustrations. 3D drawing applications on Macintosh computers explore wireframe and surfacing techniques. Students create a digital multimedia portfolio CD presentation. (6 contact hrs) South Campus.

MACA-2210 — Studio Photography — 4.00 credit hours

- Prerequisite: MACA-1010 and MACA-1065
MACA-2210 offers a comprehensive overview of studio photography. Equipment, techniques, and setups of a photographic studio are covered. Students must have a film or digital camera with manual exposure controls. (6 contact hrs) South Campus.

MACA-2250 — Compositing & 2D Animatics — 4.00 credit hours

- Prerequisite: MACA-1160 and MACA-1200
MACA-2250 develops a stylized sequential animatic from concept to completion, using both traditional and digital techniques in a 2D environment. Students create and design a script, storyboards, and character style sheets in concept form, which they then digitize and illustrate for the purpose of animating in 2D form on the computer. (6 contact hrs) South Campus.

MACA-2300 — Advanced Photoshop — 4.00 credit hours

- Prerequisite: MACA-1320 (formerly MCA 230, GCA 230) (3 credit hrs prior to Fall 2005) MACA-2300 explores image and art problems utilizing Adobe Photoshop advanced techniques. Students create portfolio projects ranging from single to composite images. Color theory, manipulation and correction of existing files are covered. (6 contact hrs) South Campus.

MACA-2310 — Advanced Photographic Techniques — 4.00 credit hours

- Prerequisite: MACA-1010 and MACA-1065 and MACA-2110 and MACA-2210 (formerly MACA-2260) MACA-2310 covers theory and fundamental principles of capturing the color image. Lab techniques include color balance and contrast control with a variety of print enlargement materials. Students must demonstrate their expertise by submitting scheduled assignments in portraiture, display ad, landscape/cityscape, low light, and time exposures by building a portfolio of their work. Students must have access to a digital camera with manual exposure control and an electronic flash attachment. (6 contact hrs) South Campus.

MACA-2400 — Advanced Digital Video — 4.00 credit hours

- Prerequisite: MACA-1400 (formerly MCA 240) (6 credit hrs prior to Fall 2005) Lecture and intensive hands-on experience in planning producing digital video projects. Detailed elements and advance techniques for producing and directing multi-camera studio and location programs. Post-production techniques and technologies will be emphasized. Creation of 2D and 3D digital video transitions and effects. Advance editing on NLE systems to produce multimedia video presentations to tape, CD, DVD, and the Web. (6 contact hrs) South Campus.

MACA-2510 — Introduction to 3D — 4.00 credit hours

- Prerequisite: MACA-1320 (formerly MACA-2500) MACA-2510 introduces concepts of working in 3D. Students learn the tools necessary to navigate a 3D environment and to work and build 3D models. Topics also include texturing, animation, and rendering. (6 contact hrs) South Campus.

MACA-2520 — 3D Modeling & Rendering — 4.00 credit hours

- Prerequisite: MACA-2510
MACA-2520 expands on modeling and rendering concepts taught in MACA-2510. Students gain a deeper understanding of the hows, whys, and whens of creating 3D models for animating, texturing, and rendering. (6 contact hrs) South Campus.

MACA-2530 — Advanced 3D Rendering — 4.00 credit hours

- ▶ Prerequisite: MACA-2510
MACA-2530 expands on concepts taught in MACA-2510. The major focus is on utilizing 3D-specific tools such as advanced shading networks, rendering engines, and specialized lighting for rendering 3D objects. (6 contact hrs) South Campus.

MACA-2540 — 3D Animation — 4.00 credit hours

- ▶ Prerequisite: MACA-2510
MACA-2540 introduces students to many of the 3D animation tools available. Students learn methods and practices to maintain flexibility and efficiency when animating objects. (6 contact hrs) South Campus.

MACA-2550 — 3D Dynamic Simulation — 4.00 credit hours

- ▶ Prerequisite: MACA-2510 or permission of instructor (formerly MACA-2915) MACA-2550 covers creating dynamic effects within computer animation using particles and rigid bodies to simulate collision events of both hard and soft surfaces. It also includes using particles to animate dynamic objects like sparks, rain, fire, soft surfaces, space ship fleets and more. (6 contact hrs) South Campus.

MACA-2560 — Compositing with After Effects & Nuke — 4.00 credit hours

- ▶ Prerequisite: MACA-2510 or permission of instructor (formerly MACA-2913) MACA-2560 provides experience working in 2D and 3D in a production environment. In team and class projects, students will work with green screens, video compositing, and real-world models, as well as utilize High Dynamic Range Imaging (HDRI) technology. (6 contact hrs) South Campus.

MACA-2570 — Advanced After Effects — 4.00 credit hours

- ▶ Prerequisite: MACA-2200, and MACA-2510, or permission of instructor (formerly MACA-2916) This course covers advanced expression, effects, 3D camera, (Mocha) motion tracking techniques as students build their presentation reels to strict requirements and guidelines through a series of comprehensive projects. Projects will cover a wide range of motion tracking, kinetic motion text and design, track mattes, color keys, and CGI composite animation techniques for the purpose of preparing students for positions within the integrated full service media/motion industry. (6 contact hrs)

MACA-2720 — Flash Multimedia 1 — 4.00 credit hours

- ▶ Prerequisite: MACA-1320 (formerly MCA 2730) MACA-2720 provides students knowledge in Interactive Web Animation and Information Design. Students use Flash, the industry standard for creating interactive CD and web sites. The course covers the basic theory and practical experience of Interactive Web Animation and Information Design in creating and planning an Interactive project for CD or web; designing and animating graphics needed for an interactive project; applying industry standard software needed to create, breakdown, compress, preview, and export graphics needed for an interactive project; applying industry standard software used to organize, manage, maintain, link, test, and publish completed interactive projects; and applying industry standard software to create interactivity for a project. (6 contact hrs) South Campus.

MACA-2760 — Flash Multimedia 2 — 4.00 credit hours

- ▶ Prerequisite: MACA-2720
In MACA-2760, a continuation of MACA-2730, students learn intermediate theory and gain practical experience creating interactive animation and web designs that provide a rich media experience for the user of a multimedia project. This course focuses on using the industry-standard Flash interface for animation. (6 contact hrs) South Campus.

MACA-2770 — Flash Multimedia 3 — 4.00 credit hours

- ▶ Prerequisite: MACA-2720
(formerly MACA-2911) MACA-2770 is a continuation of MACA-2760. Students continue to develop intermediate theory and gain practical experience creating ActionScript, the programming language for Flash. Students learn fundamental ActionScript principles in this industry-standard program. (6 contact hrs) South Campus.

MACA-2800 — Advanced Web Media — 4.00 credit hours

- ▶ Prerequisite: MACA-2720
MACA-2800 offers students advanced knowledge in Interactive Web Animation and Information Design. Students use Dreamweaver, Director, and Flash - the industry standards for creating interactive CDs and interactive web sites - to build an interactive project or portfolio. The course covers the theory and practical experience of Interactive Web Animation and Information Design in creating and planning an Interactive project or portfolio for CD or web; designing and animating graphics needed for an Interactive project; applying industry standard software needed to create, breakdown, compress, preview, and export graphics needed for an interactive project; and applying industry standard software used to organize, manage, maintain, link, test, and publish a completed interactive project. (6 contact hrs) South Campus.

MAST — Medical Assistant

MAST-1150 — Applied Math for Medical Assistants — 2.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010 all with grade C or better
- ▶ Corequisite: MAST-1320, MAST-1720, MAST-1730, MAST-2300
MAST-1150 is designed to provide the medical assistant with the mathematical skills necessary to calculate, prepare, and administer drugs safely and confidently in an ambulatory medical setting. (2 contact hrs) Center Campus.

MAST-1180 — Medical Diagnostic Procedures — 2.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1150, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1720, MAST-1730, HLND-1010, MAST-1800, MAST-2300, and PSYC-1010 all with grade C or better.
- ▶ Corequisite: MAST-1601, MAST-2000
This course will introduce students to basic skills and theory necessary to assist the physician in the diagnosis and treatment of the patient. Students will gain experience preparing patients for diagnostic procedures through clinical practice. (2 contact hrs) Center Campus.

MAST-1320 — Medical Assistant Laboratory Techniques — 4.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010 and PSYC-1010 all with grade C or better
- ▶ Corequisite: MAST-1150, MAST-1720, MAST-1730, MAST-2300
(replaces MAST-1300 & MAST-1310 together) MAST-1320 provides students with the knowledge and practical application of routine laboratory procedures used in the physician's office, out-patient clinics, and HMOs. Topics include urinalysis, hematology, microbiology, blood chemistry, serology, and immunology. Students practice these, as well as laboratory safety procedures, quality assurance and quality control procedures, and microscopic examinations of specimens. (4 contact hrs) Center Campus.

MAST-1360 — Medical Assistant Administration 1 — 3.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, and PSYC-1010, all with grade C or better, and an acceptable score on the math and reading placement exams.
- ▶ Corequisite: MAST-1400, MAST-1500, MAST-1800, HLND-1010
(formerly MOA 136) MAST-1360 presents the procedures of medical and office administration, such as the reception of patients, telephone techniques, filing, medical records, communications, billing procedures, and medical law and ethics. (3 contact hrs) Center Campus.

MAST-1400 — Medical Assistant Insurance Forms — 3.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, and PSYC-1010, all with grade C or better
- ▶ Corequisite: MAST-1360, MAST-1500, MAST-1800, HLND-1010
(formerly MOA 140) MAST-1400 reviews procedures used in the completion of medical insurance forms: Blue Shield, Medicare, Medicaid, CHAMPUS, CHAMPVA, FEP, Workman's Compensation, and Health Insurance Council. (3 contact hrs) Center Campus.

MAST-1500 — Basic Practice Finances for Medical Assistants — 4.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, and PSYC-1010; all with grade C or better. Previous computer knowledge is recommended.
- ▶ Corequisite: MAST-1360, MAST-1400, MAST-1800, HLND-1010
(replaces MAST-1390 & MAST-1420 together) MAST-1500 is designed to be an introduction to the basic practice finances and computer application in the medical office. (4 contact hrs) Center Campus.

MAST-1601 — Medical Assistant Phlebotomy — 3.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1150, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1720, MAST-1730, HLND-1010, MAST-1800, MAST-2300, PSYC-1010, all with grade C or better.
- ▶ Corequisite: MAST-1180, MAST-2000
(replaces MAST-1350) This course introduces students to the basic skills of phlebotomy. Students learn proper technique for physicians' offices and outpatient clinics. (3 contact hrs) Center Campus.

MAST-1720 — Body Systems 1 — 3.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010 and PSYC-1010, all with grade C or better
- ▶ Corequisite: MAST-1150, MAST-1320, MAST-1730, MAST-2300
(formerly MOA 172) MAST-1720 introduces students to basic anatomy and physiology, common pathology and pharmacology applied to the field of Medical Assisting. Topics include anatomy and physiology of the integumentary, skeletal, muscular, endocrine (central, peripheral, and autonomic nervous systems), and the special senses, as well as modalities for diagnostic testing and treatment of patients in an ambulatory setting. This course has been designed specifically for students in the Medical Assistant program. (3 contact hrs) Center Campus. Fall semester only.

MAST-1730 — Body Systems 2 — 3.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010 and PSYC-1010, all with grade C or better
- ▶ Corequisite: MAST-1150, MAST-1320, MAST-1720, MAST-2300
(formerly MOA 173) MAST-1730 introduces students to basic anatomy and physiology, common pathology, and pharmacology applied to the field of Medical Assisting. Topics include anatomy and physiology of the circulatory, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as modalities for diagnostic testing and treatment of patients in an ambulatory setting. This course has been designed specifically for students in the Medical Assistant program. (3 contact hrs) Center Campus.

MAST-1800 — Pharmacology for Health Professionals — 3.00 credit hours

- ▶ Prerequisite: Admission into the Medical Assistant program and BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, PSYC-1010, all with grade C or better
- ▶ Corequisite: MAST-1360, MAST-1400, MAST-1500, HLND-1010
MAST-1800 is designed for individuals interested in gaining a working knowledge of pharmacology. Drugs are explained through their effects on the body's anatomical structures and systems. This course covers basic concepts in pharmacology. (3 contact hrs) Center Campus.

MAST-2000 — Medical Assistant Clinical Skills — 6.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1150, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1720, MAST-1730, MAST-1800, HLND-1010, MAST-2300, and PSYC-1010, all with grade C or better
- ▶ Corequisite: MAST-1180, MAST-1601
This theory and laboratory clinical course focuses on skills needed to provide safe care for patients. It emphasizes psychomotor skills related to vital signs, asepsis, medication administration, and specialty office procedures, explores nutrition and medical diets, and addresses recognizing and responding to emergency situations. (6 contact hrs per week for 16 wks) Center Campus.

MAST-2300 — Medical Assistant Administration Practicum — 1.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, MAST-1360, MAST-1400, MAST-1500, MAST-1800, HLND-1010, and PSYC-1010, all with grade C or better
- ▶ Corequisite: MAST-1150, MAST-1320, MAST-1720, MAST-1730
The front office administration practicum is a supervised administrative front office experience in an affiliated medical office facility. It is designed to provide students with an opportunity to gain experience with skills in reception, administration of the office, insurance, and computer applications. This unpaid practicum will be at various medical offices that set the hours and shifts. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (1 contact hrs per week for 16 wks) Center Campus.

MAST-2400 — Medical Assistant Clinical Practicum — 3.00 credit hours

- ▶ Prerequisite: BCOM-2050, ENGL-1180 or ENGL-1210, HHSC-1700, PSYC-1010, MAST-1150, MAST-1180, MAST-1320, MAST-1360, MAST-1400, MAST-1500, MAST-1601, MAST-1720, MAST-1730, MAST-1800, HLND-1010, MAST-2000, and MAST-2300; all with grade C or better (formerly MAST-2800) MAST-2400 provides supervised clinical experience in an affiliated medical office facility to give students practical skills. This unpaid clinical practicum will be at various medical offices and hours and shifts are set by the facility. A minimum of 160 hours is required after the administration practicum (MAST-2300) has been completed with a passing grade. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (160 contact hours) Center Campus.

MATH — Mathematics

MATH-0050 — Fundamentals of Mathematics — 3.00 credit hours

- ▶ Prerequisite: None
(formerly MTH 005) MATH-0050 is a refresher course in the concepts and skills of arithmetic and includes integers, fractions, decimals, percent, measurement, and an introduction to algebra. (3 contact hrs)

MATH-0070 — Beginning Algebra — 3.00 credit hours

- ▶ Prerequisite: Grade C or better in MATH-0050 or an equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MTH 007) This course in beginning algebra introduces sets of real numbers. It covers addition, subtraction, multiplication, division, factoring of polynomials, integral exponents, linear equations and inequalities in one variable, and linear equations and systems of linear equations in two variables. The course also covers roots and radicals, rational expressions, and equations. (3 contact hrs)

MATH-1000 — Intermediate Algebra — 4.00 credit hours

- ▶ Prerequisite: Grade C or better in MATH-0070 or an equivalent college course, or an acceptable score on a placement exam or prerequisite exam
(formerly MTH 100) (3 credit hours prior to Fall 1990) MATH-1000 is an additional course in algebra and includes linear equations and inequalities in one and two variables; systems of linear equations in two and three variables; expressions and equations containing quadratic, rational, radical, exponential, and logarithmic terms; rational and quadratic inequalities; complex numbers; graphs of lines, parabolas, and circles; and an introduction to functions and functional notation. A scientific calculator is required. (4 contact hrs)

MATH-1100 — Everyday Mathematics — 4.00 credit hours

- Prerequisite: Grade C or better in MATH-0070 or an equivalent college course, or an acceptable score on a placement or prerequisite exam
MATH-1100 explores applications of mathematics used to solve modern problems. This course is designed for students whose degree does not require any further mathematics courses as it will not serve as a prerequisite for any other math or science course. Topics include graph theory, introduction to statistics, linear regression, probability, voting systems, fair division and apportionment, identification numbers, encryption, patterns, and finance models. (4 contact hrs)

MATH-1280 — Mathematics for Education 1 — 4.00 credit hours

- Prerequisite: Grade C or better in MATH-1000 or an equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MATH-1260) MATH-1280 is the first course in a two-course sequence for elementary education students and includes technology; sets; relations; functions; logic; mathematical systems; systems of numeration; natural numbers, integers, and rational and real numbers; prime numbers; greatest common factor; and least common multiple. (4 contact hrs)

MATH-1290 — Mathematics for Education 2 — 4.00 credit hours

- Prerequisite: Grade of C or better in MATH-1280 or equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MATH-1270) MATH-1290 is the second of a two-course sequence for elementary education students and includes non-metric geometry, metric geometry, coordinate geometry, the metric system, probability, and statistics. (4 contact hrs)

MATH-1340 — Statistics — 4.00 credit hours

- Prerequisite: Grade C or better in MATH-1000 or equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MATH-1330) MATH-1340 is for students in those fields where statistical investigations are necessary and includes description of sample data, probability, frequency distributions, sampling, confidence intervals, estimation, testing hypothesis, correlation, chi-square distributions, and nonparametric tests. (4 contact hrs)

MATH-1360 — Finite Mathematics — 4.00 credit hours

- Prerequisite: Grade C or better in MATH-1000 or equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MTH 136) MATH-1360 is the first of two mathematics courses for students majoring in the areas of business, social science, or life science and includes applications of linear, quadratic, polynomial, exponential, and logarithmic functions; systems of linear equations and inequalities; algebra of matrices and linear programming; elements of probability theory; and applications of probability. (4 contact hrs)

MATH-1370 — Calculus for Business & Social Sciences — 4.00 credit hours

- Prerequisite: Grade C or better in MATH-1360 or MATH-1410 or MATH-1460, or equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MTH 137) MATH-1370 is the second of two mathematic courses for students majoring in the areas of business, social science, or life science and includes differentiation techniques, optimization, applications of differentiation, the definite integral, finding areas using integration, and applications of integration. (4 contact hrs)

MATH-1410 — College Algebra — 4.00 credit hours

- Prerequisite: Grade C or better in MATH-1000 or an equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MATH-1420) No credit after MATH-1420, MATH-1450, or MATH-1460. MATH-1410 is one of two courses whose combined content parallels that of MATH-1460 and includes functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, and special topics. Calculators are used throughout the course. (4 contact hrs)

MATH-1430 — College Trigonometry — 3.00 credit hours

- Prerequisite: Grade C or better in MATH-1410 or an equivalent college course or an acceptable score on a placement or prerequisite exam
(formerly MTH 143) No credit after MATH-1450 or MATH-1460. This course presents algebraic and geometric review of the essentials for trigonometry, triangle trigonometry, analytic trigonometry, trigonometric identities, trigonometric functions, inverse trigonometric functions, vectors, polar coordinates, polar graphs, complex numbers in rectangular and polar form, and DeMoivre's theorem. Calculators are used throughout the course. (3 contact hrs)

MATH-1460 — Precalculus — 4.00 credit hours

- Prerequisite: Grade B or better in MATH-1000, or an equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MATH-1450) No credit after MATH-1430. This course takes an analytical approach to the elementary mathematical functions and includes equations; inequalities; conic sections; relations; function properties and graphs; polynomials; rational, exponential, logarithmic, and trigonometric functions; trigonometric identities; and the theory of equations. Calculators are used throughout the course. (4 contact hrs)

MATH-1760 — Analytic Geometry & Calculus 1 — 4.00 credit hours

- Prerequisite: Grade C or better in MATH-1430 or MATH-1460, or equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MTH 176) MATH-1760 is Part of the sequence of courses required for most engineering, science, and mathematics majors and includes limits; continuity; differentiation of algebraic and transcendental functions including trigonometric, logarithmic, and exponential base-e functions; mean-value theorem; applications of the derivative to curve sketching; optimization; related rates; conics; differentials; anti-differentiation of algebraic and trigonometric functions; the definite integral; the fundamental theorem of calculus; application of the definite integral to areas; and numerical integration. (4 contact hrs)

MATH-1770 — Analytic Geometry & Calculus 2 — 4.00 credit hours

- Prerequisite: Grade C or better in MATH-1760, or an equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MTH 177) MATH-1770 is Part of the sequence of courses required for most engineering, science, and mathematics majors and includes volumes of solids of revolution; differentiation and integration of trigonometric, inverse trigonometric, logarithmic, exponential, and hyperbolic functions; integration techniques; L'Hopital's Rule, indeterminate forms and improper integrals; sequences and series; Taylor series; Maclaurin series; and differentiation and integration of power series. (4 contact hrs)

MATH-2000 — Introduction to Linear Algebra — 3.00 credit hours

- Prerequisite: Grade C or better in MATH-1760 or equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MTH 200) This course covers systems of linear equations; the algebra of matrices; determinants and their applications; the theory of vector spaces, with emphasis on Euclidean n-space; linear transformations and their matrix representations; eigenvalues and eigenvectors; similar matrices; symmetric matrices; the spectral theorem, and applications. (3 contact hrs)

MATH-2200 — Discrete Mathematics — 4.00 credit hours

- Prerequisite: MATH-1410 with grade C or better, or equivalent college course, or an acceptable score on a placement or prerequisite exam
(formerly MTH 220) MATH-2200 is an introduction to logic, circuits, graphs, trees, matrices, algorithms, combinatorics and relations within the context of applications to computer science. (4 contact hrs)

MATH-2760 — Analytic Geometry & Calculus 3 — 4.00 credit hours

- Prerequisite: Grade C or better in MATH-1770 or an equivalent college course, or an acceptable score on a placement or prerequisite exam (formerly MTH 276) MATH-2760 is Part of a sequence of courses required for most engineering, science, and mathematics majors and includes concepts and procedures from vector algebra, vector calculus, quadric surfaces, calculus of functions of two and three variables, multiple integrals, and line integrals. (4 contact hrs)

MATH-2770 — Differential Equations — 4.00 credit hours

- Prerequisite: Grade C or better in MATH-2000 and MATH-2760 or equivalent college courses (formerly MTH 277) MATH-2770 is Part of the sequence of courses required for most engineering, science, and mathematics majors and includes first order differential equations and their applications, higher order differential equations and their applications, differential operators, the Laplace Transform, systems of linear differential equations, series solutions of differential equations, and numerical methods for solving differential equations. (4 contact hrs)

MECT — Automated Systems-Mechatronics

MECT-1211 — Mechatronics — AC/DC Electrical Systems — 1.00 credit hours

- Prerequisite: None (formerly CORE-2911) This course introduces electrical measurements, circuit analysis, inductance and capacitance, combination circuits, and transformers. Computers and computer simulation software will be used throughout the course. Troubleshooting of mechanical problems, circuits, logic, and programs will be emphasized. Industrial technical terms and safety procedures will be taught. (1.5 contact hrs) South Campus.

MECT-1212 — Mechatronics — Electrical Control Systems — 1.00 credit hours

- Prerequisite: None (formerly CORE-2912) This course introduces control logic, sequencing control, timers, and advanced systems. Computers and computer simulation software will be used throughout the course. Troubleshooting of mechanical problems, circuits, logic, and programs will be emphasized. Industrial technical terms and safety procedures will be taught. (1 contact hr) South Campus.

MECT-1213 — Mechatronics — Electronic Sensors — 1.00 credit hours

- Prerequisite: None (formerly CORE-2913) This course introduces electronic sensors and electronic sensor applications. Computers and computer simulation software will be used throughout the course. Troubleshooting of mechanical problems, circuits, logic, and programs will be emphasized. Industrial technical terms and safety procedures will be taught. (1 contact hr) South Campus.

MECT-1214 — Mechatronics — Pneumatics — 1.00 credit hours

- Prerequisite: None (formerly CORE-2914) This course introduces pneumatic power systems, basic pneumatic circuits, principles of pneumatic pressure and flow, and pneumatic speed control circuits. Computers and computer simulation software will be used throughout the course. Troubleshooting of mechanical problems, circuits, logic, and programs will be emphasized. Industrial technical terms and safety procedures will be taught. (1 contact hr) South Campus.

MECT-1215 — Mechatronics — Automated Material Handling (robots) — 1.00 credit hours

- Prerequisite: None (formerly CORE-2915) This course introduces basic robot operation, PC software programming, flexible manufacturing cells, and production control. Troubleshooting of mechanical problems, circuits, logic, and programs will be emphasized. Industrial technical terms and safety procedures will be taught. (2 contact hrs) South Campus.

MECT-1216 — Mechatronics — Mechanical Systems — 1.00 credit hours

- Prerequisite: None (formerly CORE-2916) This course includes an introduction to mechanical drive systems, power transmission systems, v-belt and chain drives, multiple shaft drives, linear motion assembly, and auxiliary control functions. Computers and computer simulation software will be used throughout the course. Troubleshooting of mechanical problems, circuits, logic, and programs will be emphasized. Industrial technical terms and safety procedures will be taught. (1.5 contact hrs) South Campus.

MECT-1310 — Pneumatics Technology Fundamentals — 3.00 credit hours

- Prerequisite: None This course teaches the fundamentals of pneumatic systems including components, graphic symbols and basic circuit configurations. Students will perform calculations for actuator area, compressor sizing, conductor sizing, gas laws, air preparation, cooling, and storage of air. Students will draw and simulate pneumatic circuits using Automation Studio then connect the real circuit on a functional pneumatic trainer. (4 contact hrs) South Campus.

MECT-1320 — Industrial Hydraulic Fundamentals — 3.00 credit hours

- Prerequisite: None This course teaches the fundamentals of hydraulic systems including components, graphic symbols and basic circuit configurations. Students will perform calculations for actuator area in square inches, extension and retraction forces in pounds, pressures in pounds per square inch, and speeds in inches per minute. Students will draw and simulate hydraulic circuits using Automation Studio then connect the real circuit on a functional hydraulic trainer. (4 contact hrs) South Campus.

MECT-1640 — Introduction to Programmable Controllers — Allen Bradley PLC — 3.00 credit hours

- Prerequisite: ELEC-1111 or ELEC-1300 or EETE-2290 or related work experience (formerly ATEE-1640) MECT-1640 provides an introduction to the Allen-Bradley SLC-500 programmable logic controller. This course will provide students with the necessary skills needed to develop and execute ladder logic projects over a communications channel, such as the DH+ and/or remote I/O links. Students will also be able to set up communications and transfer data using the RS Linx software package (3 contact hrs) South Campus.

MECT-2110 — Mechatronics Programming 1 — Siemens PLC — 3.00 credit hours

- Prerequisite: MECT-1211, MECT-1212, MECT-1213, MECT-1214, MECT-1215, and MECT-1216; or MECT-2640; or consent of program advisor
- Corequisite: MECT-2112 This course will provide the student with the essential knowledge necessary to create and edit basic programmable logic controller (PLC) programs, understand input-output (I/O) interfacing, and perform fundamental PLC troubleshooting procedures. (8 contact hrs per week for 8 wks) South Campus.

MECT-2112 — Mechatronics Programming 2 — Siemens PLC — 3.00 credit hours

- Prerequisite: MECT-1211, MECT-1212, MECT-1213, MECT-1214, MECT-1215, and MECT-1216; or consent of program advisor
- Corequisite: MECT-2110 This course is a continuation of MECT-2110 and provides the student with further knowledge required to create and edit basic programmable logic controller (PLC) programs, understand input-output (I/O) interfacing, and perform fundamental PLC troubleshooting procedures. (8 contact hrs per week for 8 wks) South Campus.

MECT-2210 — Mechatronics System Operations 1 — Siemens PLC — 3.00 credit hours

- ▶ Prerequisite: MECT-2112
- ▶ Corequisite: MECT-2212

This is the first of two capstone courses in the Automated Systems Technology (Mechatronics) program. Students will gain valuable real world experience in the control, maintenance, and simulation of automated processes, which utilize advanced manufacturing techniques. The physical system substations will include but are not limited to processes such as pick and place feeding, automatic gauging, Part indexing, Part sorting and queuing, robotic pick and place assembly, and Part torquing. The software simulation of each substation will also be presented. (8 contact hrs per week for 8 wks) South Campus.

MECT-2212 — Mechatronics System Operations 2 — Siemens PLC — 3.00 credit hours

- ▶ Prerequisite: MECT-2112
- ▶ Corequisite: MECT-2210

This second of two capstone courses in the Automated Systems Technology (Mechatronics) program furthers the investigation of the control, maintenance, and simulation of automated processes, which utilize advanced manufacturing techniques. The final course project will consist of the complete software and hardware integration of all subsystems into a fully functional automated Part assembly system. (8 contact hrs per week for 8 wks) South Campus.

MECT-2640 — Programmable Logic Controls 1- Allen Bradley PLC — 3.00 credit hours

- ▶ Prerequisite: MECT-1640 or consent of apprenticeship coordinator or related work experience (formerly ATEE-2640) MECT-2640 introduces programming techniques, hardware configuration, and theory of operation of a programmable logic controller. It will study the Allen-Bradley ControlLogix 5000 PLC. (3 contact hrs) South Campus.

MECT-2740 — Programmable Logic Controls 2 — Allen Bradley PLC — 3.00 credit hours

- ▶ Prerequisite: MECT-2640 or consent of apprenticeship coordinator or related work experience (formerly ATEE-2740) MECT-2740 introduces advanced programming concepts and hardware analysis of the industrial programmable logic controller. Systems to be studied include the Allen-Bradley PLC5. (3 contact hrs) South Campus.

MECT-2840 — Panelview Programming — 3.00 credit hours

- ▶ Prerequisite: MECT-1640 or MECT-2740 (formerly ATEE-2840) MECT-2840 provides hands-on experience in developing operator interface screens for the Panelview terminal. Topics include entering and editing instructions and creating and editing display screens on the Panelview and Panelbuilding. (3 contact hrs)

MGMT — Management

MGMT-1010 — Principles of Management — 3.00 credit hours

- ▶ Prerequisite: None (formerly MGT 101) An introductory course covering the traditional concepts of planning, organizing, staffing, leading, motivating, decision making and controlling, as well as more contemporary topics, including international management, entrepreneurship, cultural diversity, and managerial ethics. (3 contact hrs)

MGMT-1150 — Personnel & Human Resource Management — 3.00 credit hours

- ▶ Prerequisite: None
(formerly MGT 115) Human resource/personnel management issues are presented reflecting the relationship between Human Resource departments and various managerial functions. Major topics include: employment law, job analysis, staffing, training and development, performance appraisals, compensation systems, health and safety, and labor-management relations. Designed for those who presently supervise workers or plan to do so in the future, as well as present human resource staff members. (3 contact hrs)

MGMT-1180 — Human Relations — 3.00 credit hours

- ▶ Prerequisite: None
(formerly MGT 118) This course focuses on the forces influencing behavior at work and the factors that contribute to successful interpersonal relations in business. Topics include building a positive self-concept, understanding your communication and leadership style, the Jo-Hari model of self understanding, conflict management, the power of positive reinforcement, and stress management. (3 contact hrs)

MGMT-1210 — Entrepreneurship & Small Business Management — 3.00 credit hours

- ▶ Prerequisite: ACCT-1050 or ACCT-1070 or ACCT-1080
(formerly MGT 121) Fundamental aspects of entrepreneurship are explored including creativity, initial funding, organizing, marketing, financially controlling and supervising a small business. Also covered are alternative methods of starting a business and legal forms. Students will develop a business plan. (3 contact hrs)

MGMT-2000 — Business Management Software Applications — 3.00 credit hours

- ▶ Prerequisite: MGMT-1010 and ITCS-1010
(formerly MGT 200) Designed to provide students with familiarity with several software programs that are specifically used by those in the field of management. The focus will be on areas where specialized computer software is used to increase the success of managers. Software for project management, human resource management and business plan development will be explored. (3 contact hrs)

MGMT-2100 — Effective Organizational Behavior & Team Development — 3.00 credit hours

- ▶ Prerequisite: MGMT-1010
(formerly MGT 210) Topics include the management of people in the work environment; relationship of individuals and organization; “team” development and organization development techniques; and functions, roles, and relationships of various levels of management. (3 contact hrs)

MGMT-2110 — Management Decision Making & Critical Analysis — 3.00 credit hours

- ▶ Prerequisite: MGMT-1010
(formerly MGT 211) The study and application of theories and techniques of managerial decision making and problem solving via the case analysis process. Includes an examination of both the qualitative and quantitative mathematical models used in evaluating and selecting suitable alternatives. (3 contact hrs)

MGMT-2221 — Leadership Fundamentals — 3.00 credit hours

- ▶ Prerequisite: None
(replaces but does not equate to MGMT-2220) No credit after MGMT-2220. MGMT-2221 provides students with a basic foundation in the concepts and principles of leadership. It offers an examination of factors that contribute to successful leadership in an organizational setting. Topics include the identification of successful leadership characteristics, the challenges that leaders face, the impact leadership has, and how leaders build organizations and key relationships. (3 contact hrs)

MKTG — Marketing

MKTG-1010 — Principles of Marketing — 3.00 credit hours

- Prerequisite: None
(formerly MKT 101) An overview of the full range of activities involved in marketing, including determining which consumers should be targeted, evaluating key competitors, and using information technology to effectively price, promote, distribute, and design quality products and services. (3 contact hrs)

MKTG-1020 — Dynamics of Retailing — 3.00 credit hours

- Prerequisite: None
(formerly MKT 102) This course provides students with a comprehensive view of the changing world of retailing. The elements of retail management covered include inventory control, markup and pricing, merchandising, retail promotion, human resource management, store location, design and layout, legal and ethical issues, and information systems. (3 contact hrs)

MKTG-1050 — E-Marketing — 3.00 credit hours

- Prerequisite: None
This course provides students with a broad understanding of concepts related to E-Marketing and how to incorporate technology into a marketing strategy. Some of the topics covered in the class include e-mail marketing, online advertising, social media, search engine marketing, and viral marketing. MKTG-1010 is recommended prior to taking this class. (3 contact hrs)

MKTG-1210 — Small Business Marketing — 3.00 credit hours

- Prerequisite: MKTG-1010
This course introduces key marketing concepts and then focuses on how entrepreneurs and small businesses with limited budgets can apply these concepts. Topics include taking a product/service from the idea stage through product testing, promotion, pricing, and finally commercialization. Student entrepreneurs will develop a practical marketing plan that includes budget-appropriate marketing strategies built on analysis of customer needs, business opportunities, competitors, and implementation requirements. (3 contact hrs)

MKTG-2010 — Professional Selling — 3.00 credit hours

- Prerequisite: None
(formerly MKT 201) Principles and techniques used by successful salespeople. Students learn to prepare well-organized, creative, professional sales presentations. Emphasis is placed on developing a consultative relationship with the customer. Students complete each step in the sales process: prospecting, sales call planning, making effective demonstrations, tailoring sales presentations to customer needs, and servicing accounts after the sale. (3 contact hrs)

MKTG-2020 — Advertising & Promotion Management — 3.00 credit hours

- Prerequisite: None
(formerly MKT 202) The development of the promotional blend of the marketing function is examined from the manager's viewpoint. Special emphasis will be placed on using information technology to develop a target market. Topics include advertising, sales promotion and public relations. MKTG-1010 is recommended prior to taking this class. (3 contact hrs)

MKTG-2060 — Consumer Behavior — 3.00 credit hours

- Prerequisite: MKTG-1010
This class explores the process through which consumers make buying decisions. Students develop a deeper understanding of the factors influencing consumer behavior - from individual influences like personality, motivation, and perception - to broad socio-cultural considerations like economics, ethics, and multiculturalism. After exploring concepts of consumer behavior, the class focuses on practical marketing applications such as creating promotion strategies and retail environments that build loyal relationships with a defined target audience. (3 contact hrs)

MKTG-2080 — Marketing Research — 3.00 credit hours

- Prerequisite: MKTG-1010 and ITCS-1010
MKTG-2080 provides students with an understanding of how to use marketing research to make business decisions. It emphasizes how to determine what information is needed and how to use market research as a tool in decision making. (3 contact hrs)

MKTG-2150 — Global Marketing — 3.00 credit hours

- Prerequisite: MKTG-1010
(formerly MKTG-2200) This course explores the many facets of marketing in an increasingly global society. Students will build on basic marketing skills and knowledge to analyze the global environment and design a global marketing program focused on targeting consumers and identifying opportunities to develop business in an era of heightened multiculturalism. (3 contact hrs)

MUSC — Music

MUSC-1030 — Music Appreciation — 3.00 credit hours

- Prerequisite: None
(formerly MUS 103) Humanities course for non-music majors wishing to increase their knowledge and discrimination of music. Various types and styles of music are presented and discussed with regard to the elements of music and how they function in each style. Concerts and outstanding programs are related to the course. (3 contact hrs)

MUSC-1050 — Music Fundamentals — 2.00 credit hours

- Prerequisite: None
(formerly MUS 105) The study of beginning music fundamentals such as note names, clefs, scales, intervals, and chords, an analysis of simple melodic and rhythmic structures, and an introduction to the piano. Recommended for beginners and those needing preparation for Theory 1 and Ear Training 1. (2 contact hrs)

MUSC-1060 — Theory 1 — 2.00 credit hours

- Prerequisite: Vocal or instrumental experience
- Corequisite: MUSC-1160
(formerly MUS 106) Study of written harmonic, melodic, and rhythmic structures, including scale, triad construction, and inversion. Principal triads only. Includes correlated keyboard work. (2 contact hrs) Center Campus.

MUSC-1070 — Theory 2 — 2.00 credit hours

- Prerequisite: MUSC-1060
- Corequisite: MUSC-1170
(formerly MUS 107) Study of written harmonic, melodic, and rhythmic structures, including chord progressions involving triads and seventh chords, non-harmonic tones, and simple modulation. Includes correlated keyboard harmony. (2 contact hrs) Center Campus.

MUSC-1090 — Jazz Improvisation — 2.00 credit hours

- Prerequisite: Basic knowledge of scales and key signatures
(formerly MUS 109) This course covers the principles and application of jazz theory, giving beginning improvisers the necessary musical theoretical tools they will need as a performing musician. (2 contact hrs) Center Campus.

MUSC-1160 — Ear Training 1 — 2.00 credit hours

- Prerequisite: None
- Corequisite: MUSC-1060
(formerly MUS 116) Melodic dictation in one key, harmonic progressions involving principal triads, rhythmic dictation. Sight-singing diatonic exercises. (2 contact hrs) Center Campus.

MUSC-1170 — Ear Training 2 — 2.00 credit hours

- ▶ Prerequisite: MUSC-1160
- ▶ Corequisite: MUSC-1070
(formerly MUS 117) Melodic dictation involving chromatics, harmonic dictation involving all diatonic triads and seventh chords, and rhythmic dictation. Sight-singing diatonic and chromatic exercises. (2 contact hrs) Center Campus.

MUSC-1260 — Piano 1 — 2.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 126) Piano classes MUSC-1260 and 1270, each 2 contact hours, are recommended for beginners, elementary education majors, and music majors. (2 contact hrs) Center Campus.

MUSC-1270 — Piano 2 — 2.00 credit hours

- ▶ Prerequisite: MUSC-1260
(formerly MUS 127) Piano classes MUSC-1260 and 1270, each 2 contact hours, are recommended for beginners, elementary education majors, and music majors. (2 contact hrs) Center Campus.

MUSC-1300 — Concert Choir — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 130) Performance outlet at college level. Repertoire representative of sacred and secular masterpieces in choral literature. May be taken 4 times for credit. A student can earn a maximum of 8 semester hours credit for any combination of MUSC-1300 and MUSC-1351 thru MUSC-1359. (3 contact hrs) Center Campus.

MUSC-1351 — Jazz Lab Band — Alto Sax — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 135A) A jazz ensemble of limited numbers designed for the student with previous instrumental performance experience. Arrangements performed represent various styles in the jazz idiom. May be taken 4 times for credit. A student can earn a maximum of 8 semester hours credit for any combination of MUSC-1300 and MUSC-1351 thru MUSC-1359. (3 contact hrs) Center Campus.

MUSC-1352 — Jazz Lab Band — Tenor Sax — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 135B) A jazz ensemble of limited numbers designed for the student with previous instrumental performance experience. Arrangements performed represent various styles in the jazz idiom. May be taken 4 times for credit. A student can earn a maximum of 8 semester hours credit for any combination of MUSC-1300 and MUSC-1351 thru MUSC-1359. (3 contact hrs) Center Campus.

MUSC-1353 — Jazz Lab Band — Baritone Sax — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 135C) A jazz ensemble of limited numbers designed for the student with previous instrumental performance experience. Arrangements performed represent various styles in the jazz idiom. May be taken 4 times for credit. A student can earn a maximum of 8 semester hours credit for any combination of MUSC-1300 and MUSC-1351 thru MUSC-1359. (3 contact hrs) Center Campus.

MUSC-1354 — Jazz Lab Band — Trumpet — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 135D) A jazz ensemble of limited numbers designed for the student with previous instrumental performance experience. Arrangements performed represent various styles in the jazz idiom. May be taken 4 times for credit. A student can earn a maximum of 8 semester hours credit for any combination of MUSC-1300 and MUSC-1351 thru MUSC-1359. (3 contact hrs) Center Campus.

MUSC-1355 — Jazz Lab Band — Trombone — 1.00 credit hours

- Prerequisite: None
(formerly MUS 135E) A jazz ensemble of limited numbers designed for the student with previous instrumental performance experience. Arrangements performed represent various styles in the jazz idiom. May be taken 4 times for credit. A student can earn a maximum of 8 semester hours credit for any combination of MUSC-1300 and MUSC-1351 thru MUSC-1359. (3 contact hrs) Center Campus.

MUSC-1356 — Jazz Lab Band — Electric Bass — 1.00 credit hours

- Prerequisite: None
(formerly MUS 135F) A jazz ensemble of limited numbers designed for the student with previous instrumental performance experience. Arrangements performed represent various styles in the jazz idiom. May be taken 4 times for credit. A student can earn a maximum of 8 semester hours credit for any combination of MUSC-1300 and MUSC-1351 thru MUSC-1359. (3 contact hrs) Center Campus.

MUSC-1357 — Jazz Lab Band — Drums — 1.00 credit hours

- Prerequisite: None
(formerly MUS 135G) A jazz ensemble of limited numbers designed for the student with previous instrumental performance experience. Arrangements performed represent various styles in the jazz idiom. May be taken 4 times for credit. A student can earn a maximum of 8 semester hours credit for any combination of MUSC-1300 and MUSC-1351 thru MUSC-1359. (3 contact hrs) Center Campus.

MUSC-1358 — Jazz Lab Band — Guitar — 1.00 credit hours

- Prerequisite: None
(formerly MUS 135H) A jazz ensemble of limited numbers designed for the student with previous instrumental performance experience. Arrangements performed represent various styles in the jazz idiom. May be taken 4 times for credit. A student can earn a maximum of 8 semester hours credit for any combination of MUSC-1300 and MUSC-1351 thru MUSC-1359. (3 contact hrs) Center Campus.

MUSC-1359 — Jazz Lab Band — Piano — 1.00 credit hours

- Prerequisite: None
(formerly MUS 135I) A jazz ensemble of limited numbers designed for the student with previous instrumental performance experience. Arrangements performed represent various styles in the jazz idiom. May be taken 4 times for credit. A student can earn a maximum of 8 semester hours credit for any combination of MUSC-1300 and MUSC-1351 thru MUSC-1359. (3 contact hrs) Center Campus.

MUSC-1601 — Introduction to Applied Music — Voice — 1.00 credit hours

- Prerequisite: None
(formerly MUS 160C) Private instruction providing the beginning student with the means of establishing proficiency in the vocal performance area. Student will take private lessons on a beginning level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1602 — Introduction to Applied Music — Brasswinds — 1.00 credit hours

- Prerequisite: None
(formerly MUS 160D) Private instruction providing the beginning student with the means of establishing proficiency in the instrumental performance area. Student will take private lessons on a beginning level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1603 — Introduction to Applied Music — Woodwinds — 1.00 credit hours

- Prerequisite: None
(formerly MUS 160E) Private instruction providing the beginning student with the means of establishing proficiency in the instrumental performance area. Student will take private lessons on a beginning level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1604 — Introduction to Applied Music — Percussion — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 160F) Private instruction providing the beginning student with the means of establishing proficiency in the instrumental performance area. Student will take private lessons on a beginning level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1605 — Introduction to Applied Music — Strings — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 160G) Private instruction providing the beginning student with the means of establishing proficiency in the instrumental performance area. Student will take private lessons on a beginning level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1606 — Introduction to Applied Music — Guitar — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 160H) Private instruction providing the beginning student with the means of establishing proficiency in the instrumental performance area. Student will take private lessons on a beginning level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1801 — Applied Music — Piano — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 180A) Private instruction providing the student with the means to increase proficiency in the instrumental performance area. Student must be prepared to begin private lessons on an intermediate level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1802 — Applied Music — Organ — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 180B) Private instruction providing the student with the means to increase proficiency in the instrumental performance area. Student must be prepared to begin private lessons on an intermediate level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1803 — Applied Music — Voice — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 180C) Private instruction providing the student with the means to increase proficiency in the major vocal performance area. Student must be prepared to begin private lessons on an intermediate level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1804 — Applied Music — Brasswinds — 1.00 credit hours

- ▶ Prerequisite: None
(formerly MUS 180D) Private instruction providing the student with the means to increase proficiency in the instrumental performance area. Student must be prepared to begin private lessons on an intermediate level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1805 — Applied Music — Woodwinds — 1.00 credit hours

- Prerequisite: None
(formerly MUS 180E) Private instruction providing the student with the means to increase proficiency in the instrumental performance area. Student must be prepared to begin private lessons on an intermediate level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1806 — Applied Music — Percussion — 1.00 credit hours

- Prerequisite: None
(formerly MUS 180F) Private instruction providing the student with the means to increase proficiency in the instrumental performance area. Student must be prepared to begin private lessons on an intermediate level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1807 — Applied Music — Strings — 1.00 credit hours

- Prerequisite: None
(formerly MUS 180G) Private instruction providing the student with the means to increase proficiency in the instrumental performance area. Student must be prepared to begin private lessons on an intermediate level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-1808 — Applied Music — Classical Guitar — 1.00 credit hours

- Prerequisite: None
(formerly MUS 180H) Private instruction providing the student with the means to increase proficiency in the instrumental performance area. Student must be prepared to begin private lessons on an intermediate level. contact Music Department at 586.286.2045 or 2046 to make arrangements for private instructor's name. Student pays for private instruction in addition to tuition payment. May be taken 4 times for credit. (0.5 contact hr)

MUSC-2080 — Theory 3 — 2.00 credit hours

- Prerequisite: MUSC-1070
- Corequisite: MUSC-2180
(formerly MUS 208) Continuation of theory on the sophomore level. Includes instrumental writing and free voicing, and altered chords (borrowed chords, secondary dominant and leading tone chords, Neapolitan chords, and augmented sixth chords). (2 contact hrs) Center Campus.

MUSC-2180 — Ear Training 3 — 2.00 credit hours

- Prerequisite: MUSC-1170
- Corequisite: MUSC-2080
(formerly MUS 218) Further development of aural perception on the sophomore level. Study of melodic, harmonic, and rhythmic structures including altered chords, chromatic melodies, unusual meters, and divisions of the beat. (2 contact hrs) Center Campus.

MUSC-2710 — Music History & Literature to 1750 — 3.00 credit hours

- Prerequisite: None
(formerly MUS 271) History and literature of music covering Medieval, Renaissance, and Baroque periods. (3 contact hrs) Center Campus.

MUSC-2720 — Music History & Literature Since 1750 — 3.00 credit hours

- Prerequisite: None
(formerly MUS 272) History and literature of music covering Classical, Romantic, and 20th Century periods. (3 contact hrs) Center Campus.

MUSC-2801 — Advanced Applied Music — Piano — 1.00 credit hours

- ▶ Prerequisite: MUSC-1801
(formerly MUS 280A) Private instruction at an advanced level allowing the student to study and be coached in instrumental literature and prepare for concert or recital presentation. Participation in recital presentation required. May be taken 4 times for credit. (0.5 contact hr)

MUSC-2802 — Advanced Applied Music — Organ — 1.00 credit hours

- ▶ Prerequisite: MUSC-1802
(formerly MUS 280B) Private instruction at an advanced level allowing the student to study and be coached in instrumental literature and prepare for concert or recital presentation. Participation in recital presentation required. May be taken 4 times for credit. (0.5 contact hr)

MUSC-2803 — Advanced Applied Music — Voice — 1.00 credit hours

- ▶ Prerequisite: MUSC-1803
(formerly MUS 280C) Private instruction at an advanced level allowing the student to study and be coached in vocal literature and prepare for concert or recital presentation. Participation in recital presentation required. May be taken 4 times for credit. (0.5 contact hr)

MUSC-2804 — Advanced Applied Music — Brasswinds — 1.00 credit hours

- ▶ Prerequisite: MUSC-1804
(formerly MUS 280D) Private instruction at an advanced level allowing the student to study and be coached in instrumental literature and prepare for concert or recital presentation. Participation in recital presentation required. May be taken 4 times for credit. (0.5 contact hr)

MUSC-2805 — Advanced Applied Music — Woodwinds — 1.00 credit hours

- ▶ Prerequisite: MUSC-1805
(formerly MUS 280E) Private instruction at an advanced level allowing the student to study and be coached in instrumental literature and prepare for concert or recital presentation. Participation in recital presentation required. May be taken 4 times for credit. (0.5 contact hr)

MUSC-2806 — Advanced Applied Music — Percussion — 1.00 credit hours

- ▶ Prerequisite: MUSC-1806
(formerly MUS 280F) Private instruction at an advanced level allowing the student to study and be coached in instrumental literature and prepare for concert or recital presentation. Participation in recital presentation required. May be taken 4 times for credit. (0.5 contact hr)

MUSC-2807 — Advanced Applied Music — Strings — 1.00 credit hours

- ▶ Prerequisite: MUSC-1807
(formerly MUS 280G) Private instruction at an advanced level allowing the student to study and be coached in instrumental literature and prepare for concert or recital presentation. Participation in recital presentation required. May be taken 4 times for credit. (0.5 contact hr)

MUSC-2808 — Advanced Applied Music — Classical Guitar — 1.00 credit hours

- ▶ Prerequisite: MUSC-1808
(formerly MUS 280H) Private instruction at an advanced level allowing the student to study and be coached in instrumental literature and prepare for concert or recital presentation. Participation in recital presentation required. May be taken 4 times for credit. (0.5 contact hr)

NATS — Natural Science

NATS-1200 — Natural Science — 4.00 credit hours

- ▶ Prerequisite: None
(formerly NSC 120) Not to replace BIOL-1000. A general study of fundamental biological concepts. A lecture/laboratory course for the non-science major with emphasis on man's interrelationships with nature. (6 contact hrs)

NURS — Nursing

NURS-1145 — Health Assessment in Nursing — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, and ENGL-1180 or ENGL-1210, BIOL-2400 or BIOL-2730, BIOL-1400, BIOL-2710, and HHSC-1040, with grade C or better.
- ▶ Corequisite: NURS-1155, NURS-1165, NURS-1175
(replaces but does not equate to NURS-1510) This theory course presents a general overview of the health assessment process in nursing. Topics include evidence-based, patient-centered adult physical assessment techniques, critical thinking skills in identifying assessment norms and variances, lifespan and cultural/gender variations, communication techniques in collecting subjective data systematically, and components of a sexual assessment as it relates to sexuality throughout the lifespan. (3 contact hrs per week for 8 wks) Center Campus.

NURS-1155 — Fundamentals of Nursing Practice 1 — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, and ENGL-1180 or ENGL-1210, BIOL-2400 or BIOL-2730, BIOL-1400, BIOL-2710, and HHSC-1040, with grade C or better.
- ▶ Corequisite: NURS-1145, NURS-1165, NURS-1175
(replaces but does not equate to NURS-1520) This theory course focuses on developing the critical thinking skills of the nursing process. It introduces communication and interviewing techniques for data collection, examines the nursing implications for diagnostic studies while planning nursing care, and introduces infectious disease principles. In addition, the course addresses pharmacologic principles and safe medication administration. (3 contact hrs per week for 8 wks) Center Campus.

NURS-1165 — Introduction to Clinical Nursing Skills — 1.00 credit hours

- ▶ Prerequisite: Admission into the Nursing program, and ENGL-1180 or ENGL-1210, BIOL-2400 or BIOL-2730, BIOL-1400, BIOL-2710, and HHSC-1040, with grade C or better.
- ▶ Corequisite: NURS-1145, NURS-1155, NURS-1175
(replaces but does not equate to NURS-1530) This course focuses on skills needed to provide and manage safe nursing care of adult patients. The student will practice critical thinking and communication skills in order to safely care for adults of various ages. Major emphasis will be on developing psychomotor skills related to vital signs, personal hygiene, asepsis, transfer and ambulation, hydration, elimination, intake/output, ostomies, wound care, comfort measures, and administration of medications. The course also introduces documentation of procedures and nursing care, including the use of basic technology within the healthcare setting. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (6 contact hrs per week for 8 wks) Center Campus.

NURS-1175 — Health Assessment Skills in Nursing — 0.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, and ENGL-1180 or ENGL-1210, BIOL-2400 or BIOL-2730, BIOL-1400, BIOL-2710, and HHSC-1040, with grade C or better.
- ▶ Corequisite: NURS-1145, NURS-1155, NURS-1165
In this laboratory course students will identify, practice, and demonstrate physical examination and data collection skills as a framework for learning to provide and manage safe, competent care to culturally diverse adult patients. Students will utilize critical thinking and communication skills while employing evidence-based practice as it relates to assessment. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (3 contact hrs per week for 8 wks) Center Campus.

NURS-1245 — Fundamentals of Nursing Practice 2A — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-1165, NURS-1175, and NURS-1145, NURS-1155, PSYC-1010, with grade C or better.
- ▶ Corequisite: NURS-1265
(replaces but does not equate to NURS-1610) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care to patients experiencing problems related to wounds, fluid and electrolyte balance, pain, oxygenation, and diabetes mellitus. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for patients and their families. In addition, the course addresses growth and development of middle adulthood and nursing documentation in the medical record. (6 contact hrs per week for 4 wks) Center Campus.

NURS-1255 — Fundamentals of Nursing Practice 2B — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, and NURS-1245 with grade C or better.
- ▶ Corequisite: NURS-1265
(replaces but does not equate to NURS-1620) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care for patients experiencing sleep, vision, hearing, immobility, and end of life care problems. The course presents an introduction to cancer as well as the concept of spirituality as utilized in patient-centered care. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for patients and their families and addresses growth and development of older adults. (6 contact hrs per week for 4 wks) Center Campus.

NURS-1265 — Introduction to Clinical Nursing Practice — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-1165; NURS-1175; and NURS-1145, NURS-1155, PSYC-1010, with grade C or better.
- ▶ Corequisite: NURS-1245, NURS-1255
(replaces but does not equate to NURS-1630) This patient-centered clinical course helps students develop skills in providing and managing nursing care. Utilizing the nursing process, students will develop critical thinking, communication skills, application of technology, and professional responsibility while safely caring for adult patients. This clinical course will focus on documentation, medication administration, and health assessment of the hospitalized patient. New skills emphasized during this rotation include nursing care of patients requiring gastric feedings, tracheotomy care, respiratory suctioning, and respiratory adjunct oxygen implementation. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (9 contact hrs per week for 8 wks) Center Campus.

NURS-1345 — Introduction to Adult Medical-Surgical Nursing A — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-1255 with grade C or better; and NURS-1265.
- ▶ Corequisite: NURS-1365
(replaces but does not equate to NURS-1710) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care to patients experiencing surgical interventions, gastrointestinal problems, and nutritional problems. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for culturally-diverse patients and their families. (6 contact hrs per week for 4 wks) Center Campus.

NURS-1355 — Introduction to Adult Medical-Surgical Nursing B — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, and NURS-1345 with grade C or better.
- ▶ Corequisite: NURS-1365
(replaces but does not equate to NURS-1720) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care to patients experiencing problems related to acid-base balance, the respiratory system, and diabetes. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for culturally-diverse patients and their families. (6 contact hrs per week for 4 wks) Center Campus.

NURS-1365 — Introduction to Adult Medical-Surgical Nursing Clinical — 2.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-1255 with grade C or better; and NURS-1265.
- ▶ Corequisite: NURS-1345, NURS-1355
(replaces but does not equate to NURS-1730) This patient-centered clinical course helps students develop skills in providing and managing nursing care for adult patients. Utilizing the nursing process, the student will develop critical thinking, communication skills, application of technology, and professional responsibility while safely caring for adult patients with surgery, acid-base imbalance, diabetes mellitus, and respiratory and gastrointestinal problems. New skills emphasized during this rotation include NG tubes, chest tubes, IV/IVPB, and blood and blood product transfusions. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (15 contact hrs per week for 8 wks) Center Campus.

NURS-1446 — Psychiatric Mental Health Nursing A — 2.00 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-1355 with grade C or better; and NURS-1365.
- ▶ Corequisite: NURS-1475
(replaces NURS-1445) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care for patients experiencing problems related to anxiety, alterations in affect, and alterations in cognition. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for patients and their families. In addition, the course addresses growth and development of adolescent and young adult patients. (8 contact hrs per week for 4 wks) Center Campus

NURS-1456 — Psychiatric Mental Health Nursing B — 2.00 credit hours

- ▶ Prerequisite: Admission into the Nursing program, and NURS-1446 with grade C or better.
- ▶ Corequisite: NURS-1475
(replaces NURS-1455) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care for patients experiencing health problems related to chemical dependency, personality disorders, and organic mental disorders. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for patients and their families. (8contact hrs per week for 4 wks) Center Campus

NURS-1475 — Psychiatric Mental Health Nursing Clinical — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-1355 with grade C or better; and NURS-1365.
- ▶ Corequisite: NURS-1446, NURS-1456
(replaces NURS-1465) This patient-centered clinical course helps students develop skills in providing and managing nursing care of adolescent, young adult, adult, and elderly patients with mental health disorders. The student will practice critical thinking, communication skills, application of technology, and professional responsibility while safely caring for patients. Major emphasis will be on the nursing care of patients with anxiety disorders, affective disorders, and thinking disorders. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (9 contact hrs per week for 8 wks) Center Campus

NURS-2146 — Childbearing Family Nursing — 2.00 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-1456 with grade C or better, and NURS-1475.
- ▶ Corequisite: NURS-2175 (Recommended)
(replaces NURS-2145) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care for the childbearing family. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for the childbearing family. (8 contact hrs per week for 4 wks) Center Campus

NURS-2156 — Complications of Childbearing Nursing — 2.00 credit hours

- ▶ Prerequisite: Admission into the Nursing program and NURS-2146 with grade C or better.
- ▶ Corequisite: NURS-2175
(replaces NURS-2155) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care for the high-risk childbearing family and on women's health. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for the women and the childbearing family. (8 contact hrs per week for 4 wks) Center Campus

NURS-2175 — Childbearing Family Nursing Clinical — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-1456 with grade C or better, and NURS-1475.
- ▶ Corequisite: NURS-2146, NURS-2156
(replaces NURS-2165) This patient-centered clinical course helps students develop skills in providing and managing nursing care. Utilizing the nursing process, the student will develop critical thinking skills, communication skills, application of technology, and professional responsibility while safely caring for mothers and their families during the childbearing cycle. New skills emphasized during this rotation include infant assessment, evaluating electronic fetal monitoring data, and supporting new families during their childbirth experience. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (9 contact hrs per week for 8 wks) Center Campus

NURS-2245 — Intermediate Adult Medical-Surgical Nursing A — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-2156 with grade C or better, and NURS-2175.
- ▶ Corequisite: NURS-2265
(replaces but does not equate to NURS-2510) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care for patients experiencing problems related to the cardiovascular and hematologic systems. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for patients and their families. (6 contact hrs per week for 4 wks) Center Campus.

NURS-2255 — Intermediate Adult Medical-Surgical Nursing B — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program and NURS-2245 with grade C or better
- ▶ Corequisite: NURS-2265
(replaces but does not equate to NURS-2520) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care for patients experiencing urinary, renal, and endocrine system problems. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for culturally-diverse patients and their families. (6 contact hrs per week for 4 wks) Center Campus.

NURS-2265 — Intermediate Adult Medical-Surgical Nursing Clinical — 2.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-2156 with grade C or better, and NURS-2175.
- ▶ Corequisite: NURS-2245, NURS-2255
(replaces but does not equate to NURS-2530) This patient-centered clinical course gives students opportunities to develop skills in nursing care provision and management for a variety of adult patients. Using the framework of the nursing process, the student will practice critical thinking, communication skills, application of technology, and professional responsibility while safely caring for patients with life-span changes. The focus will be on the nursing care of patients with anemia, cardiovascular, peripheral vascular, endocrine, and renal problems. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (15 contact hrs per week for 8 wks) Center Campus.

NURS-2346 — Childhood Nursing A — 2.00 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-2255 with grade C or better, and NURS-2265.
- ▶ Corequisite: NURS-2375
(replaces NURS-2345) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care for children experiencing problems related to fluid and electrolyte imbalances, impaired immune responses, and alterations in the respiratory, genitourinary, integumentary, and gastrointestinal systems. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for pediatric patients and their families. In addition, the course covers growth and development of toddler, preschool, and school-aged children. (8 contact hrs per week for 4 wks) Center Campus

NURS-2356 — Childhood Nursing B — 2.00 credit hours

- ▶ Prerequisite: Admission into the Nursing program and NURS-2346 with grade C or better.
- ▶ Corequisite: NURS-2375
(replaces NURS-2355) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care for children experiencing problems with neurological dysfunction, cancer, hematological dysfunction, alterations in physical mobility, cardiovascular dysfunction, and diabetes. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for pediatric patients and their families. (8 contact hrs per week for 4 wks) Center Campus

NURS-2375 — Childhood & Family Nursing Clinical — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-2255 with grade C or better, and NURS-2265.
- ▶ Corequisite: NURS-2346, NURS-2356
(replaces NURS-2365) This patient-centered clinical course helps students develop skills in providing and managing nursing pediatric care. Using the nursing process, students will develop critical thinking, communication skills, application of technology, and professional responsibility while safely caring for pediatric patients with various problems. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (9 contact hrs per week for 8 wks) Center Campus

NURS-2445 — Transition to Professional Nursing — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-2356 and HUMN-1700 or PHIL-2100 with grade C or better, and NURS-2375.
- ▶ Corequisite: NURS-2455, NURS-2465
(replaces but does not equate to NURS-2810) This theory course focuses on the associate's degree nurse within the nursing profession. It emphasizes the role of the nurse in response to community healthcare needs and the usage of evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for groups of patients and their families. (3 contact hrs per week for 8 wks) Center Campus.

NURS-2455 — Advanced Adult Medical-Surgical Nursing — 1.50 credit hours

- ▶ Prerequisite: Admission into the Nursing program, NURS-2356 with grade C or better, NURS-2375, and HUMN-1700 or PHIL-2100 with grade C or better.
- ▶ Corequisite: NURS-2445, NURS-2465
(replaces but does not equate to NURS-2820) This theory course focuses on planning safe, culturally-diverse, patient-centered nursing care for patients experiencing oncologic, neurologic, and musculoskeletal system problems. It emphasizes using evidence-based practice and quality improvement initiatives to develop critical thinking skills in caring for patients and their families. (3 contact hrs per week for 8 wks). Center Campus.

NURS-2465 — Integration of Nursing Practice Clinical — 3.00 credit hours

- Prerequisite: Admission into the Nursing program, NURS-2356, and HUMN-1700 or PHIL-2100 with grade C or better and NURS-2375.
- Corequisite: NURS-2445, NURS-2455
(replaces but does not equate to NURS-2830) This patient-centered clinical course helps students develop skills in providing and managing nursing care of diverse adult patients. Utilizing the framework of the nursing process, students will practice critical thinking, communication skills, application of technology, and professional responsibility while safely caring for patients with lifespan changes. Major emphasis will be on nursing care management and delegation of care to a group of patients with neurological, musculoskeletal, and oncology problems. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (18 contact hrs per week for 8 wks) Center Campus.

OTAS — Occupational Therapy Assistant**OTAS-1010 — Activity Media & Task Analysis — 1.50 credit hours**

- Prerequisite: Admission into Occupational Therapy Assistant Program and HHSC-1030, PHIL-2100, ENGL-1180 or ENGL-1210, BIOL-2710 and PSYC-1010 all with grade C or better
- Corequisite: OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235
This course is designed as an introduction to activity and task analysis. Various media activities, including crafts and daily tasks are explored for beginning therapeutic application. The course introduces the Occupational Therapy Process and its application as well as the concepts of grading and adapting. Therapeutic activity selection will be emphasized with consideration of the client's performance skills, patterns, client factors, activity demands, contexts and environment and their impact to occupation based performance. (3 contact hrs) Center Campus

OTAS-1012 — Medical & Professional Language in Occupational Therapy Practice — Lecture — 2.00 credit hours

- Prerequisite: Admission into Occupational Therapy Assistant Program and grade of C or better in HHSC-1030, PHIL-2100, ENGL-1210 or ENGL-1180, BIOL-2710, PSYC-1010
- Corequisite: OTAS-1010, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235
This course provides an introduction to medical and specific occupational therapy terminology commonly used in both occupational therapy practice and in healthcare. Emphasis is placed on the knowledge of the components of medical terminology and diagnoses, psychiatric diagnoses and terminology, medical abbreviations used by occupational therapy in documentation, and the terminology of occupational therapy practice. (2 contact hrs) Center Campus.

OTAS-1110 — Mental Health Conditions — 3.00 credit hours

- Prerequisite: Admission into Occupational Therapy Assistant Program and HHSC-1030, PHIL-2100, ENGL-1180 or ENGL-1210, BIOL-2710 and PSYC-1010 all with grade C or better
- Corequisite: OTAS-1010, OTAS-1012, OTAS-1210, OTAS-1230, OTAS-1235
This course provides an overview of the most common mental health conditions and disorders referred to occupational therapy. The content will explore definition, etiology, incidence, pathology, goal setting, and basic intervention methods, as well as the interprofessional team involved in client intervention. Literature reviews for related evidence-based OT practice will be introduced. (3 contact hrs) Center Campus

OTAS-1210 — Clinical Kinesiology — 3.00 credit hours

- Prerequisite: Admission into Occupational Therapy Assistant program and HHSC-1030, PHIL-2100, ENGL-1180 or ENGL-1210, BIOL-2710 and PSYC-1010 all with grade C or better
- Corequisite: OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1230, OTAS-1235
This course studies functional human musculoskeletal movement and its interrelationship to the neuromuscular system as a foundation to the basic understanding of normal and abnormal movements. This course guides the student through the skill of analyzing occupation-based movement and the application of biomechanical principles to functional performance. (3 contact hrs) Center Campus

OTAS-1230 — Introduction to Physical Rehabilitation — Lab — 2.00 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and grade of C or better in HHSC-1030, PHIL-2100, ENGL-1210 or ENGL-1180, BIOL-2710 and PSYC-1010.
- ▶ Corequisite: OTAS-1010, OTAS-1012, OTAS-1210, OTAS-1235, OTAS-1110
This course introduces the student to basic clinical protocols and competency skills required of the occupational therapy assistant in physical dysfunction settings. The skills introduced will provide the basis for further skill development in progression of competencies that are standard to the profession of occupational therapy. The course is lab/competency based and will provide student instruction through a variety of learning experiences. (4 contact hours) Center Campus

OTAS-1235 — Human Development & Clinical Interaction Occupational Therapy Practice — 2.00 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and HHSC-1030, PHIL-2100, ENGL-1180 or ENGL-1210, BIOL-2710 and PSYC-1010 all with grade C or better
- ▶ Corequisite: OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230
This course provides the student with the knowledge required in life span development, emphasizing relationships to occupational performance, culture, social contexts, and communication as they correlate to physical, sensorimotor, cognitive, and psychosocial development. Theories and research on human development and the impact of choice, or imposed environment, including global issues impacting development and access to services, will be addressed. The impact of therapeutic communication at different stages of development, the impact of culture and generational learning styles, and teaching techniques will be addressed.(2 contact hrs) Center Campus.

OTAS-1300 — Rehabilitation Conditions & Intervention Planning — Lecture — 3.00 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230 and OTAS-1235 all with grade C or better
- ▶ Corequisite: OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420
This course provides the student with a working knowledge of the conditions in physical dysfunction commonly referred to occupational therapy. In addition to the introduction of disease etiology, incidences, and pathology, the course will emphasize the development of clinical reasoning skills for basic intervention planning and wellness promotion. The occupational therapy process will be highlighted towards restoring, remediating, or compensating the dysfunction of occupational performance and the impact to the physical and psychosocial aspects of individuals. The student will be introduced to common intervention methods used with rehabilitation conditions seen in the practice of occupational therapy. (3 contact hours) Center Campus

OTAS-1351 — Pediatric Occupational Therapy — Lecture — 2.00 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230 and OTAS-1235 all with grade C or better
- ▶ Corequisite: OTAS-1300, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420
This course introduces the role and function of occupational therapy with pediatric populations and settings, including infancy, early childhood, middle childhood, adolescence, and young adulthood. This course introduces the student to physiological, cognitive, and psychosocial function commonly referred to pediatric occupational therapy practice. Evidence-based evaluation and screening, and intervention planning for dysfunction and health promotion are emphasized throughout the occupational therapy process and within the scope of practice for the occupational therapy assistant. The significance of utilizing a family-centered approach in the intervention of pediatric populations is emphasized. (2 contact hours) Center Campus

OTAS-1361 — Pediatric Occupational Therapy — Lab — 1.50 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, OTAS-1235 all with grade C or better
 - ▶ Corequisite: OTAS-1300, OTAS-1351, OTAS-1370, OTAS-1401, OTAS-1420
- This course introduces the student to the screening, evaluation, and interventions commonly used with pediatric clients, in a variety of settings, for occupational performance and participation. The course will emphasize the skills and role of the occupational therapy assistant in medical, educational, and community models of practice. The student will explore normal development implications and applications to pediatric clients of various ages experiencing physical, cognitive, and or psychosocial dysfunction. (3 contact hours) Center Campus

OTAS-1370 — Therapeutic & Psychosocial Intervention — Lab — 2.00 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230 and OTAS-1235 all with grade C or better
 - ▶ Corequisite: OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1401, OTAS-1420
- This course is lab-based with a lecture component designed to instruct the student in various skills required for intervention with clients across the lifespan experiencing psychosocial dysfunction. The course will emphasize therapeutic use of self, response to symptoms, group dynamics, leadership styles, group and individual planning and development, and the application of practice models and frames of references. This course emphasizes the development of clinical reasoning skills. The student will be required to develop and document an evidenced-based group intervention protocol as well as a discharge plan promoting wellness. (4 contact hours) Center Campus

OTAS-1401 — Skills for Occupational Therapy Documentation I — Lab — 1.50 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230, and OTAS-1235 all with grade C or better
 - ▶ Corequisite: OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1420
- This lab-based course introduces the student to the basic concepts of documentation and note writing skills for the occupational therapy assistant. The course will explore various documentation formats, electronic medical records, AOTA guidelines, state licensure law and public health code, third-party reimbursement guidelines and regulations, confidentiality, and the Health Insurance Portability and Accountability Act (HIPAA). Client case studies will be utilized to gain knowledge in OT evaluations, intervention plans, long- and short-term goals/objectives, intervention notes, and discontinuation summaries. Problem Oriented Medical Record (POMR) will be introduced, and intervention note formats will be presented utilizing the OT practice framework. This course focuses on competency-based learning and clinical reasoning for the purpose of identifying OT problems, goals, interventions, and outcomes. (3 contact hours) Center Campus

OTAS-1420 — Professional Behaviors, Communications & Ethics — Lecture — 2.00 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230 and OTAS-1235 all with grade C or better
 - ▶ Corequisite: OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401
- This course teaches the student with the professional behaviors, communication skills, and the application of ethics required for effective interaction in the practice of occupational therapy. This course will explore the methods and application of verbal and nonverbal communication methods with clients and families, peers and interprofessional team. (2 contact hours) Center Campus

OTAS-1450 — Level 1 Fieldwork — First Placement — 1.00 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant Program and OTAS-1010, OTAS-1012, OTAS-1110, OTAS-1210, OTAS-1230 and OTAS-1235 all with grade C or better (formerly OTAS-1410) By providing supervised clinical experience, this course gives the beginning level-1 student experience in basic occupational therapy interventions and the opportunity to focus on the application of mental health/psychological and social factors under the supervision of a qualified clinician. (8 contact hrs per week for 8 wks) Center Campus

OTAS-2095 — Technology & Environmental Intervention — Lecture — 2.00 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420 and OTAS-1450 all with grade C or better
 - ▶ Corequisite: OTAS-2350, OTAS-2370, OTAS-2402, OTAS-2410, OTAS-2425, OTAS-2450
- This course provides the student with working knowledge in the use of technology and environmental intervention methods to support and enhance client performance, participation and well-being. Knowledge in issues of reimbursement for the prevailing healthcare environment will be addressed. Basic to complex technology will be accentuated, including the principles of orthotic planning, construction, and application. (2 contact hours) Center Campus

OTAS-2350 — Productive Aging — Lab Lecture — 2.00 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420 and OTAS-1450 all with grade C or better
 - ▶ Corequisite: OTAS-2095, OTAS-2370, OTAS-2402, OTAS-2410, OTAS-2425, OTAS-2450
- This lab-based course with a lecture component provides the student with application knowledge in the skills and special considerations required when working with aging clients. Physiological, cognitive, and psychosocial function will be covered with an emphasis on aging-in-place and productive aging. The role of occupational therapy in evidenced-based intervention planning and follow through with discontinuation of services is analyzed. Clinical reasoning skills will be emphasized in planning intervention for dysfunction, and health promotion and wellness, while understanding the context and intervention needs of the aging population for occupational-based performance. (4 contact hours) Center Campus

OTAS-2370 — Clinical Transition & Service Management — 2.00 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420 and OTAS-1450 all with grade C or better
 - ▶ Corequisite: OTAS-2095, OTAS-2350, OTAS-2402, OTAS-2410, OTAS-2425, OTAS-2450
- This course assists the student in the transition from student to clinical practice and comprehending the context of service delivery as a credentialed, entry-level practitioner. Role delineation and professional responsibilities will be emphasized, including service advocacy, application of management principles and ethics, aspects of service provision to individuals, organizations, and communities in the current healthcare environment, evidence-based research and implementation, communications, reimbursement issues, and principles for managing and adapting to change. (2 contact hours) Center Campus

OTAS-2402 — Skills for Occupational Therapy Documentation II — 1.50 credit hours

- ▶ Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420 and OTAS-1450 all with grade C or better
 - ▶ Corequisite: OTAS-2095, OTAS-2350, OTAS-2370, OTAS-2410, OTAS-2425, OTAS-2450
- Building upon the skills and knowledge acquired in OTAS 1401 - Skills for Occupational Therapy Documentation I, this lab-based course instructs the student in further development of competency-based application of documentation principles and skills. Adherence to AOTA guidelines, state licensure law and public health code, third-party reimbursement guidelines, regulations, appeals, confidentiality and the Health Insurance Portability and Accountability Act (HIPAA), screening and evaluation, intervention plans, long- and short-term goals/objectives, intervention notes, and discontinuation summaries will be applied to actual client intervention sessions. The emphasis of this course focuses on the application of observation, clinical reasoning, and demonstration of skilled competency in documentation. (3 contact hours) Center Campus

OTAS-2410 — Advanced Physical Rehabilitation Lecture — 3.00 credit hours

- Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420 and OTAS-1450 all with grade C or better.
- Corequisite: OTAS-2095, OTAS-2350, OTAS-2370, OTAS-2402, OTAS-2425, OTAS-2450
This course provides the student with knowledge in the theories, protocols and procedures, and application of intervention for clients referred to physical dysfunction in a variety of occupational therapy settings. The course material emphasizes evaluation and screening, intervention applications, and skill building appropriate for the occupational therapy assistant. The course will examine practice models, frame of reference application, and evidenced-based approaches for occupational performance and participation. (3 contact hours) Center Campus

OTAS-2425 — Advanced Physical Rehabilitation — Lab — 2.00 credit hours

- Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420 and OTAS-1450 all with grade C or better.
- Corequisite: OTAS-2095, OTAS-2350, OTAS-2370, OTAS-2402, OTAS-2410, OTAS-2450
This course teaches the screening and evaluation protocols and the application of various intervention techniques, methods and skills utilized with individuals referred to a physical dysfunction occupational therapy setting. Emphasis is placed on skill acquisition and demonstration of the occupational therapy process, utilizing the administration of screening and assessment tools, and a variety of interventions, appropriate for the role of the occupational therapy assistant. This course focuses on competency based learning and clinical reasoning. (4 contact hours) Center Campus

OTAS-2450 — Level 1 Fieldwork — Second Placement — 1.00 credit hours

- Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-1300, OTAS-1351, OTAS-1361, OTAS-1370, OTAS-1401, OTAS-1420 and OTAS-1450 all with grade C or better
- Corequisite: OTAS-2095, OTAS-2350, OTAS-2370, OTAS-2402
(formerly OTAS-2420) This course provides supervised clinical experience to give the beginning level 1 student an opportunity for continued practice of basic occupational therapy interventions under the supervision of a qualified clinician. (8 contact hrs per week for 8 wks) Center Campus.

OTAS-2580 — Level 2 Fieldwork — First Placement — 4.00 credit hours

- Prerequisite: Admission into Occupational Therapy Assistant program and OTAS-2095, OTAS-2350, OTAS-2370, OTAS-2402, OTAS-2410, OTAS-2425 and OTAS-2450 all with grade C or better
- Corequisite: OTAS-2590
(formerly OTAS-2480) This course provides supervised clinical experience for the advanced student who will apply therapeutic techniques and practice competent entry-level clinical applications under the supervision of a qualified clinician. (40 contact hrs per week for 8 wks) Center Campus.

OTAS-2590 — Level 2 Fieldwork — Second Placement — 4.00 credit hours

- Prerequisite: Admission into Occupational Therapy Assistant Program
- Corequisite: OTAS-2580
(formerly OTAS-2490) This course provides supervised clinical experience for the advanced student to continue to apply therapeutic techniques and practice competent entry-level clinical applications under the supervision of a qualified clinician. (40 contact hrs per week for 8 wks) Center Campus.

PHED — Physical & Health Education

PHED-1070 — Golf — 2.00 credit hours

- Prerequisite: None
(formerly PED A 107) Provides the student with knowledge concerning the golf swing, rules, course design, and etiquette. Students develop basic skills in the grip, chipping, full swing, and putting. (2 contact hrs)

PHED-1110 — Bowling — 2.00 credit hours

- Prerequisite: None (formerly PED A 111) Provides an introduction to the student (by discussion, demonstration, and use of written material) using the fundamental skills which include: starting position, approach, release, follow-through, and scoring. (2 contact hrs)

PHED-1210 — Baseball & Softball — 2.00 credit hours

- Prerequisite: None Students will develop baseball/softball skills in on-field sessions and learn the fundamentals and history of the sports. (2 contact hrs) South Campus.

PHED-1500 — Basketball — 2.00 credit hours

- Prerequisite: None (formerly PED A 150) Provides the student with knowledge of basic skills; philosophy of team play, style of play, and on-court experience practicing and using skills in game situations. (2 contact hrs) South Campus.

PHED-1510 — Self Defense — 2.00 credit hours

- Prerequisite: None (formerly PED A 151) Coeducational course designed to provide basic rules and practice for personal and home safety. (2 contact hrs)

PHED-1540 — Power Volleyball — 2.00 credit hours

- Prerequisite: None (formerly PED A 154) Provides students with fundamental tactics and strategy of winning volleyball. Emphasis on the serve, pass, set, spike, block, and individual defensive techniques. (2 contact hrs) South Campus.

PHED-1570 — Soccer — 2.00 credit hours

- Prerequisite: None (formerly PED A 157) Soccer techniques, skills and tactics are taught through game related experiences. Physical conditioning is also emphasized throughout the course. (2 contact hrs) South Campus.

PHED-1660 — Beginning Tennis — 2.00 credit hours

- Prerequisite: None (formerly PED A 166) Provides students with knowledge of scoring, rules and terms used in the game. Instruction in forehand, backhand, and serve. (2 contact hrs)

PHED-1670 — Intermediate Tennis — 2.00 credit hours

- Prerequisite: Knowledge of rules, competent forehand, backhand, and serve (formerly PED A 167) Provides the student with knowledge in basic strategy used in singles and doubles. Review forehand, backhand, and serve. Introduction of the overhand smash, lob volley, and half volley. (2 contact hrs)

PHED-2000 — Wellness — Focus Fitness — 2.00 credit hours

- Prerequisite: None (formerly PED 200) Course focus is on fitness, fitness assessment, and fitness program development. Also explores topics of nutrition, stress management, weight management and the role of activity and exercise as Part of a total wellness plan. (2 contact hrs)

PHED-2015 — Wellness — Focus Basics of Nutrition — 3.00 credit hours

- Prerequisite: None (formerly PHED-2010) This course focuses on nutrition, diet, diet analysis, and development of a diet to meet student's needs. It also explores topics of physical activity, exercise, weight management, stress management, and nutrition as Part of a total wellness plan. (3 contact hrs)

PHED-2016 — Wellness — Focus Exercise, Nutrition & Weight — 3.00 credit hours

■ Prerequisite: None

This course focuses on the physiological and psychological factors that affect weight management. It examines current theories of weight management and the role of physical activity, diet, stress, psychological, and physiological factors in attaining a healthy body composition. Using information from lectures and assignments in the course, students will design a weight management program. (3 contact hrs)

PHED-2022 — Wellness — Focus Lifestyle, Behavior, & Disease — 3.00 credit hours

■ Prerequisite: None

(formerly PHED-2020) This course focuses on lifestyle and behavior and their relationship to disease risk and prevention. Topics include wellness, mental health, communication, relationships, stress, drug and alcohol use, sexuality and sexually transmitted disease, chronic disease, nutrition, physical activity, and weight management. Students will create a personal lifestyle and behavior plan to decrease their risk of disease. (3 contact hrs)

PHED-2026 — Healthy Lifestyle Choices for Future Health Care Providers — 3.00 credit hours

■ Prerequisite: None

(formerly PHED-2025) This course introduces future health care providers to current health practices and theory. Using dimensions of wellness and the perspective of a health care practitioner as a framework, students assess their own lifestyle choices and assess how those choices may influence work situations including interactions with patients. Using knowledge gained from self-assessments and lecture, students evaluate their physical and emotional capabilities as they relate to skill sets needed for a respiratory therapist, medical assistant, surgical technologist, occupational therapy assistant, physical therapy assistant, registered nurse, nuclear medical tech, and clinical lab assistant. Health and assessment topics include body composition, cardiovascular, back injury and pain, infectious disease, chronic stress, cancer, weight management and nutrition, physical activity, and the dimensions of wellness. (3 contact hrs)

PHED-2032 — Wellness — Focus Cardio Group Fitness — 3.00 credit hours

■ Prerequisite: None

(formerly PHED-2030) The focus of this course is on exploration of a variety of cardiovascular group exercises and development of a personal cardiovascular exercise program. It also explores topics of nutrition, weight management, muscular strength and endurance, flexibility, body composition and stress management as Part of a total wellness program. (3 contact hrs)

PHED-2036 — Wellness — Focus Introduction to Kickboxing — 3.00 credit hours

■ Prerequisite: None

(formerly PHED-2035) Course focus is on exploration of various muscular strength and endurance activities in relationship to kickboxing and the basic skills of kickboxing, along with the development of personal fitness profile. Also explores topics of nutrition, weight management, fitness, physical activity, exercise, and stress management as Part of a total wellness program. (3 contact hrs)

PHED-2042 — Wellness — Strength Training & Health — 2.00 credit hours

■ Prerequisite: None

(replaces but does not equate to PHED-2040) PHED-2042 focuses on assessment and enhancement of muscle strength and endurance, and knowledge of muscle anatomy. Lectures explore wellness topics of nutrition, weight management, fitness, exercise, and stress management as Part of a total wellness program. Students design and develop an individual exercise program. (2 contact hrs)

PHED-2060 — Wellness — Pilates & Health — 3.00 credit hours

■ Prerequisite: None

(formerly PHED-2090) PHED-2060 teaches the five principles of Pilates and meditation via various floor and mat exercises in the development of a personal exercise program and health portfolio. It also explores nutrition, weight management, physical activity, stress management, and other health topics as Part of a total wellness program. (3 contact hrs)

PHED-2061 — Advanced Pilates & Meditation — 2.00 credit hours

■ Prerequisite: PHED-2060

PHED-2061 further advances the learner's application of the five principles of Pilates and meditation via various floor and mat exercises. Using the personal exercise program and health portfolio developed in PHED-2060, students assess their personal progress in Pilates exercise, meditation, nutrition, and stress management. This course does NOT fulfill the Group V requirement for degree programs. (2 contact hrs)

PHED-2070 — Wellness — Focus Prevention, Intervention, Treatment of Disease, Illness & Injury — 3.00 credit hours

■ Prerequisite: None

(formerly PED 207) Course focus is on prevention/intervention/treatment of cardiovascular disease, a variety of sudden illnesses and medical emergencies, including injuries and accidents. Additional topics will include transmission of diseases, legal aspects of emergency care, body systems, medical emergencies, drug and alcohol abuse, nutrition, stress management, weight management and exercise as they relate to wellness. American Red Cross certifications: RTE, AED, and CPR for Adult, Child and Infant awarded upon successful completion of specific components of course. Assembly of a first aid kit is required. (3 contact hrs)

PHED-2076 — Wellness: CPR/AED & First Aid for the Professional Rescuer — 3.00 credit hours

■ Prerequisite: None

(formerly PHED-2075) PHED-2076 focuses on the professional rescuer level of training. Topics include blood borne pathogens, legal aspects of emergency care, body systems, medical emergencies, first aid, nutrition, stress management, weight management, and exercise as they relate to wellness. Students who successfully complete specific components of the course will earn the American Red Cross CPR/AED for the Professional Rescuer and First Aid certification. (3 contact hrs)

PHED-2080 — Wellness — Focus Introduction to Exercise Science — 2.00 credit hours

■ Prerequisite: None

Course explores career options available to those interested in sports medicine, health sciences and physical education. Focus is on the basic concepts of exercise science including motor learning, exercise physiology, biomechanics and the six dimensions of total wellness. (2 contact hrs)

PHED-2082 — Wellness — Focus Children, Exercise & Nutrition — 2.00 credit hours

■ Prerequisite: None

The course focus is on the motor development, growth, and maturation of children as they relate to exercise with a special focus on the role of nutrition as it affects variable aspects of children's growth and development. The components of fitness specific to children as well as childhood diseases and performance enhancement will also be explored. (2 contact hrs)

PHED-2085 — Wellness — Focus Stress Management — 2.00 credit hours

■ Prerequisite: None

Course focus is on current stress management practice and theory. Topics include defining stressors, physiological and mental responses to those stressors, and the relationship of stress to individual health. Activities include practicing a variety of stress management and coping techniques, progressive muscular relaxation, cognitive strategies, meditation, visualization, guided imagery, and breathing techniques. As Part of a total wellness program, these techniques and strategies can help students more effectively manage stress associated with college and life. (2 contact hrs)

PHIL — Philosophy

PHIL-2010 — Introduction to Philosophy — 3.00 credit hours

- Prerequisite: None
(formerly PHI 201) Designed to show the relevance of philosophical problems to the student himself. The student is challenged to develop a consistent response to such problems as: free will versus determinism, the limits of knowledge, the basis of good and evil, personal conscience versus legal obligation, etc. Traditional and modern philosophers are read for discussion and critical evaluation. (3 contact hrs)

PHIL-2100 — Introduction to Ethics — 3.00 credit hours

- Prerequisite: None
(formerly PHI 210) A critical examination of the foundation of various ethical systems. Specific ethical problems are posed especially those which relate to the student's situation and possible solutions are discussed. Students will be challenged to define and defend their ethical position against alternative systems. (3 contact hrs)

PHIL-2120 — Professional Ethics — 3.00 credit hours

- Prerequisite: ENGL-1220 or ENGL-1190 or transfer equivalency
PHIL-2120 examines some of the significant moral concepts and issues that arise in professional environments. Topics include significant moral theories, professional codes of conduct, paternalism and informed consent, privacy and confidentiality, discrimination, loyalty, whistle-blowing, individual standards, and corporate social responsibility. This course is designed for students planning to pursue advanced professional degrees. It is not recommended for students in the allied health professions. (3 contact hrs)

PHIL-2200 — Introduction to Logic — 3.00 credit hours

- Prerequisite: None
(formerly PHI 220) An introduction to methods of distinguishing good reasoning from bad reasoning. Modern deductive logic is used to test the validity of arguments and to construct formal proofs. Some time may be devoted to classical Aristotelian logic and informal fallacies. (3 contact hrs)

PHIL-2400 — Philosophy of Religion — 3.00 credit hours

- Prerequisite: None
(formerly PHIL-2911, PHI 292A) This course surveys a number of philosophical perspectives in regard to the relationship between faith and reason. Topics include the various proofs for God's existence and objections to them, the origin of religious beliefs, the tenets of atheism, mysticism, the notion of evil, the concept of free will, the role of religion in society, and the relationship between faith and meaning. (3 contact hrs)

PHSA — Physical Science

PHSA-1050 — Physical Science — 4.00 credit hours

- Prerequisite: None
(formerly PHS 105A) No credit after NSC-118 or PHS-101. An overview of the physical sciences, to illustrate the underlying physical concepts of modern technological society. These concepts are investigated through selected laboratory experiences and classroom work designed to improve a general understanding of the physical sciences. (4 contact hrs)

PHYS — Physics

PHYS-1180 — College Physics 1 — 4.00 credit hours

- Prerequisite: MATH-1000 with grade C or better, or higher level math course, or math placement score (formerly PHYS-1160) The first of a two-semester sequence of algebra-based courses designed to present the fundamental principles of physics including mechanics and fluids. The student will also perform integrated experiments dealing with the physics of mechanics and fluids. (6 contact hrs)

PHYS-1190 — College Physics 2 — 4.00 credit hours

- Prerequisite: PHYS-1180 with grade C or better (formerly PHYS-1170) The second of a two-semester sequence of algebra-based courses designed to present the fundamental principles of physics including thermodynamics, electricity, waves, and optics. The student will also perform integrated experiments dealing with the physics of thermodynamics, electricity, waves, and optics. (6 contact hrs)

PHYS-2220 — Analytical Physics 1 — 5.00 credit hours

- Prerequisite: PHYS-1180 with grade C or better, or passing score on the Physics Area Placement Test and MATH-1760 with grade C or better (formerly PHYS-2190) The first in a two-semester sequence of calculus-based physics courses for physical science and engineering students covering calculus-based mechanics, thermodynamics, vibrations, and wave motion. The student will also perform integrated experiments dealing with the physics of mechanics, thermodynamics, vibrations, and wave motion. (7 contact hrs)

PHYS-2230 — Analytical Physics 2 — 5.00 credit hours

- Prerequisite: PHYS-2220 with grade C or better and MATH-1760 with grade C or better (formerly PHYS-2180) The second in a two-semester sequence of calculus-based physics courses for physical science and engineering students covering calculus-based electromagnetism, electromagnetic waves, and physical and geometrical optics. The student will also perform integrated experiments dealing with the physics of electromagnetism, electromagnetic waves, and physical and geometrical optics. (7 contact hrs)

POLS — Political Science

POLS-1000 — Introduction to American Politics — 4.00 credit hours

- Prerequisite: None (formerly PSC 100) Survey course dealing with the major aspects of American politics: its policy making process and structure at all levels of government. (4 contact hrs)

POLS-1101 — Politics in Film, Music & Art — Contemporary Political Issues — 3.00 credit hours

- Prerequisite: None (formerly PSC 110D) This course explores the power of images and sounds to deliver political messages and affect the way we think about political issues. It will focus on controversial topics presented in films and documentaries. (3 contact hrs)

POLS-1104 — The Media & American Politics — Contemporary Political Issues — 3.00 credit hours

- Prerequisite: None (formerly PSC 110K) This course examines the influence of the mass media in shaping public opinion and the policy agenda. It will examine relevant topics such as media concentration and information control and the resultant effects on U.S. democracy. (3 contact hrs)

POLS-1200 — Local & State Government — 3.00 credit hours

- Prerequisite: None
Survey course dealing with the major aspects of state and local government: the structures of government, their policymaking process, and major trends in metropolitan and suburban politics. (3 contact hrs)

POLS-1600 — International Politics — 3.00 credit hours

- Prerequisite: POLS-1000
(formerly PSC 160) Introductory study of international relations, designed to acquaint students with basic factors motivating behavior of nations as illustrated by present world affairs. (3 contact hrs)

POLS-1900 — Comparative Systems: USA — 3.00 credit hours

- Prerequisite: None
Survey course comparing the American, Canadian, and German political systems, emphasizing similarities and differences concerning the role of state and local governments in the formulation of public policy. (3 contact hrs) Center Campus.

PRDE — Product Development

PRDE-1004 — CATIA V5 for Designers — 1.00 credit hours

- Prerequisite: Approval from Program Advisor is required.
(formerly PRDE-2913) This course provides an overview of the CATIA V5 software for designers that have not used the software for a period of time. Refresher topics include the modeling, assembly, and drafting features in the latest version of CATIA. (1 contact hr) South Campus.

PRDE-1005 — NX for Designers — 1.00 credit hours

- Prerequisite: Approval from Program Advisor is required
(formerly PRDE-2914) This course provides an overview of the NX software for designers that have not used the software for a period of time. Refresher topics include the modeling, assembly, and drafting features in the latest version of NX. (1 contact hrs) South Campus.

PRDE-1010 — Design Principles — 4.00 credit hours

- Prerequisite: None
(formerly PRDE-1000) No credit after PRDE-1000. This course is intended to provide students with a strong knowledge of theoretical design. Main topics that will be discussed are descriptive geometry, orthographic projection, assembly and detail drawings. (6 contact hrs) South Campus.

PRDE-1200 — Theory of Sheet Metal Fabrication — 3.00 credit hours

- Prerequisite: None
(formerly DRTF-1210 and DRVD-1300) This course introduces the student to the theory of press working operations used in the fabrication of sheet metal components. Topics include blanking, piercing, trimming, forming, and drawing operations in addition to the types of presses, fixtures, and mechanical handling devices required. (3 contact hrs) South Campus.

PRDE-1250 — Basic Blueprint Reading — 2.00 credit hours

- Prerequisite: None
(formerly DRBP-1500) The purpose of this modularized blueprint reading course is to develop the learner's skill to read and interpret engineering drawings at the entry level. Topics include drawing terminology; title block; revision column; notes; dimensions and tolerances applications; types of lines; basic symbols; conventions; symmetry of assembly; detail working drawings; and isometric/3D, orthographic, auxiliary, and section views. (4 contact hrs) South Campus.

PRDE-1300 — Industrial & Materials Processes — 4.00 credit hours

- Prerequisite: None
(formerly DRST-1160) A study of the industrial processes and the selection of ferrous and non-ferrous materials as they apply to the design of machine details and assembly tool components. (4 contact hrs) South Campus.

PRDE-1400 — Introduction to SolidWorks & 3D Parametric Solid Modeling — 3.00 credit hours

- Prerequisite: PRDE-1010 or PRDE-1250
(formerly DRCG-1150) This course introduces the student to entry-level applications of SolidWorks solid modeling software and provides hands-on experience to build parametric models of basic parts and assemblies with dynamic operation of components. (4 contact hrs) South Campus.

PRDE-1410 — SolidWorks: Components & Assemblies — 3.00 credit hours

- Prerequisite: PRDE-1400 or DRCG-1150
Industrial drawing practices with emphasis on the development of 3D parametric modeling and orthographic projection, and basic subsystem (subassembly) and single component (detail) drawing including dimensioning, auxiliary, and section views. (4 contact hrs) South Campus.

PRDE-1450 — AutoCAD: Detailing & Assemblies — 3.00 credit hours

- Prerequisite: DRCG-1140
(formerly DRCG-1110) Industrial drawing practices with emphasis on development of 3D parametric modeling and orthographic projection and basic subsystem (subassembly) and single component (detail) drawing including dimensioning, auxiliary, and section views. (4 contact hrs) South Campus.

PRDE-1475 — Overview of Pro/ENGINEER — 4.00 credit hours

- Prerequisite: None
(replaces but does not equate to PRDE-2912) PRDE-1475 introduces applications of Pro/ENGINEER computer-aided design software as they relate to basic fundamentals from modeling to detailing. Emphasis is on the Sketcher Environment, Part Mode with Model Tree Diagnosis, Assembly, and Drafting. (6 contact hrs) South Campus.

PRDE-1520 — NX Fundamentals — 4.00 credit hours

- Prerequisite: PRDE-1010 or PRDE-1250
(replaces PRDE-1500 and PRDE-1510 together but does not equate to either course separately) This course is designed for the new user of NX. The student will be introduced to Sketcher, Part Modeling, Assemblies, and Drafting. No credit after PRDE-1510. (6 contact hrs) South Campus.

PRDE-1620 — CATIA Essentials — 4.00 credit hours

- Prerequisite: PRDE-1010 or PRDE-1250
(replaces PRDE-1600 and PRDE-1610 together but does not equate to either course separately) This course is designed for a new user of CATIA. The student will be presented the fundamentals of Part Modeling, Assemblies, and Drafting. No credit after PRDE-1610. (6 contact hrs) South Campus.

PRDE-2000 — Product Development Process — 3.00 credit hours

- Prerequisite: None
This course provides students with an overall understanding of the Product Development Process used in a variety of industries. Emphasis is on planning, specifications, development processes, and economics. (3 contact hrs) South Campus.

PRDE-2100 — Design Intent & Analysis — 3.00 credit hours

- Prerequisite: None
This course exposes students to various methods of product analysis and redesign. Topics include design for manufacturing, design for assembly and failure modes, and effects analysis. (3 contact hrs) South Campus. Winter semester only.

PRDE-2200 — Jig & Fixture Detailing & Design — 3.00 credit hours

- Prerequisite: PRDE-1410 or PRDE-1450 or PRDE-1520 or PRDE-1620 or consent of advisor; and PRDE-1300 (formerly DRTF-1170) This course covers detail and design methods and procedures for jigs and fixtures used in the metal removal industry. It includes drilling and reaming jigs and milling fixtures. (6 contact hrs) South Campus.

PRDE-2400 — Plastics Design & Manufacturing — 3.00 credit hours

- Prerequisite: None
This course introduces students to proper design principles and techniques insuring a robust and manufacturable plastic molded part. (3 contact hrs) South Campus.

PRDE-2430 — Student Capstone Project — 4.00 credit hours

- Prerequisite: PRDE-2100 (formerly PRDE-2420) The student will take this course at the conclusion of their program. This course is a multi-disciplined program that is intended to challenge the student to work independently, but will encourage integrating a team environment. The student will be provided a topic to research, design, manufacture, and assemble within the semester. (6 contact hrs) South Campus.

PRDE-2520 — NX Advanced — 4.00 credit hours

- Prerequisite: PRDE-1520 (replaces PRDE-2500 & PRDE-2510 together but does not equate to either course separately) This course is designed for the current user of NX. The student will develop parts using expressions, interPart relations, surfacing features, and develop assemblies using advanced techniques. No credit after PRDE-2510. (6 contact hrs) South Campus.

PRDE-2620 — CATIA Advanced — 4.00 credit hours

- Prerequisite: PRDE-1620 (replaces PRDE-2600 & PRDE-2610 together but does not equate to either course separately) This course is designed for current users of CATIA. The student will be presented the best practices and techniques of Generative Shape Design and Surfacing. No credit after PRDE 2610. (6 contact hrs) South Campus.

PSYC — Psychology

PSYC-1010 — Introductory Psychology — 4.00 credit hours

- Prerequisite: None (formerly PSY 101) Nature, scope, and methods of psychology as behavioral science, emphasizing development, biological foundation of behavior, sensation, and perception, learning, emotion, motivation, and personality. (4 contact hrs)

PSYC-2170 — Psychological Statistics — 4.00 credit hours

- Prerequisite: PSYC-1010 (formerly PSYC-2160) PSYC-2170 prepares students to apply descriptive and inferential statistics to psychological research. Topics include frequency distributions, measures of central tendency and variability, correlation and regression, hypothesis testing, z-scores, t-tests, analysis of variance, and chi-square. The course covers computational procedures, applications and interpretations, and the use of statistical computer software for data analysis. Recommended for prepsychology majors. (4 contact hrs)

PSYC-2210 — Child Growth & Development — 3.00 credit hours

- Prerequisite: PSYC-1010 (formerly PSY 221) Sequential development from conception to adolescence covering physical, intellectual, emotional, and social patterns of growth. (3 contact hrs)

PSYC-2220 — Psychology of Adolescence — 3.00 credit hours

- Prerequisite: PSYC-1010 (formerly PSY 222) Physical, intellectual, emotional, and social development of the adolescent, including processes in personality stabilization. (3 contact hrs)

PSYC-2300 — Psychology of Adjustment — 3.00 credit hours

- Prerequisite: PSYC-1010 (formerly PSY 230) The process of personal adjustment including ways of coping with stress and learning constructive patterns of behavior. (3 contact hrs)

PSYC-2310 — Educational Psychology — 3.00 credit hours

- Prerequisite: PSYC-1010 (formerly PSY 231) A course designed to integrate psychological principles with teaching and learning. This course is intended for psychology majors and teachers-in-training. NOTE: Education transfer students should contact their transfer destination to ensure transfer credit will be awarded for this course. Most transfer schools will accept this course for psychology elective credit. (3 contact hrs)

PSYC-2400 — Industrial-Organizational Psychology — 3.00 credit hours

- Prerequisite: PSYC-1010 (formerly PSY 240) The purpose of this course is to apply psychological research and theory to issues in the workplace to provide a basis for understanding individual and group behavior at work. Topics include the psychological underpinnings of employee selection and training, performance appraisal, motivation and job satisfaction, group processes, and power and leadership in organizations. (3 contact hrs)

PSYC-2450 — Lifespan Development — 3.00 credit hours

- Prerequisite: PSYC-1010 (Effective Fall 2009: course description changed) This course traces biological, cognitive, socioemotional, and social development across the life span, culminating in a synthesis of a multifaceted view of the individual as infant, child, adolescent, and adult. (3 contact hrs)

PSYC-2500 — Human Sexuality — 3.00 credit hours

- Prerequisite: PSYC-1010 (formerly PSY 250, PSY 150) Sexuality of the total personality concerned with the biological, psychological, and social factors that affect personality and interpersonal relationships. (3 contact hrs)

PSYC-2550 — Psychology of Gender — 3.00 credit hours

- Prerequisite: PSYC-1010 PSYC-2550 explores psychological theories and research related to gender issues. Topics include the nature and meaning of gender, gender roles, sex similarities and differences, stereotypes, and gender issues in various aspects of the human experience including interpersonal relationships, mental and physical health, sexuality, and work. (3 contact hrs)

PSYC-2600 — Social Psychology — 3.00 credit hours

- Prerequisite: PSYC-1010 (formerly PSY 260) Individual behavior within groups, including the role of conformity, mass communications, propaganda, persuasion, aggression, prejudice, and attraction. (3 contact hrs)

PSYC-2700 — Psychology of Health: Mind & Body Interaction — 3.00 credit hours

- Prerequisite: PSYC-1010 (formerly PSY 270) A detailed overview of the psychological factors influencing health, illness, and the healing process including current scientific research, the impact of stress and coping, personality and health, the psychology of complementary medicine, living with chronic conditions, and closure, death and dying. (3 contact hrs)

PSYC-2750 — Brain & Behavior — 4.00 credit hours

- Prerequisite: PSYC-1010
This course explores the neural mechanisms that underlie people's thoughts, feelings, and actions. Topics include the biological bases of sensation and perception, movement, brain plasticity, memory and amnesia, eating, sex, sleep, addiction, emotion, stress, language, and psychological disorders. (4 contact hrs)

PSYC-2760 — Neuropsychology — 4.00 credit hours

- Prerequisite: PSYC-1010
PSYC-2760 explores the relationship between the human brain and behavior and mental processes, using primarily experimental evidence from normal participants and clinical evidence from brain damaged patients. Following an overview of neuroanatomy, neurophysiology, and neuropsychological techniques, the course will examine disorders of movement, perception, memory, language, emotion, spatial ability, attention, and consciousness, with reference to deviations from normal functioning. (4 contact hrs)

PSYC-2800 — Abnormal Psychology — 3.00 credit hours

- Prerequisite: PSYC-1010
(formerly PSY 280) Abnormal Psychology is designed to give the student an in-depth understanding of mental illness and the forces that contribute to the development of psychopathology. PSYC-2800 will include the study of various psychological disorders found in our society; and it will address and examine probable causes. Current treatment strategies will also be discussed. (3 contact hrs)

PTAS — Physical Therapist Assistant

PTAS-1020 — Physical Therapy Procedures 1 — Lecture — 2.00 credit hours

- Prerequisite: Admission into the Physical Therapist Assistant program and BIOL-2710 with grade C or better.
- Corequisite: HHSC-1020, PTAS-1031
(formerly PTA 102) PTAS-1020 introduces the fundamentals of patient care as applied to physical therapy. The course teaches the principles of patient management and the formation of a strong foundation for clinical decision-making skills based on physiological principles and introduces the use of selected modalities, gait training, transfers, and body mechanics. (2 contact hrs) Center Campus. Fall Semester only.

PTAS-1031 — Physical Therapy Procedures 1 — Laboratory — 2.00 credit hours

- Prerequisite: Admission into the Physical Therapist Assistant program and BIOL-2710 with grade C or better
- Corequisite: HHSC-1020, PTAS-1070
(formerly PTAS-1030) PTAS-1031 provides the PTA student with practical experiences in the fundamentals of patient care and selected interventions. It focuses on the development of psychomotor and decision-making skills associated with the application of physical therapy skills and techniques. (4 contact hrs) Center Campus. Fall semester only.

PTAS-1070 — Joint Structure & Function — Lecture — 2.00 credit hours

- Prerequisite: Admission into the Physical Therapist Assistant program and grade C or better in BIOL-2710
- Corequisite: HHSC-1020, PTAS-1081
(formerly PTA 107) PTAS-1070 provides the academic framework for the understanding of functional anatomy as related to PTA techniques and skills. Subjects include a study of the major muscle groups, innervations, skeletal anatomy, joint structure, and the relationship of these structures to exercise and functional activity. In addition, the course presents measurement techniques of goniometry and anthropometrics. (2 contact hrs) Center Campus. Fall semester only.

PTAS-1081 — Joint Structure & Function — Laboratory — 1.50 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program and BIOL-2710 with grade C or better
- ▶ Corequisite: HHSC-1020, PTAS-1091 (formerly PTAS-1080) PTAS-1081 uses practical laboratory experiences to correlate musculoskeletal and functional anatomy to physical therapy skills. Measurement techniques are included. (2.5 contact hrs) Center Campus. Fall semester only.

PTAS-1091 — Clinical Medicine for the Physical Therapist Assistant — 2.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program and BIOL-2710 with grade C or better.
- ▶ Corequisite: HHSC-1020, PTAS-1020 (formerly PTAS-1090) PTAS-1091 introduces selected concepts of clinical medicine relevant to the provision of physical therapy by the physical therapist assistant. Topics include a discussion of etiology and medical/surgical management of pathologies commonly treated in various physical therapy settings and an overview of common diagnostic tools. (2 contact hrs) Center Campus. Fall semester only.

PTAS-1140 — Life Span Development for PTA — 2.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and HHSC-1020, PTAS-1020, PTAS-1031, PTAS-1070, PTAS-1081, and PTAS-1091 with grade C or better
- ▶ Corequisite: PTAS-1150 (formerly PTA 114) PTAS-1140 provides basic knowledge of normal human development of movement and function from birth to death. Included are the physical, social, emotional and cognitive changes that occur with normal maturation throughout the life span. The course also presents is an orientation to techniques of positive interaction skills for the physical therapist assistant student and provides observational experiences in selected settings. (2 contact hrs) Winter semester only.

PTAS-1150 — Kinesiology — Lecture — 3.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and HHSC-1020, PTAS-1020, PTAS-1031, PTAS-1070, PTAS-1081, and PTAS-1091 with grade C or better
- ▶ Corequisite: PTAS-1160 (formerly PTA 115) This course provides the study of functional human musculoskeletal movement and its interrelationship to the neuromuscular system as a foundation to the basic understanding of normal and abnormal movements. It includes analysis of basic principles and biomechanics in functional activity. (3 contact hrs) Center Campus. Winter semester only.

PTAS-1160 — Kinesiology — Laboratory — 1.50 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and HHSC-1020, PTAS-1020, PTAS-1031, PTAS-1070, PTAS-1081, and PTAS-1091 with grade C or better
- ▶ Corequisite: PTAS-1170 (formerly PTA 116) This course covers correlated laboratory practice in kinesiology, basic biomechanics and gait for the development of related physical therapist assistant techniques and skills. It includes functional movement analysis and the development of function specific activity. (3 contact hrs) Center Campus. Winter semester only.

PTAS-1170 — Physical Therapy Procedures 2 — Lecture — 2.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and HHSC-1020, PTAS-1020, PTAS-1031, PTAS-1070, PTAS-1081, and PTAS-1091 with grade C or better
- ▶ Corequisite: PTAS-1180 (formerly PTA 117) This course presents the kinesthetic and mechanical principles of therapeutic exercise and the use of mechanical traction. It emphasizes advancing patient management skills, including communication and documentation using various practical conditions as models. (2 contact hrs) Center Campus. Winter semester only.

PTAS-1180 — Physical Therapy Procedures 2 — Laboratory — 2.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and HHSC-1020, PTAS-1020, PTAS-1031, PTAS-1070, PTAS-1081, PTAS-1091 with grade C or better
- ▶ Corequisite: PTAS-1140
(formerly PTA 118) This course provides correlated practical experiences that help students acquire manual skills related to basic exercise, functional activities, and the use of appropriate equipment in a therapeutic exercise program. It includes the practical application of mechanical, cervical, and lumbar traction. (4 contact hrs) Center Campus. Winter semester only.

PTAS-2110 — Neuromuscular Physical Therapy — Lecture — 2.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180
- ▶ Corequisite: PTAS-2120
(formerly PTA 211) This course is designed to provide a theoretical basis for the utilization of various neuromuscular approaches to therapeutic exercise. Discussion includes advanced management techniques for the neurologically impaired patient. (2 contact hrs) Fall semester only.

PTAS-2120 — Neuromuscular Physical Therapy — Laboratory — 1.50 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180
- ▶ Corequisite: PTAS-2130
(formerly PTA 212) This course is designed to correlate the principles of neuromuscular approaches with clinical application of neuromuscular techniques. Emphasis will be placed on “hands on” practical experiences with more complex exercise techniques and procedures for neurological conditions. (3 contact hrs) Fall semester only.

PTAS-2130 — Musculoskeletal Physical Therapy — Lecture — 2.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180
- ▶ Corequisite: PTAS-2140
(formerly PTA 213) This course is designed to provide the theoretical foundation for the advanced management of musculoskeletal conditions. Discussion includes injury prevention and specialized approaches to physical therapy treatment of the spine and extremities. (2 contact hrs) Fall semester only.

PTAS-2140 — Musculoskeletal Physical Therapy — Laboratory — 1.50 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180
- ▶ Corequisite: PTAS-2190
(formerly PTA 214) Correlated laboratory practice designed to provide experience in the physical therapy management of musculoskeletal conditions. The focus will be on advanced therapeutic exercise and specialized techniques for musculoskeletal conditions. (3 contact hrs) Fall semester only.

PTAS-2190 — Physical Therapy Procedures 3 — Lecture — 1.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180
- ▶ Corequisite: PTAS-2200
(formerly PTA 219) This course provides the opportunity for the physical therapist assistant student to develop knowledge related to the principles of electricity and electrotherapy for selected treatment modalities. Discussion of EMG and biofeedback is included. (2 contact hrs per week for 8 wks) Center Campus. Fall semester only.

PTAS-2200 — Physical Therapy Procedures 3 — Laboratory — 1.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180
- ▶ Corequisite: PTAS-2340
(formerly PTA 220) This course will provide the physical therapist assistant student with the opportunity to apply the principles of electrotherapy to practical management in physical therapy. Procedures for advanced modality treatment for selected pathologies will be included. (3 contact hrs per week for 8 wks) Center Campus. Fall semester only.

PTAS-2340 — Clinical Internship 1 — 2.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-1140, PTAS-1150, PTAS-1160, PTAS-1170, and PTAS-1180
- ▶ Corequisite: PTAS-2350
(formerly PTA 234) Supervised clinical experience designed to provide the beginning level student with an opportunity to gain experience in various basic therapeutic practical skills and techniques. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (24 contact hrs per week for the first 8 wks) Center Campus. Fall semester only.

PTAS-2350 — Clinical Internship 2 — 2.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program and PTAS-2340
- ▶ Corequisite: PTAS-2110
(formerly PTA 235) Supervised clinical experience designed to provide the beginning level student with an opportunity for continued practice of various basic therapeutic techniques and skills. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (24 contact hrs per week for the second 8 wks) Center Campus. Fall semester only.

PTAS-2390 — Clinical Internship 3 — 4.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-2440, PTAS-2450, PTAS-2460, PTAS-2470, and PTAS-2500
(formerly PTA 239) Supervised clinical experience designed to provide the advanced student with an opportunity for continued practice of basic therapeutic techniques and practice of various complex therapeutic techniques, exercises, and procedures for competent clinical application. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (40 contact hrs per week for the second 8 wks) Center Campus. Winter semester only.

PTAS-2440 — Rehabilitation Techniques — Lecture — 2.00 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-2110, PTAS-2120, PTAS-2130, PTAS-2140, PTAS-2190, PTAS-2200, and PTAS-2350
- ▶ Corequisite: PTAS-2450
(formerly PTA 244) This course is designed to provide the theoretical foundation to the treatment of adult patients with physical disabilities. Advanced treatment techniques for the management of patients with amputations, gait abnormalities, spinal cord injuries, burns and cancer are included. (4 contact hrs per week for 8 wks) Center Campus. Winter semester only.

PTAS-2450 — Rehabilitation Techniques — Laboratory — 1.50 credit hours

- ▶ Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-2110, PTAS-2120, PTAS-2130, PTAS-2140, PTAS-2190, PTAS-2200, and PTAS-2350
- ▶ Corequisite: PTAS-2460
(formerly PTA 245) This course is designed to correlate the principles of rehabilitation procedures in the clinical setting with the lecture topics in PTAS-2440. Emphasis will be placed on practical experiences with site visits scheduled to augment didactic components of learning. (6 contact hrs per week for 8 wks) Center Campus. Winter semester only.

PTAS-2460 — Pediatrics — 2.00 credit hours

- Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-2110, PTAS-2120, PTAS-2130, PTAS-2140, PTAS-2190, PTAS-2200, and PTAS-2350
- Corequisite: PTAS-2470
(formerly PTA 246) This course is designed to provide the student with an opportunity to gain knowledge of clinical pediatric problems and management of the pediatric patient. Selected neuromuscular, orthopedic and systemic pediatric conditions are present. Application of neurophysiological and orthopedic approaches to therapeutic exercise are introduced. (4 contact hrs per week for 8 wks) Center Campus. Winter semester only.

PTAS-2470 — Cardiopulmonary Rehabilitation — 2.00 credit hours

- Prerequisite: Admission into the Physical Therapist Assistant program, and PTAS-2110, PTAS-2120, PTAS-2130, PTAS-2140, PTAS-2190, PTAS-2200, and PTAS-2350
- Corequisite: PTAS-2500
(formerly PTA 247) This course provides an overview of the physical therapy management of cardiopulmonary conditions. Also included is the role of physical therapy in fitness and wellness programming. (4 contact hrs per week for 8 wks) Center Campus. Winter semester only.

PTAS-2500 — Seminar for Physical Therapist Assistants — 2.00 credit hours

- Prerequisite: Admission into the Physical Therapist Assistant program; and PTAS-2110, PTAS-2120, PTAS-2130, PTAS-2140, PTAS-2190, PTAS-2200, with grade C or better; and PTAS-2350 with grade Pass
- Corequisite: PTAS-2440
(formerly PTA 250) (Effective Winter 2010: course description changed) This course examines special topics and contemporary issues in physical therapy for the advanced PTA student. Students are prepared for the transition to work through a number of student-led projects and presentations. (4 contact hrs per week for 8 wks) Center Campus. Winter semester only.

QUAL — Quality Systems Technology

QUAL-1011 — Quality Fundamentals — 3.00 credit hours

- Prerequisite: None
(formerly QUAL-1010) This course is an introductory class for the quality professional. The course covers instruments, scales, calipers, micrometers, miscellaneous hand tools, and gauge blocks, in inch and metric scales, as well as blueprint reading skills sufficient to apply the tools and techniques. The course covers principles, ethics, nomenclature, instruments, interpretation of engineering drawings, and measurement methods in a format that is approximately 50% hands-on, although hands-on skills alone are not enough to satisfy course requirements. We recommend math skills, but a math course is not required. This course is good preparation for an entry level job position and provides an excellent knowledge base, as Part of the Skill Specific Certificate, to prepare the student for the American Society for Quality (ASQ) Certified Mechanical Inspector test. (4 contact hrs) South Campus.

QUAL-1021 — Inspection Techniques — 3.00 credit hours

- Prerequisite: None
(formerly QUAL-1020) This course is an introductory class to the quality profession, although it assumes that the student has the QUAL-1011 knowledge base and math skills. The course covers nomenclature, instruments, documentation, calibration, and methods in a format that is approximately 50% hands-on, emphasizing developing skills and techniques with comparison measurements using height gage setups, sine plate verification, surface texture, and optical comparator technology. This course offers preparation for a midlevel job when combined with QUAL-1011. The student will have an excellent knowledge base at the completion of the Skill Specific Certificate (5 courses) for the American Society for Quality (ASQ) Certified Mechanical Inspector test. (4 contact hrs) South Campus.

QUAL-1030 — Statistical Quality Control — 4.00 credit hours

- Prerequisite: None (formerly QST 103) Basic statistical methods as applied to quality control including distribution analysis, (histograms, etc), brainstorming, process control charts (X-R, C, P, NP), measurement systems analysis (MSA), gauge repeatability and reliability (GR&R), and basic elements of probability and statistics. Statistical software is also introduced. (4 contact hrs) South Campus.

QUAL-1051 — Standards — AIAG, ANSI/ASQC, ASME, ISO — 3.00 credit hours

- Prerequisite: None (formerly QUAL-1050) This course covers the most commonly used standards, guidelines, and procedures used in automotive manufacturing. These standards are also applicable to most other manufacturing processes. FMEA is emphasized. Other topics include APQP, PPAP, MSA, MMOG, ANSI/ASQC Z1.4 Sampling Plans, ASME B89, problem solving using 8D methods, and related ISO standards requirements overview. Classwork addresses the intent and application of the standards. This course is partial preparation for several certifications issued through the American Society for Quality (ASQ). (3 contact hrs) South Campus.

QUAL-1101 — Layout Methods & CMM Introduction — 4.00 credit hours

- Prerequisite: QUAL-1011, QUAL-1021, and QUAL-1201; or consent of advisor (formerly QUAL-1100) This course prepares the student for 100% Part inspection to the blueprint specifications (as in PPAP). Students first learn the proper methods to measure parts on a surface plate using height gages, angle plates, and indicators, as well as the Optical Comparator and other necessary measurement tools. The course stresses the tool selection, sequence, and documentation to develop the independent work skills needed in a manufacturing job. The course covers Coordinate Measuring Machine (CMM) configuration, probing systems, Part coordinate system, alignments, tolerancing, editing, and report generation and interpretation. Students then will measure the same parts using a joystick Coordinate Measure Machine (CMM). This course duplicates job requirements and methods for a surface plate layout inspector or entry level CMM operator. (4 contact hrs) South Campus.

QUAL-1151 — CMM Programming — 3.00 credit hours

- Prerequisite: QUAL-1011, QUAL-1021, QUAL-1201, and QUAL-1101; or consent of advisor (formerly QUAL-1150) This course begins where QUAL-1101 ended. The student needs knowledge of CMM joystick programming. Intended for the student who needs thorough knowledge of the CMM, this course covers the necessary layout skills, programming software, and CNC commands used in measuring on the CMM. The student will write CMM Part programs and use these to measure Part dimensions. Calibration of the CMM/probe system is an integral Part of the course. (4 contact hrs) South Campus.

QUAL-1201 — Geometric Dimensioning & Tolerancing With Applications Lab — 3.00 credit hours

- Prerequisite: None (formerly QUAL-1200) Students should have competent blueprint reading skills prior to taking this course. This course interprets the ASME Y-14.5M, 1994 standard fundamentals and covers interpretation of the GD&T symbols (i.e., position, profile, flatness, etc.), feature control frames, rules, and inferences. In addition, the student will study all other symbols, including datums, datum targets, basic dimension, MMC, form, orientation, and tolerance stacks. The lab will use parts and prints from local manufacturers. Duplication of work environment, issues, and results will prepare the student to function successfully in their related work. (4 contact hrs) South Campus.

QUAL-1610 — Introduction to Lean Six Sigma — 4.00 credit hours

- Prerequisite: QUAL-1030 (replaces but does not equate to QUAL-1510) Lean Six Sigma is a strategy for a manufacturing process that will eliminate waste while using less time, money, and inventory. Students will implement the Six Sigma tools, DMAIC, in a semester project. Methodology includes Kanban (pull), Muda, Kaizen, 5S, Value Stream, and others. Students must have all of the SPC skills. This course can be used as preparation for both the ASQ Black Belt certification exam and the Quality Process Analyst certification exam. (4 contact hrs) South Campus.

QUAL-2111 — Advanced Metrology Laboratory — 3.00 credit hours

- Prerequisite: QUAL-1011 or QUAL-1010, and QUAL-1021 or QUAL-1020; or consent of advisor (formerly QUAL-2110) This course uses the Clean Room lab. The student will become familiar with and use roundness machines, surface texture instruments, hardness, color measurements, high amplification comparators, optical flats and more. Lab exercises on assigned instruments include calibration, Part setup, measurements, results interpretations, and APA documentation. This full lab class gives the student hands-on skills in advanced gauging and inspection techniques currently required in industry. (4 contact hrs) South Campus.

QUAL-2330 — Quality Costs, Process Mapping, & the Supply Chain — 3.00 credit hours

- Prerequisite: QUAL-1030 or consent of advisor
This course is an introduction to managing and controlling quality costs and discusses the current methodology used in industry for controlling those costs. Process mapping is a method of examining the course processes using systems thinking rather than just the tasks performed within the processes. This mapping improves efficiency, reduces costs, lead time, and waste. The course addresses flow charts, core process maps, SIPOC, value added/non-value added activities, gap analysis, value stream, 5S, takt time, leveling, SWOT, and JIT. This course is Part of the preparation for both the Certified Quality Engineer (CQE) and the Certified Quality Process Analyst (CQPA) from the American Society for Quality (ASQ). (3 contact hrs) South Campus.

QUAL-2400 — Project Management — 3.00 credit hours

- Prerequisite: None
(formerly QST 240) This course is an introduction to the Project Management Institute (PMI) methodology that is widely used and accepted in many corporations. The course covers all twelve areas of the Project Management Body of Knowledge (PMBOK). Applied concepts and theories are covered. In addition, Critical Path Methodology for Planning is discussed. This topic covers the visual systematic method of planning and scheduling activities, including the identification of critical activities, diagramming techniques along with time and cost considerations. (3 contact hrs) South Campus.

QUAL-2600 — Environment & Safety Standards — 3.00 credit hours

- Prerequisite: QUAL-1051
This course studies the requirements of ISO 14000, environmental management systems, ISO 9001 and 16949; and OHSAS 18001 and OSHA VVP. The scope includes implementation, maintenance, improvement, and EMS certification of a company environment. OHSAS 18001 is the Occupational Health and Safety Assessment Standard (BSI), which is a management system required by many automotive OEMs. OSHA VPP (Voluntary Protection Program) has minimum requirements to meet government regulations. This course is partial preparation for several certifications from the American Society for Quality (ASQ). (4 contact hrs) South Campus.

READ — Reading

READ-0960 — Reading Strategies — 3.00 credit hours

- Prerequisite: Placement
(formerly READ-0950) READ-0960 provides students with additional preparation and a refresher in fundamental reading skills and strategies. This course is designed to improve vocabulary, reading comprehension, and study skills for greater success in courses throughout college. (3 contact hrs)

READ-1100 — College Reading & Study Skills — 4.00 credit hours

- Prerequisite: Placement
(formerly RDG 110) This course is designed to develop college level vocabulary, comprehension skills and flexible reading rates. Study skills will prepare students for success in other college courses. (4 contact hrs)

RNEW — Renewable Energy

RNEW-1000 — Introduction to Energy — 3.00 credit hours

- Prerequisite: None
(formerly RNEW-2911) RNEW-1000 explores the physical, environmental, political, and social impact of energy. Topics include energy conservation, electric and thermal generation, materials, fossil fuels, nuclear energy, and energy alternatives. (3 contact hrs) South Campus.

RNEW-1010 — Renewable Energy Concepts — 3.00 credit hours

- Prerequisite: None
RNEW-1010 explores and investigates the sources, technologies, and applications of renewable energy. Topics include solar thermal and photovoltaic energy, wind energy, bioenergy, hydroelectricity, tidal and wave power, and geothermal resources. The focus is on technological principles, economic and environmental impact, integration, and policy. (3 contact hrs) South Campus.

RNEW-1020 — Introduction to Sustainability — 3.00 credit hours

- Prerequisite: None
RNEW-1020 provides an overview of the meaning, application, and impact that sustainable practices can have on “The Triple Bottom Line”: our economy, society, and environment. The focus will be to uncover the link that sustainable practices have on financial growth, developing a strong community, and ensuring protection of our environment. (3 contact hrs) South Campus.

RNEW-1100 — Principles of Wind Energy — 2.00 credit hours

- Prerequisite: None
(formerly RNEW-2912) RNEW-1100 analyzes and evaluates wind energy. Topics include the source of wind, history and types of wind turbines, how wind turbines work, structure of a turbine system, issues involved in establishing a system including the challenges, advantages, and available resources. (2 contact hrs) South Campus.

RNEW-1110 — Wind Energy Lab — 1.00 credit hours

- Prerequisite: None
RNEW-1110 is a laboratory course that introduces students to the practical application of wind energy. A variety of hands-on activities are included. (1 contact hrs) South Campus.

RNEW-1200 — Principles of Solar Energy — 2.00 credit hours

- Prerequisite: None
(formerly RNEW-2913) RNEW-1200 analyzes and evaluates solar energy systems. Topics include the nature of sunlight, history of solar generated electricity, types and structure of solar modules, issues involved in establishing a solar energy system including the challenges, advantages, and available resources. (2 contact hrs) South Campus.

RNEW-1210 — Solar Energy Lab — 1.00 credit hours

- Prerequisite: None
RNEW-1210 is a laboratory course that introduces students to the practical application of solar energy. A variety of hands-on activities are included. (1 contact hrs) South Campus.

RNEW-1300 — Principles of Biomass Technology — 2.00 credit hours

- Prerequisite: None
RNEW-1300 analyzes and evaluates biomass technologies and bioenergy systems. Topics include the basic concepts of biomass, land use issues, historical role of biomass, woody and non-woody biomass and secondary fuels. This course also discusses issues involved in biomass including the challenges, advantages, and available resources. (2 contact hrs) South Campus.

RNEW-1310 — Biomass Technology Lab — 1.00 credit hours

- Prerequisite: None
RNEW-1310 is a laboratory course that introduces students to the practical application of biomass energy. A variety of hands-on activities are included. (1 contact hrs) South Campus.

RNEW-1400 — Principles of Geothermal Energy — 2.00 credit hours

- Prerequisite: None
RNEW-1400 analyzes and evaluates geothermal energy systems. Topics include the basic concepts of geothermal energy, plate tectonics, heat flow, and types of geothermal systems. This course also discusses issues involved in geothermal systems including the challenges, advantages, and available resources. Hands-on activities are included. (2 contact hrs) South Campus.

RNEW-1500 — Principles of Hydrogen Fuel Cell Technology — 4.00 credit hours

- Prerequisite: None
RNEW-1500 analyzes and evaluates hydrogen fuel cell technology. Topics include hydrogen safety, storage, production, codes, regulations, and standards associated with hydrogen. This course also discusses the history of fuel cells, current applications, future use, fuel cell structures, operations, and classifications. Hands-on activities are included. (4 contact hrs) South Campus.

RNEW-1800 — Energy Management Fundamentals — 4.00 credit hours

- Prerequisite: None
RNEW-1800 explores the field of energy management. Topics include energy analysis, benchmarking, evaluation of systems, auditing basics, survey instrumentation, system performance, efficiency, and optimization. (6 contact hrs) South Campus.

RNEW-2000 — Renewable Energy Power Systems — 3.00 credit hours

- Prerequisite: RNEW-1100 and RNEW-1200
RNEW-2000 introduces students to renewable energy power systems, specifically wind and solar sources. It also presents an in-depth task analysis for practitioners who specify, install, and maintain power generation systems. Topics include safety, design, and installation of residential stand-alone, grid-tied, and hybrid systems. (4 contact hrs) South Campus.

RNEW-2200 — Photovoltaic Design & Installation — 3.00 credit hours

- Prerequisite: RNEW-2000
RNEW-2200 is a hands-on course that introduces students to the design and installation of photovoltaic systems. Topics include safety, site assessment, electrical and mechanical design, component installation, mounting configurations, system start-up, and maintenance. (4 contact hrs) South Campus.

ROBO — Robotics

ROBO-1110 — Robot Operations — 3.00 credit hours

- Prerequisite: None
(formerly ROBO-2911) ROBO-1110 is an introductory course covering the tasks and procedures needed to program and maintain an R-J or higher controller with a standard application software package. It involves both classroom instruction and hands-on training. (4 contact hrs) South Campus.

ROBO-1435 — ArcTool Robot Welding — 3.00 credit hours

- Prerequisite: ATWD-1110 and ROBO-1110
(formerly ROBO-2912) ROBO-1435 covers the tasks and procedures students need to set up and program a FANUC Robotics ArcTool software package. Using the FANUC welding robot, students program, modify, and test a welding task. (4 contact hours) South Campus.

ROBO-1440 — Material Handling Robot — 3.00 credit hours

- Prerequisite: ROBO-1110
(formerly ROBO-2913) ROBO-1440 uses FANUC Robotics palletizing simulation software. Instructional activities provide procedures for creating a PalletPRO virtual work cell and downloading data to the robot. Students use PalletPRO Turbo, a variant of PalletTool, for high speed palletizing. (4 contact hours) South Campus.

ROBO-2445 — Handling Tool Robot Features & Options — 3.00 credit hours

- ▶ Prerequisite: MECT-2640 and MECT-2840 and ROBO-1440
This course covers the more advanced features of robot operations, such as recovering from faults, creating and executing macros in both real and simulation modes, and creating, executing, and modifying robot programs. (4 contact hours) South Campus

ROBO-2450 — Vision Robot — 3.00 credit hours

- ▶ Prerequisite: ROBO-1440
ROBO-2450 introduces the FANUC Vision system. Students will set up and calibrate a vision camera and create, test, and modify a vision-style program. (4 contact hours) South Campus

RSPT — Respiratory Therapy

RSPT-1050 — Clinical Cardiorespiratory Physiologic Anatomy — 4.00 credit hours

- ▶ Prerequisite: Admission into the Respiratory Therapy program, and grade C or better in BIOL-2710, and BIOL-2730 or BIOL-2400
- ▶ Corequisite: RSPT-1060, RSPT-1081, RSPT-1090
(formerly RSP 105) RSPT-1050 teaches respiratory and cardiac anatomy and physiology with a focus on clinical application. Topics include anatomy and physiology, ventilation, pulmonary function measurements, gas diffusion, oxygen and carbon dioxide equilibration and transport, acid-base regulation and ventilation/perfusion relationships. (4 contact hrs) Center Campus. Fall semester only.

RSPT-1060 — Physiochemical Basis of Respiratory Therapy — 3.00 credit hours

- ▶ Prerequisite: Admission into the Respiratory Therapy program, and grade C or better in BIOL-2710, and BIOL-2730 or BIOL-2400
- ▶ Corequisite: RSPT-1050, RSPT-1081, RSPT-1090
(formerly RSP 106) RSPT-1060 teaches basic mathematics, physics and chemistry as it applies to respiratory therapy. Topics include measurement systems, mechanics, energy and matter, properties of fluids, gas laws, gas movement, solutions and drug calculations, elements and compounds, acid-base and fluid balance, and nutrition and metabolism. (3 contact hrs) Center Campus. Fall semester only.

RSPT-1081 — Respiratory Therapy Procedures 1 — Lecture — 3.00 credit hours

- ▶ Prerequisite: Admission into the Respiratory Therapy program and grade C or better in BIOL-2710 and BIOL-2730 or BIOL-2400
- ▶ Corequisite: RSPT-1050, RSPT-1060, RSPT-1090
(formerly RSPT-1080) RSPT-1081 introduces the patient care process. Topics include patient assessment, cardiopulmonary diagnostics and monitoring techniques, infection control and safety, protocols and documentation used in the practice of respiratory therapy. (3 contact hrs) Center Campus. Fall semester only.

RSPT-1090 — Respiratory Therapy Procedures 1 — Laboratory — 2.00 credit hours

- ▶ Prerequisite: Admission into the Respiratory Therapy program, and grade C or better in BIOL-2710, and BIOL-2730 or BIOL-2400
- ▶ Corequisite: RSPT-1050, RSPT-1060, RSPT-1081
RSPT-1090 students develop psychomotor skills in respiratory therapy procedures. Topics include patient assessment, diagnostic testing and monitoring, infection control, and documentation. (3 contact hrs) Center Campus. Fall Semester only.

RSPT-1111 — Respiratory Therapy Procedures 2 — Lecture — 3.00 credit hours

- Prerequisite: Admission into the Respiratory Therapy program, and grade C or better in RSPT-1050, RSPT-1060, RSPT-1081, and RSPT-1090
- Corequisite: RSPT-1120, RSPT-1140, RSPT-1200, RSPT-1210
(replaces but does not equate to RSPT-1110) RSPT-1111 is an orientation to the procedures, techniques, and equipment used in the practice of respiratory therapy. Topics covered include use of protocols, oxygen therapy, airway dilation therapy, volume expansion therapy, pulmonary hygiene therapy, airway management, resuscitation and documentation. (3 contact hrs) Center Campus. Winter semester only.

RSPT-1120 — Respiratory Therapy Procedures 2 — Laboratory — 4.00 credit hours

- Prerequisite: Admission into the Respiratory Therapy program, and grade C or better in RSPT-1050, RSPT-1060, RSPT-1081, and RSPT-1090
- Corequisite: RSPT-1111, RSPT-1140, RSPT-1200, RSPT-1210
(formerly RSP 112) RSPT-1120 students will develop psychomotor skills in respiratory therapy procedures. Topics covered include use of protocols, oxygen therapy, airway dilation therapy, pulmonary hygiene therapy, volume expansion therapy, airway management, resuscitation, and documentation. (6 contact hrs) Center Campus. Winter semester only.

RSPT-1140 — Cardiopulmonary Pathology — 3.00 credit hours

- Prerequisite: Admission into the Respiratory Therapy program, and grade C or better in RSPT-1050, RSPT-1060, RSPT-1081, and RSPT-1090
- Corequisite: RSPT-1111, RSPT-1120, RSPT-1200, RSPT-1210
(formerly RSP 114) RSPT-1140 is a detailed study of disease affecting the cardiovascular and pulmonary systems. The student will study the assessment process and the role of the Respiratory Care Practitioner in developing and implementing therapist-driven protocols. The anatomic alterations, etiology, clinical manifestations, and patient care plan will be reviewed for each disease process. (3 contact hrs) Center Campus. Winter semester only.

RSPT-1200 — Cardiopulmonary Pharmacology — 1.50 credit hours

- Prerequisite: Admission into the Respiratory Therapy program; and grade C or better in RSPT-1050, RSPT-1060, RSPT-1081, and RSPT-1090
- Corequisite: RSPT-1111, RSPT-1120, RSPT-1140
(formerly RSP 120) RSPT-1200 is designed to teach aerosol delivery of respiratory medications that are specifically delivered by respiratory care practitioners. An in-depth study of the autonomic nervous system will be covered to explain mechanism of drug actions. The student will learn indications, modes of delivery, dosages, and adverse reactions of respiratory medications. The student also will be introduced to critical care pharmacology. (3 contact hrs per week for the first 8 wks) Center Campus. Winter semester only.

RSPT-1210 — Pediatric/Neonatal Respiratory Care — 1.50 credit hours

- Prerequisite: Admission into the Respiratory Therapy program, and grade C or better in RSPT-1200
- Corequisite: RSPT-1111, RSPT-1120, RSPT-1140
(formerly RSP 121) RSPT-1210 introduces students to neonatal and pediatric respiratory care. The course covers fetal lung development, anatomy and physiology, neonatal development, pathology, CPR, acid-base monitoring, and introduction to mechanical ventilation of the newborn. (3 contact hrs per week for the second 8 wks) Center Campus. Winter Semester only.

RSPT-1260 — Clinical Internship 1 — 4.00 credit hours

- Prerequisite: Admission into the Respiratory Therapy program and RSPT-1111 and RSPT-1120 and RSPT-1140 and RSPT-1200 and RSPT-1210, with grade C or better
(formerly RSP 126) This course introduces the student to clinical practice by providing 32 hours/week of clinical training in a hospital setting. Students perform basic respiratory therapy procedures learned in the procedures laboratory (RSPT-1090 and RSPT-1120). The laboratory portion of the course includes an eight-hour/week workshop held at the college. The lab is designed to introduce the student to the concepts and psychomotor skills necessary to care for patients on mechanical ventilators. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (40 contact hrs per week for 8 wks) Center Campus. Spring/Summer semester only.

RSPT-2250 — Clinical Internship 2 — 2.00 credit hours

- ▶ Prerequisite: Admission into the Respiratory Therapy program and RSPT-1260
- ▶ Corequisite: RSPT-2331, RSPT-2341, RSPT-2350 (formerly RSP 225) This course requires respiratory therapy students to complete 160 hours of clinical training experience. Objectives focus on pulmonary function testing, critical care pharmacology, arterial blood gases, and an introduction to mechanical ventilation. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (20 contact hrs per week for the first 8 wks) Center Campus. Fall semester only.

RSPT-2260 — Clinical Internship 3 — 2.00 credit hours

- ▶ Prerequisite: Admission into the Respiratory Therapy program and RSPT-2250
- ▶ Corequisite: RSPT-2331, RSPT-2341, RSPT-2350 (formerly RSP 226) This course requires respiratory therapy students to complete 160 additional hours of clinical training experience in an affiliated hospital. Objectives focus on pulmonary function testing, critical care pharmacology, arterial blood gases, and mechanical ventilation. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (20 contact hrs per week for the second 8 wks) Center Campus. Fall semester only.

RSPT-2331 — Mechanical Ventilation — Lecture — 3.00 credit hours

- ▶ Prerequisite: Admission into the Respiratory Therapy program and RSPT-1260
- ▶ Corequisite: RSPT-2250, RSPT-2341, RSPT-2350 (formerly RSPT-2330) RSPT-2331 course content reviews cardiopulmonary physiology and the effects of mechanical ventilation on the infant, pediatric, and adult patient. Topics covered include the different types of mechanical ventilators and their features, indications, initiation, assessment, maintenance, monitoring, adjustments, complications, protocols, discontinuation, and documentation. (3 contact hrs) Center Campus. Fall semester only.

RSPT-2341 — Mechanical Ventilation — Laboratory — 2.00 credit hours

- ▶ Prerequisite: Admission into the Respiratory Therapy program and RSPT-1260
- ▶ Corequisite: RSPT-2250, RSPT-2331, RSPT-2350 (formerly RSPT-2340) This course develops cognitive and psychomotor skills necessary for initiating, assessing, maintaining, monitoring, adjusting, discontinuing, documenting, and applying protocols to mechanical ventilation on infant, pediatric, and adult patients. The course will evaluate the capabilities and limitations of the most commonly used mechanical ventilators. (3 contact hrs) Center Campus. Fall semester only.

RSPT-2350 — Acid-Base & Electrolyte Balance & Advanced Diagnostics — 3.00 credit hours

- ▶ Prerequisite: Admission into the Respiratory Therapy program and RSPT-1260
- ▶ Corequisite: RSPT-2250, RSPT-2331, RSPT-2341 (formerly RSP 235) This theory course teaches students how to draw, analyze, interpret, and evaluate arterial/venous blood gas and electrolyte data, and make appropriate recommendations for treatment. Students also will learn how to use data obtained from non-invasive monitoring to aid in the diagnosis and treatment of pulmonary disease. (3 contact hrs) Center Campus. Fall semester only.

RSPT-2360 — Clinical Internship 4 — 2.00 credit hours

- ▶ Prerequisite: Admission into the Respiratory Therapy program; and RSPT-2260; and grade C or better in RSPT-2331, RSPT-2341, and RSPT-2350
- ▶ Corequisite: RSPT-2420, RSPT-2431 (formerly RSP 236) RSPT-2360 requires respiratory therapy students to complete 160 additional hours of clinical training in an affiliated hospital. Objectives focus on acid-base balance, mechanical ventilation, pulmonary function testing, electrocardiography, and hemodynamic monitoring. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (20 contact hrs per week for the first 8 wks) Center Campus. Winter Semester only.

RSPT-2370 — Clinical Internship 5 — 2.00 credit hours

- Prerequisite: Admission into the Respiratory Therapy program and RSPT-2360
- Corequisite: RSPT-2420, RSPT-2431
(formerly RSP 237) RSPT-2370 provides additional clinical experience for the respiratory therapy student. The student must complete 160 hours of clinical training in an area hospital. Objectives focus on pulmonary function testing, acid-base balance, mechanical ventilation, electrocardiology, and hemodynamic monitoring. This course is graded on a pass/fail basis. Students are required to pass this course to progress in the program. (20 contact hrs per week for the second 8 wks) Center Campus. Winter semester only.

RSPT-2420 — Advanced Concepts in Respiratory Care — 3.00 credit hours

- Prerequisite: Admission into the Respiratory Therapy program; and RSPT-2260; and grade C or better in RSPT-2331, RSPT-2341, and RSPT-2350.
- Corequisite: RSPT-2360, RSPT-2370, RSPT-2431
(formerly RSP 242) This forum for discussion of new and advanced applications in clinical practice covers pulmonary function testing, EKGs, myocardial infarction, chest tube drainage systems, and hemodynamic monitoring. Each student gives an oral presentation on a topic of interest in Respiratory Care. (3 contact hrs) Center Campus. Winter semester only.

RSPT-2431 — Certification & Registry Review — 3.00 credit hours

- Prerequisite: Admission into the Respiratory Therapy program; RSPT-2260; and grade C or better in RSPT-2331, RSPT-2341, and RSPT-2350
- Corequisite: RSPT-2360, RSPT-2370, RSPT-2420
(formerly RSPT 2430) RSPT-2431 is a comprehensive review to prepare students for the NBRC Certification and Registry Examinations. Students will become familiar with clinical simulation testing through use of computer simulations and latent imaging. NBRC Self-Assessment Examinations will be administered during this course. A program exit exam will be given at the end of the semester. (3 contact hrs) Center Campus. Winter semester only.

SECR — Security Administration**SECR-1000 — Introduction to Security — 3.00 credit hours**

- Prerequisite: None
(formerly SEC 100) An introduction to security administration including an historical, philosophical, and legal framework for security operations, as well as detailed presentations of specific security processes and programs currently and historically utilized in providing security. An overview of the personnel, physical information process, and specialized programs for plants, retail stores, transportation systems, and security education. The total environmental, political, financial, legal ramifications of the individual in society. (3 contact hrs) Center Campus.

SECR-1120 — Principles of Loss Prevention — 3.00 credit hours

- Prerequisite: None
(formerly SEC 112) An overview of the functional operations of various specialized areas of security such as theft and risk control, security surveys, and loss prevention management in proprietary and governmental institutions. (3 contact hrs) Center Campus.

SIGN — Sign Language**SIGN-1010 — American Sign Language 1 — 3.00 credit hours**

- Prerequisite: None
(formerly SGN 101) SIGN-1010 is designed for students who have no previous American Sign Language (ASL) training. Students achieve a basic level of expressive and receptive sign communication skills in American Sign Language, and will understand the role of ASL in deaf persons' lives. This course focuses on vocabulary, grammar, language functions, and other deafness-related issues. (3 contact hrs)

SIGN-1020 — American Sign Language 2 — 3.00 credit hours

- Prerequisite: SIGN-1010 or pass competency exam (formerly SGN 102) SIGN-1020 will strengthen and expand on the skills mastered in SIGN-1010. It expands upon expressive and receptive sign vocabulary. Topics include new language functions to help students expand their conversational range from talking about themselves to talking about other people and activities, to giving directions, and making requests. (3 contact hrs)

SIGN-1030 — American Sign Language 3 — 3.00 credit hours

- Prerequisite: SIGN-1010, SIGN-1020, or pass competency exam (formerly SGN 103) SIGN-1030 students will strengthen and master the skills obtained in SIGN-1010 and SIGN-1020. They will enhance their expressive and receptive skills and vocabulary. The course emphasizes locating and describing objects, solutions to everyday problems, life events, weekend activities, and correcting and confirming information. Topics also include appropriate cultural behaviors and strategies for controlling conversations. (3 contact hrs)

SIGN-1040 — Fingerspelling — 2.00 credit hours

- Prerequisite: SIGN-1010 (formerly SGN 104) SIGN-1040 covers the manual alphabet for students who have experience in fingerspelling or dactylogy. Students will learn to sign the alphabet and achieve a basic understanding of the role fingerspelling has in American Sign Language communication. The course functions primarily with the American manual alphabet and highlights phonetical fingerspelling, syllabication and other deafness-related issues. (2 contact hrs)

SIGN-2010 — American Sign Language 4 — 3.00 credit hours

- Prerequisite: SIGN-1030 or pass competency exam (formerly SGN 201) SIGN-2010 students will strengthen and master the skills obtained in SIGN-1010, 1020, and 1030 towards mastering ASL at an intermediate level. They will enhance expressive and receptive skills and vocabulary. This course is structured into logical grammatical units such as sentence types, pronominalization and classifiers. Highlighted topics include sociological aspects of deafness, hearing loss, medical and audiological perspectives and ASL compared to English. (3 contact hrs)

SIGN-2030 — American Deaf Culture — 3.00 credit hours

- Prerequisite: None (formerly SGN 203) SIGN-2030 enables students to recognize and explain the external ramifications of hearing loss. It deals with the characteristics of sociological subculture among the hearing impaired (both deaf and hard of hearing) individuals as it relates to cultural aspects of deafness. (3 contact hrs)

SOCY — Sociology

SOCY-1010 — Principles of Sociology — 4.00 credit hours

- Prerequisite: None (formerly SOC 101) The student will study the origin, development, organization and function of human societies. Emphasis will be on culture, socialization, group behavior, social stratification, and social change. (4 contact hrs)

SOCY-1100 — Modern Social Problems — 3.00 credit hours

- Prerequisite: None (formerly SOC 110) A sociological analysis of some of the major social problems confronting American society. Emphasis is placed on the relationship between social problems and value conflicts, social deviation, and social change. (3 contact hrs)

SOCY-1210 — Introduction to Social Work — 4.00 credit hours

- Prerequisite: None
SOCY-1210 is an introductory behavioral science course that covers the historical, theoretical, and methodological systems that produced social welfare services and the social work profession. Students will participate in Service Learning during class time. (4 contact hrs)

SOCY-2000 — Sociology of Health & Human Behavior — 4.00 credit hours

- Prerequisite: None
(formerly SOC 200) A survey of the field of health and human behavior from a sociological perspective. The course will explore the relationship between health and human development, the structure and function of health institutions, public health, and health education, the variety of roles of health practitioners, and the patterns of health care in American society. (4 contact hrs)

SOCY-2121 — Sociology of Aging — 3.00 credit hours

- Prerequisite: None
(formerly SOCY-2911) SOCY-2121 provides an introduction to various areas included in the study of aging. Topics covered include the impact of changing demographics; stereotypes; theories of aging; and physical, mental, and social processes of growing old. (3 contact hrs)

SOCY-2450 — Marriage & the Family — 3.00 credit hours

- Prerequisite: None
(formerly SOC 245) A sociological analysis of the institutional aspects of marriage and family living, including: a comparative and historical treatment of the family; an investigation of the changes in the contemporary American family structure, functions, and roles, a discussion of contemporary family problems. (3 contact hrs)

SOCY-2550 — Race & Ethnic Relations — 3.00 credit hours

- Prerequisite: None
SOCY-2550 introduces students to the status of racial and ethnic minorities in the United States with particular reference to the social dynamics involved with regard to majority-minority relations. Emphasis is on the culture, social organization and status, and the problems and opportunities of various ethnic groups. Topics covered include inequality, segregation, pluralism, the nature and causes of prejudice and discrimination, and the impact that such patterns have on American life. (3 contact hrs)

SOSC — Social Science**SOSC-2010 — Introduction to International Studies — 4.00 credit hours**

- Prerequisite: None
(formerly SSC 201) Course focus is on an interdisciplinary introduction to the study of diverse cultures to help students better understand the values and experiences of other peoples, as the world becomes a global community. (4 contact hrs)

SPAN — Spanish Language**SPAN-1260 — Elementary Spanish 1 — 4.00 credit hours**

- Prerequisite: None
(formerly SPN 126) This course is designed to introduce students to the Spanish speaking world and Spanish vocabulary and grammatical structures necessary to express personal meaning on basic topics. Students will engage in these activities within contextualized cultural settings. The vocabulary and grammatical structures are integrated into interactive and communicative activities that emphasize all four language skills: speaking, listening, reading, and writing. Students are required to use computer based technology to practice these skills. (5 contact hrs).

SPAN-1265 — Elementary Spanish for Health Care 1 — 4.00 credit hours

- Prerequisite: None
SPAN-1265 provides basic Spanish grammatical structures, vocabulary, and cultural information to allow healthcare providers to understand Hispanic culture and communicate in Spanish. The course uses reading and writing exercises and interactive communicative activities to integrate structure, Spanish medical vocabulary, and colloquial terms specific to healthcare-related situations. The cultural Part of the course helps students understand Spanish speakers' customs and communication styles. (5 contact hours)

SPAN-1270 — Elementary Spanish 2 — 4.00 credit hours

- Prerequisite: SPAN-1260, or SPAN-1265 or two or more years of high school Spanish (formerly SPN 127) This course continues students' development of Spanish language and culture by building and expanding on the culture, vocabulary and language structures learned in SPAN-1260 or SPAN-1265. New language functions will be presented in meaningful activities that emphasize all four language skills: speaking, listening, reading, and writing and allow for further cultural exposure. Students are required to use computer based technology to practice these skills. (5 contact hrs)

SPAN-2360 — Intermediate Spanish 1 — 4.00 credit hours

- Prerequisite: SPAN-1270
(formerly SPN 236) Third-semester Spanish picks up where SPAN-1270 has ended. The central goal is to advance the student's communicative ability and cultural competency with an emphasis on assimilating the language for complex communicative purposes. New language functions will be presented in meaningful activities that emphasize all four language skills: speaking, listening, reading and writing, and empower further cultural exploration. Students are required to use computer based technology to practice these skills. (5 contact hrs)

SPAN-2370 — Intermediate Spanish 2 — 4.00 credit hours

- Prerequisite: SPAN-2360
(formerly SPN 237) This course will stress the expansion of the student's vocabulary, language skills and cultural competency. Classroom activities will center on a thorough review of the most important aspects of Spanish grammar, as well as active oral and written use of the language. The oral exercises will expose students to extended discourse and will develop content and context as appropriate for students moving from the intermediate to the more advanced proficiency levels. Authentic material will provide the student with opportunities to critically engage with elaborate cultural situations. Students are required to use computer based technology to practice these skills. (5 contact hrs)

SPCH — Speech

SPCH-1060 — Speech Communication — 3.00 credit hours

- Prerequisite: None
(formerly SPH 106) Basic skills of effective oral communication through varied speech experiences. Emphasis is on gathering and organizing materials; language, style, delivery, and voice improvement; gaining confidence in working with audiences. (3 contact hrs)

SPCH-1200 — Group Discussion & Leadership — 3.00 credit hours

- Prerequisite: None
(formerly SPH 120) Discussion and leadership in business and industry. Conference and meeting formats: panel, forum, symposium, group dynamics, role playing, brainstorming, and problem solving exercises. (3 contact hrs)

SPCH-1300 — Voice & Speech Improvement Communication — 3.00 credit hours

- Prerequisite: None
Individual instruction and drill in voice dynamics and articulation for basic improvement leading to more effective conversation patterns: pitch, rate, volume, and intonation. Emphasis is on American English based on the Kenyon and Knott Pronouncing Dictionary (IPA). Programmed and self-paced labs accommodate the Speech Communication Arts majors and the College Community at large. While advanced English as Second Language students are accepted, this course is NOT designed as a substitute for speech therapy. May be repeated once for a maximum of six credit hours. (3 contact hrs)

SPCH-1400 — Mass Media Communication in a Global Culture — 3.00 credit hours

- Prerequisite: None
Theories and practices of media content and form focusing on news, radio, television, film, and the Internet. Students will learn the whole process of creating the diversified forms of programming for the media. Audience analysis research will be conducted followed by critical review of programming and media production. (3 contact hrs) South Campus.

SPCH-1460 — Introduction to Broadcasting — 3.00 credit hours

- Prerequisite: None
(formerly SPH 146) Explores the development of broadcasting. Familiarizes and gives practical experience in the use of broadcasting and recording equipment through the production process. Portfolio development projects included. (3 contact hrs) South Campus.

SPCH-1480 — Broadcast Announcing — 3.00 credit hours

- Prerequisite: SPCH-1460
(formerly SPH 148) Theory and practice in applying principles of performance to broadcast media such as announcements in record, news, sports, talk, and interview programs. Discuss federal government rules regulating broadcasters. Perform on a closed circuit radio station. (3 contact hrs) South Campus.

SPCH-1490 — Broadcast Radio — 2.00 credit hours

- Prerequisite: SPCH-1460
(formerly SPH 149) Practical experience in workshop projects. Developing and producing various programs for use on the AM/FM and Web radio. Portfolio development projects included. (2 contact hrs) South Campus.

SPCH-1700 — Broadcast Television — 4.00 credit hours

- Prerequisite: SPCH-1460
Learning theory and systems principles of live television broadcasting using multi-camera production, camera composition and operation, studio roles and functions, and audio acquisitions presenting a basic adaptation of the script rundown to produce a live-to-tape television program. This course will also examine audience analysis, response, and evaluation. Portfolio Development Projects included. (4 contact hrs)

SPCH-1800 — Broadcast Video — 4.00 credit hours

- Prerequisite: SPCH-1460
Learning theory and systems principles of field production using film-style techniques, scriptwriting, performance, and editing to produce narratives and documentaries. This course will also examine audience analysis, response, and evaluation. Portfolio Development Projects included. (4 contact hrs)

SPCH-2100 — Interpersonal Communication Relationships — 4.00 credit hours

- Prerequisite: None
(formerly SPCH 1100) One-to one communication combined with experiences in verbal and non-verbal interaction. The focus is on message preparation, theories of interaction, the role of body language, current issues in relational communication dynamics, expressing emotions, understanding self-disclosure, and developing positive interpersonal relationships. (4 contact hours).

SPCH-2110 — Persuasion — 3.00 credit hours

- Prerequisite: SPCH-1060 (formerly SPH 211) Analysis of persuasion in society. Ethical use of persuasion emphasized in preparation of persuasive talks for securing attention, minimizing hostility, and securing support for positions. (3 contact hrs)

SPCH-2300 — Intercultural Communication — 4.00 credit hours

- Prerequisite: None
Intercultural communication is a course intended for those whose private or professional life includes encounters with people from cultures and co-cultures in the United States different from their own. Major theories and concepts are discussed and skills are practiced to sharpen real sensitivity and improved personal effectiveness when people of different cultures come together to share ideas, feelings, and information. Portfolio Development Projects included. (4 contact hrs)

SPCH-2550 — Argumentation Debate — 4.00 credit hours

- Prerequisite: SPCH-1060 (formerly SPCH 2500) This course instructs the student in the preparation of resolutions and the development of arguments, evaluation of reasoning including fallacies, and evidence applied to writing formal briefs. Students will use oral communication principles and practices to apply skill for participation in various forms of debate. (4 contact hrs)

SPCH-2600 — Public Relations Communication — 4.00 credit hours

- Prerequisite: SPCH-1060 or BCOM-2050 (formerly SPH 260) Communication practices and principles of public relations. Relate with various publics using surveys, media, writing, and creating events. Establish good relations with employees and community using tried methods. Principles of avoiding and responding to emergencies. (4 contact hrs)

SPCH-2700 — Change, Conflict, & Crisis Communication — 4.00 credit hours

- Prerequisite: None
Designed for professionals in leadership whose responsibilities include dealing with diversity, change, conflict, and crises. This course centers on the change process and agents, intercultural competition and issues, and diffusion campaigns. Students participate in crisis communication planning and conflict resolution strategies, tactics, and exercises. (For employer-employee labor issues see the Labor-Management offerings.) (4 contact hrs)

SPCH-2800 — Interpretative Performance Communication — 4.00 credit hours

- Prerequisite: None
Interpretative reading of prose, poetry, and drama: single and multiple readings, chamber and reader's theater, storytelling. Children's literature, old masters, traditional and contemporary works read from manuscript to achieve interaction of the reader, listener, and material. Develops proficiency in oral reading per individual need (i.e., presentations, announcing, acting, etc.). Portfolio Development Projects included. (4 contact hrs)

SPCH-2850 — Speech Communication Capstone Course — 1.00 credit hours

- Prerequisite: Registered Speech Communication major with 35 hours in SPCH courses and consent of Program Advisor
Taken during the last semester of the major or the certificate program, the course will assist the student in preparing the professional portfolio and will give the student information and assistance in developing a resume/interview. In addition, the course will give students assistance as they prepare to transfer. At the last session, the instructor will invite potential local employers. (1 contact hr)

SURG — Surgical Technology

SURG-1050 — Introduction to Surgical Technology — 2.00 credit hours

- ▶ Prerequisite: BIOL-2400 or BIOL-2730, and HHSC-1700 with grade C or better
 - ▶ Corequisite: SURG-1060, SURG-1070
- This course provides an introduction to the allied health profession of surgical technology. Students will learn about the history, professional associations related to, and the role and responsibilities of the surgical technologist. Additional topics include an introduction to the patient including the biopsychosocial needs of the patient, and death and dying. Ethical, moral and legal issues will be explored and examined. Students will learn about regulatory agencies, healthcare facilities, as well as departmental organization and management within the facilities. The physical environment of the operating room will be introduced, and students will learn about various emergency situations and all hazard preparation in the healthcare setting. (2 contact hrs) Center Campus.

SURG-1051 — Introduction to Surgical Patient Care Techniques — 2.00 credit hours

- ▶ Prerequisite: Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and current proof of American Heart Association (AHA)/BLS certification.
 - ▶ Corequisite: SURG-1200, SURG-1250, SURG-1260
- SURG-1051 introduces students to the environment of the operating room with an emphasis on patient safety and on the standards of care required for the surgical patient. This course includes pre-surgical testing and basic and special diagnostic and laboratory studies performed to determine patient diagnosis. Students will be introduced to special equipment used in the operating room. Additional topics include preoperative preparation of the patient, transport, transfer, positioning, catheterization, routine skin preparation, and draping. Types of surgical incisions, exposure, hemostasis, wound closure techniques, sutures, needles, stapling devices, tissue replacement materials, wound management, factors influencing wound healing, dressings and drains will be identified. (2 contact hrs) Center Campus.

SURG-1060 — Orientation to Central Processing Distribution Technician — 4.00 credit hours

- ▶ Prerequisite: BIOL-2400 or BIOL-2730, and HHSC-1700 with grade C or better
 - ▶ Corequisite: SURG-1050, SURG-1070
- This course introduces students to the central sterile processing department and role and responsibilities of the central processing distribution technician. Topics include infection control, decontamination, disinfection, assembly, inspection, and preparation and packaging of instruments and other items for sterilization. Students will also learn about the principles of sterile storage, distribution inventory control, and information technology. (4 contact hrs) Center Campus.

SURG-1070 — Central Processing Distribution Technician Clinical — 8.00 credit hours

- ▶ Prerequisite: BIOL-2400 or BIOL-2730, and HHSC-1700 with grade C or better
 - ▶ Corequisite: SURG-1050, SURG-1060
- In the lab and clinical setting, SURG-1070 students are exposed to all areas of the central service department and actively participate as a member of the central service department. Students will perform cleaning, decontamination, processing (inspection, assembly, and packaging). Students will learn operation of sterilizer, and distribution of patient care supplies and equipment. This clinical meets three eight-hour days per week. Students must provide their own transportation. (24 contact hrs per week for 16 wks) Center Campus.

SURG-1200 — Surgical Clinical 1 — 8.00 credit hours

- ▶ Prerequisite: Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and proof of current American Heart Association (AHA)/BLS certification.
- ▶ Corequisite: SURG-1051, SURG-1250, SURG-1260 (formerly SRG 120) In this supervised lab and clinical course, students will learn, practice, and perform essential skills required in the surgical setting. Students will demonstrate preoperative operating room preparation, scrubbing, gowning, gloving, set up of the sterile field, and perform the functions of the surgical technologist in the sterile field using aseptic technique in the laboratory setting. Students perform in the role of the scrub and circulator on various surgical procedures. Upon successful completion of pre-clinical competencies, students are assigned in the hospital setting three days a week to gain clinical experience and acquire course competencies. Students are responsible for their own health insurance and transportation. (24 contact hrs per week for 16 wks.) Center Campus.

SURG-1250 — Surgical Specialties 1 — 4.00 credit hours

- ▶ Prerequisite: Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and proof of current American Heart Association (AHA)/BLS certification.
- ▶ Corequisite: SURG-1051, SURG-1200, SURG-1260 (formerly SRG 125) This course is designed to focus on the perioperative care of surgical patients during endoscopic, general, robotic, obstetric and gynecologic, genitourinary, ophthalmic, otorhinolaryngology, oral, maxillofacial, plastic, and reconstructive procedures. Students will become familiar with the diagnostic exams, pathophysiology, procedural considerations, operative procedures and the instrumentation, supplies, and equipment for these specialties. (4 contact hrs) Center Campus.

SURG-1260 — Surgical Pharmacology — 3.00 credit hours

- ▶ Prerequisite: Admission into the Surgical Technology program, and ENGL-1180 or ENGL-1210; and BIOL-2400 or BIOL-2730; and BIOL-2710, HHSC-1700, SURG-1050, SURG-1060, and SURG-1070; and proof of current American Heart Association (AHA)/BLS certification.
- ▶ Corequisite: SURG-1051, SURG-1200, SURG-1250 (formerly SRG 126) This course introduces students to medications used in the operating room. An emphasis is placed on classification, administration, forms, methods, interactions, and desired effects of perioperative medications. This course also describes the surgical technologist's legal responsibilities. (3 contact hrs) Center Campus.

SURG-1300 — Surgical Clinical 2 — 8.00 credit hours

- ▶ Prerequisite: Admission into the Surgical Technology program, and SURG-1051, SURG-1200, SURG-1250, and SURG-1260
- ▶ Corequisite: SURG-1350, SURG-1360 (formerly SRG 130) This course further develops clinical skills of students in the perioperative environment. Students continue to increase intraoperative skills anticipating the surgeon's needs during surgery. Students perfect their role as first scrub person, second scrub, and assistant to the circulating person on various surgical procedures as students prepare for employment. This clinical meets three eight-hour days per week. Students are responsible for their own transportation. (24 contact hrs per week for 16 wks) Center Campus.

SURG-1350 — Surgical Specialties 2 — 4.00 credit hours

- ▶ Prerequisite: Admission into the Surgical Technology program, and SURG-1051, SURG-1200, SURG-1250, and SURG-1260
- ▶ Corequisite: SURG-1300, SURG-1360 (formerly SRG 135) This course is a continuation of surgical specialties and is designed to focus on the perioperative care of surgical patients during orthopedic, peripheral vascular, neurosurgery, pediatric, geriatric, and emergency trauma surgery. Students will become familiar with the diagnostic exams, pathophysiology, procedural considerations, operative procedures, and instrumentation supplies, and equipment for these specialties. (4 contact hrs) Center Campus.

SURG-1360 — Surgical Seminar — 3.00 credit hours

- ▶ Prerequisite: Admission into the Surgical Technology program, and SURG-1051, SURG-1200, SURG-1250, and SURG-1260
- ▶ Corequisite: SURG-1300, SURG-1350
(formerly SRG 136) This course includes preparation of the students for professional employment. Students will successfully complete a resume and develop skills in interviewing techniques. Students will further develop test-taking skills to prepare to take the National Certification Examination utilizing techniques and exercises and practice in successful writing of a standardized exam. (3 contact hrs) Center Campus.

SURV — Land Surveying Technology

SURV-1100 — Elementary Surveying — 3.00 credit hours

- ▶ Prerequisite: None
(formerly SUR 110) Use of transit and level; reading verniers and angles, linear measurement; extending straight lines, differential and profile leveling; simple traverse survey, computation and keeping notes. (5 contact hrs) South Campus.

SURV-1110 — Field Procedures — 2.00 credit hours

- ▶ Prerequisite: MATH-1450, or MATH-1420 and MATH-1430, and SURV-1100
(formerly SUR 111) This course introduces the study of surveying field procedure including measurements, first aid, safety, care and use of instruments, notes and calculations needed to perform these tasks. (4 contact hrs) South Campus.

SURV-1200 — Route Surveying — 3.00 credit hours

- ▶ Prerequisite: SURV-1100
(formerly SUR 120) This course introduces the student to the basic principles of route surveying, preliminary and final location procedures, profiles, grades, cross sections, slope stakes, areas, volumes, parabolic and circular curves, and spiral transitionals. (5 contact hrs) South Campus.

SURV-2220 — Civil & Survey Drafting — 3.00 credit hours

- ▶ Prerequisite: SURV-1100, DRAD-1110, and DRCG-1140
(formerly SURV-2200 and DRCG-2200) This course introduces the student to the basic principles of civil and survey drafting. Maps, types of surveys, techniques, contours, descriptions, subdivisions, profiles, highway layout, and earthwork will be discussed, drawn, and reproduced. Using field or supplied data, the student will use the latest computer software to generate the appropriate drawings. Microcomputer configuration, scale relationship, symbols, data entry, use of blocks, file maintenance, and plotting will be covered. (6 contact hrs) South Campus.

SURV-2300 — Boundary Surveying — 3.00 credit hours

- ▶ Prerequisite: SURV-1100
(formerly SUR 230) This course introduces the student to the study of public and land surveys, which includes the breakdown of sections, government lots, meander lines, corners, coordinate calculation areas, missing legs, metes and bounds descriptions, lot and block proportionment, and state plane coordinates. (5 contact hrs) South Campus.

SURV-2400 — Topographic Surveying — 3.00 credit hours

- ▶ Prerequisite: SURV-1100
(formerly SUR 240) This course introduces the student to the different types of topographic surveys, which includes strip, grid, radial and trigonometric. Stadia transit tape, plane table, cross sections, profiles, contours, research, map reading, flood plains, wetlands and photogrammetry control will be discussed and used by the student. (5 contact hrs) South Campus.

SURV-2500 — Introduction to Control Surveys — 3.00 credit hours

- Prerequisite: SURV-1200 or SURV-2300 (formerly SUR 250) This course provides the student with a view of the interrelationship of photogrammetry, control surveys, astronomy, state plane coordinates, calculating coordinates and corrections to positional tolerances. (5 contact hrs) South Campus.

SURV-2600 — Advanced Construction Layout Surveying 2 — 3.00 credit hours

- Prerequisite: ATBC-1510 and SURV-1200 (formerly SUR 260) This course continues to expand the principles of construction layout surveying related to buildings, sitework, utilities and roadways. Students will learn to use state-of-the-art electronic surveying equipment. (5 contact hrs) South Campus.

SURV-2700 — Advanced Survey Instrumentation — 3.00 credit hours

- Prerequisite: SURV-1110 (formerly SUR 270) This course instructs the student in the proper care, adjustments and maintenance of various survey equipment. Students will perform testing and adjustments on levels, transits, and EDMs. (5 contact hrs) South Campus.

TMTH — Technical Math

TMTH-1150 — RCL Analysis — 4.00 credit hours

- Prerequisite: None (formerly TMT 115) Basic algebra, formula transposition, scientific notation (powers of 10), trigonometry, special products and factoring. Application of algebra and formulas to solving network simplification. Simultaneous equations. Resistive D.C. circuits and reactive A.C. circuits (inductive and capacitive), calculations to support EETE-1160 and EETE-1170. (4 contact hrs) South Campus.

VETT — Veterinary Technician

VETT-1020 — Applied Anatomy & Physiology — Lecture — 4.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program (formerly VET 102) VETT-1020 instructs veterinary technician students in the anatomy and physiology of common structures of small and large animals. Students apply appropriate medical terminology to describe anatomical structures and their corresponding physiology relative to the animal's position and compare and contrast the structural and functional differences among various species. The course also covers purebred cat breeds and abnormal behavior disorders in dogs and cats and provides a strong foundation for further study of veterinary technical skills. (4 contact hrs) Center Campus.

VETT-1030 — Applied Anatomy & Physiology — Laboratory — 1.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program (formerly VET 103) VETT-1030 instructs veterinary technician students in the anatomy and physiology of dogs and cats. Application strategies include the use of dog and cat skeletal models, dissection of an animal cadaver, and the dissection of an animal eye and brain. Students will compare anatomical structures of live animals with those identified in the cadaver. (2 contact hrs) Center Campus.

VETT-1040 — Veterinary Practice & Communications — 2.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program (formerly VETT-1720) VETT-1040 prepares veterinary technician students with basic principles of office procedures and communication in veterinary practice. Students develop skills used in routine office practice, including record keeping, financial transactions, euthanasia, and the grieving process. Instruction includes an exploration of the veterinary technician profession, student learning, behavior and personality styles, and common AKC registered dog breeds. (2 contact hrs) Center Campus.

VETT-1060 — Small Animal Techniques — Laboratory — 0.50 credit hours

- Prerequisite: Admission into the Veterinary Technician program (formerly VETT-1090)(note: VETT-1060 and VETT-1070 together replace VETT-1090) VETT-1060 instructs veterinary technician students in basic techniques commonly performed in veterinary practice. Application strategies include handling and restraint, grooming, physical examination, auscultation, oral medication administration, and injection administration in the dog and cat. (1 contact hr) Center Campus.

VETT-1070 — Advanced Small Animal Techniques — Laboratory — 0.50 credit hours

- Prerequisite: Admission into the Veterinary Technician program and VETT-1060 and VETT-1080 (formerly VETT-1090)(note: VETT-1070 and VETT-1060 together replace VETT-1090) VETT-1070 instructs veterinary technician students in advance techniques commonly performed in the dog and cat. It reiterates basic skills learned in VETT-1060. Application strategies include various routes of venipuncture, ophthalmic and otic medication administration, handling and collection of blood, urine, and fecal samples, and the administration of subcutaneous and intravenous fluids. (1 contact hr) Center Campus.

VETT-1080 — Small Animal Techniques — Lecture — 1.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program (formerly VET 108) VETT-1080 instructs veterinary technician students in the basic techniques expected of the veterinary technician in a small animal veterinary practice. Skills covered and emphasized include animal handling and restraint, grooming, auscultation (use of a stethoscope), medication administration, placement of intravenous (I.V.) catheters, and obtaining and handling of blood, urine, and fecal samples. (1 contact hr) Center Campus.

VETT-1220 — Veterinary Anesthesia — Lecture — 2.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010 (formerly VET 122) This course instructs veterinary technician students in the principles of anesthesiology and appropriate usage of anesthetics for small, large, and exotic animals. This course also covers anesthetic monitoring, emergency procedures, and post-anesthetic care. (2 contact hrs) Center Campus.

VETT-1230 — Veterinary Anesthesia — Laboratory — 1.50 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010 (formerly VET 123) This course provides the veterinary technician student with instruction in the preanesthetic, perianesthetic, and recovery phases of anesthesia for dogs and cats. Application strategies covered during these phases include patient evaluation, appropriate anesthetic drug administration, intravenous fluid therapy, intubation and extubation, patient monitoring, correct use of anesthetic equipment, and appropriate response techniques for emergency situations. Topics also include recordkeeping of drugs and anesthetic procedures as well as the practical application of dental prophylaxis techniques on anesthetized patients. (3 contact hrs) Center Campus.

VETT-1300 — Assisting in Veterinary Surgery — Lecture — 1.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010 (formerly VET 130) This course provides veterinary technician students with instruction in the appropriate aseptic techniques for the surgical team, patient, and equipment. Skills covered and emphasized include surgical assisting, care of the surgical patient, and preparation of surgery related equipment. The course also covers common surgical procedures performed in veterinary practice. (1 contact hr) Center Campus.

VETT-1310 — Assisting in Veterinary Surgery — Laboratory — 1.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010 (formerly VET 131) This course provides the veterinary technician students with instruction in procedures related to the surgical aspect of veterinary practice. Application strategies include correct aseptic technique for the surgical team, patient, and equipment. Emphasis is on the technician's role on the surgical team, including preparation of the patient, surgical suite, equipment, and personnel. Topics also include patient positioning for various surgical procedures, pre and post operative patient care, and recordkeeping. (2 contact hrs) Center Campus.

VETT-1440 — Clinical Pathology 1 — Lecture — 2.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010 (formerly VET 144) This course provides veterinary technician students with instruction in the fundamental techniques used in hematology, urinalysis, and parasitology in dogs and cats. Emphasis is placed on the purpose of tests, their clinical significance, and factors necessary for quality control. (2 contact hrs) Center Campus.

VETT-1450 — Clinical Pathology 1 — Laboratory — 3.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010 (formerly VET 145) This course provides veterinary technician students with instruction in procedures related to commonly requested laboratory tests. Application strategies include care and use of microscopes, preparation and examination of blood smears, components of a complete blood cell count, analysis of the physical, chemical, and microscopic components of a urine sample, and the preparation and examination of fecal samples. This course also covers instruction and performance of routine heartworm tests and the abnormalities seen in blood, urine, and fecal samples. (6 contact hrs) Center Campus.

VETT-1580 — Veterinary Technician Internship 1 — 4.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-1220, VETT-1230, VETT-1300, VETT-1310, VETT-1440, VETT-1450, and VETT-1700 (formerly VET 158) This course provides veterinary technician students with supervised clinical experience in an affiliated animal facility. Students gain experience with practical skills that are commonly performed in veterinary practice. (25 contact hrs per week for 8 wks) Center Campus. Spring/Summer semester only.

VETT-1700 — Pharmacology for Veterinary Technicians — 2.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-1020, VETT-1030, VETT-1040, VETT-1060, VETT-1070, VETT-1080, HHSC-1010, and ITCS-1010 (formerly VET 170) This course provides veterinary technician students with instruction in the study of drugs and medical substances of veterinary importance. Topics discussed and emphasized include basics of general pharmacology, routes and techniques of drug administration, governmental drug agencies, systems of measurement and conversion, mathematics affecting dosage, and formulation of drugs. Also covered are the characteristics, classification, usage, storage, and recordkeeping requirements of drugs used in veterinary medicine. (2 contact hrs) Center Campus.

VETT-2050 — Large Animal Techniques — Lecture — 1.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program and VETT-1580 (formerly VET 205) VETT-2050 teaches veterinary technology students the principles and techniques used by veterinary technicians in equine and food animal veterinary practices. Topics include animal handling and restraint, specimen collection, injection routes, anesthesia, and surgery. The course also covers terminology, breeds, physical exam techniques, and anatomy and physiology of the common large animal species and poultry. (1 contact hr) Center Campus.

VETT-2060 — Large Animal Techniques — Laboratory — 1.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program and VETT-1580 (formerly VET 206) VETT-2060 instructs veterinary technician students in the techniques of handling and restraint of equine and food animal species. Application strategies include physical examination, specimen collection and laboratory test procedures, injections, oral medication administration, and other procedures relative to these species. Students will also perform bandaging, hoof care, and lameness exam procedures for horses. (2 contact hrs) Center Campus.

VETT-2200 — Small Animal Diseases — 2.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program and VETT-1580 (formerly VETT-2220) VETT-2200 provides veterinary technician students with basic information on diseases and the body's defense system mechanisms, vaccination procedures, nutrition, reproduction, and public health concerns for the dog and cat species. It stresses preventative health measures and client education. Disease discussions will cover etiology, diagnosis, and treatment. (2 contact hrs) Center Campus.

VETT-2320 — Laboratory & Exotic Animal Techniques — Lecture — 1.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program and VETT-1580 (formerly VETT-2300) VETT-2320 introduces veterinary technology students to the principles and techniques used by veterinary technicians in laboratory and exotic animal veterinary practice. Information and skills covered and emphasized include common species of laboratory and exotic animals, diseases, husbandry, breeding protocols, euthanasia, and necropsy procedures. Also discussed are alternatives to the use of live animals in research, the key members of the research team, and regulatory agencies governing research facilities. (1 contact hrs) Center Campus.

VETT-2330 — Laboratory & Exotic Animal Techniques — Laboratory — 0.50 credit hours

- Prerequisite: Admission into the Veterinary Technician program and VETT-1580 (formerly VETT-2310)(note: VETT-2330 and VETT-2340 together replace VETT-2310) VETT-2330 instructs veterinary technician students in techniques associated with laboratory and exotic animal species. Application strategies include hygiene, handling and restraint, nail trims, and sexing. The course also covers various injection techniques. (1 contact hr) Center Campus.

VETT-2340 — Advanced Laboratory & Exotic Animal Techniques — Laboratory — 0.50 credit hours

- Prerequisite: Admission into the Veterinary Technician program and VETT-1580, VETT-2320, and VETT-2330 (formerly VETT-2310) (note: VETT-2340 and VETT-2330 together replace VETT-2310) VETT-2340 instructs veterinary technician students in advanced techniques performed on laboratory and exotic animal species. It will also reiterate the basic skills taught in VETT-2330. Application strategies include venipuncture and sample collection, injections, anesthesia techniques, ear punch identification and numbering sequence, euthanasia, and necropsy. The course also covers medication administration techniques in lab and exotic animals as well as radiographic positioning of the bird. (1 contact hr) Center Campus.

VETT-2470 — Clinical Pathology 2 — Laboratory — 1.50 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-2050, VETT-2060, VETT-2200, VETT-2320, VETT-2330, VETT-2340, VETT-2620, and VETT-2630 (formerly VETT-2490) VETT-2470 instructs veterinary technician students in advanced laboratory procedures done in veterinary practice. It also reiterates the basic skills taught in VETT 1450. Application strategies include performing skills associated with clinical pathology, clinical chemistry, blood-related tests such as blood typing and coagulation, bacteriology, cytology, mycology, endocrinology, and immunology. Topics also include hematology of exotic and large animal species. (3 contact hrs) Center Campus.

VETT-2480 — Clinical Pathology 2 — Lecture — 1.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-2050, VETT-2060, VETT-2200, VETT-2320, VETT-2330, VETT-2340, VETT-2620, and VETT-2630 (formerly VET 248) This course instructs veterinary technician students in the principles of commonly utilized laboratory tests in veterinary medicine. Topics covered and emphasized include clinical pathology, clinical chemistry, blood functions, bacteriology, cytology, mycology, endocrinology, and virology. The course also correlates the performance, purpose, and clinical significance of the tests with the factors necessary for quality control. (1 contact hr) Center Campus

VETT-2500 — Large Animal Diseases — 2.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-2050, VETT-2060, VETT-2200, VETT-2320, VETT-2330, VETT-2340, VETT-2620, and VETT-2630 (formerly VETT-2100) VETT-2500 provides veterinary technician students with basic information on diseases and the body's defense system mechanisms, vaccination procedures, nutrition, reproduction, and public health concerns for the large animal species. It stresses preventative health measures and client education. Disease discussions will cover etiology, diagnosis, and treatment. (2 contact hrs) Center Campus.

VETT-2580 — Veterinary Technician Internship 2 — 4.00 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-2050, VETT-2060, VETT-2200, VETT-2320, VETT-2330, VETT-2340, VETT-2620, and VETT-2630 (formerly VET 258) This course provides veterinary technician students with additional supervised clinical experience in an affiliated veterinary facility. Students are provided an opportunity to continue practice of necessary skills commonly performed in veterinary practice. (20 contact hrs per week for 16 wks) Center Campus.

VETT-2590 — Veterinary Technician Capstone — 2.50 credit hours

- Prerequisite: Admission into the Veterinary Technician program, and VETT-2050, VETT-2060, VETT-2200, VETT-2320, VETT-2330, VETT-2340, VETT-2620, and VETT-2630 VETT-2590 prepares veterinary technician students for the licensing exam(s) after graduation. Instructors give "mock" exams to test students' knowledge of information and skills learned in the veterinary technician program. Essential skills checklist items not already covered, per American Veterinary Medical Association (AVMA) requirements, are also completed during this course. (2.5 contact hrs) Center Campus.

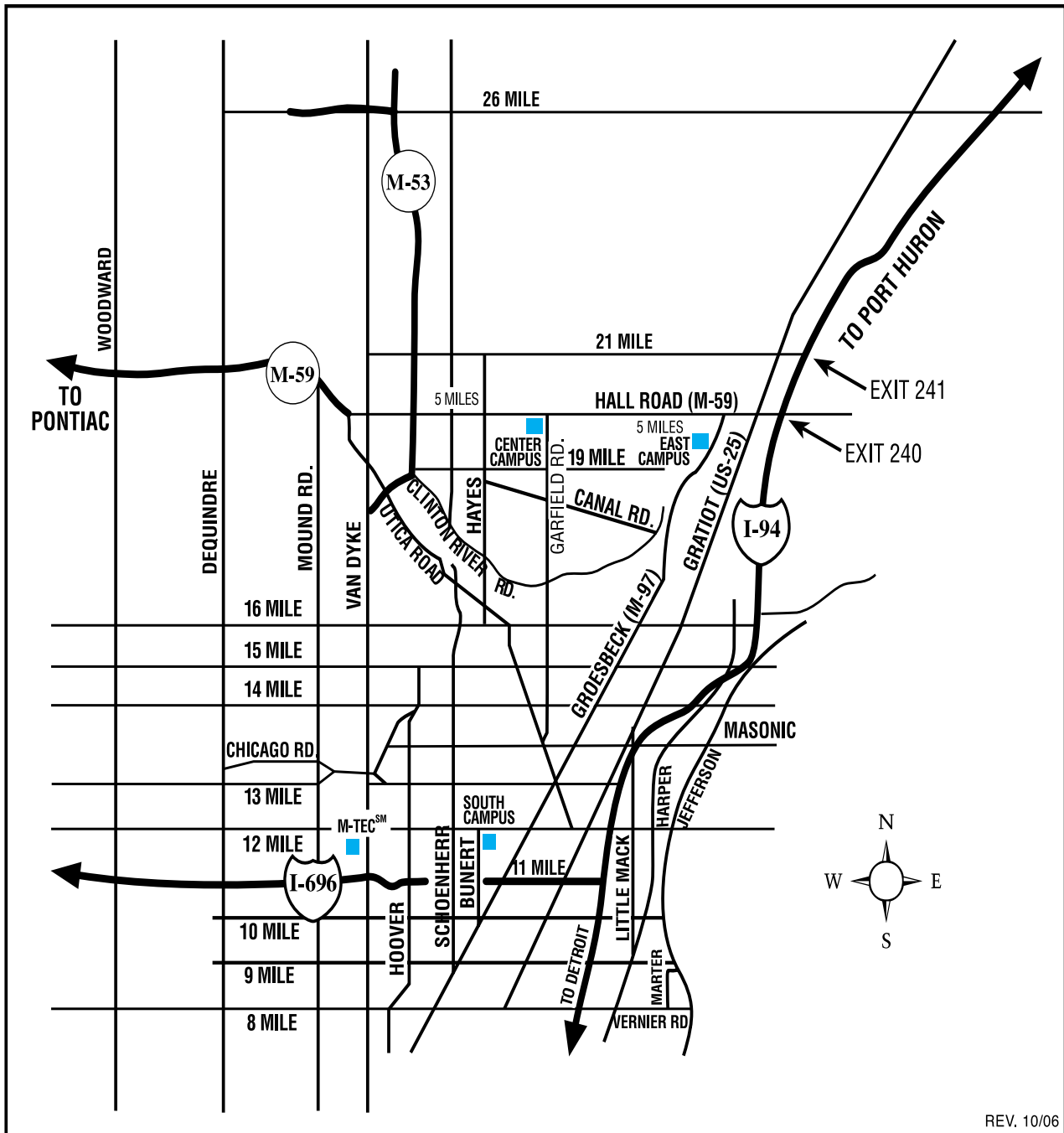
VETT-2620 — Radiology for Veterinary Technicians — Lecture — 1.50 credit hours

- Prerequisite: Admission into the Veterinary Technician program and VETT-1580 (formerly VET 262) VETT-2620 teaches veterinary technician students the fundamentals of taking and developing radiographs. Topics include positioning, how radiographs are generated, fundamentals of film processing, radiographic techniques and quality, and radiation safety procedures. Other imaging technologies include ultrasound, fluoroscopy, MRI, CT scan, and nuclear scintigraphy. (1.5 contact hrs) Center Campus.

VETT-2630 — Radiology for Veterinary Technicians — Laboratory — 1.00 credit hours

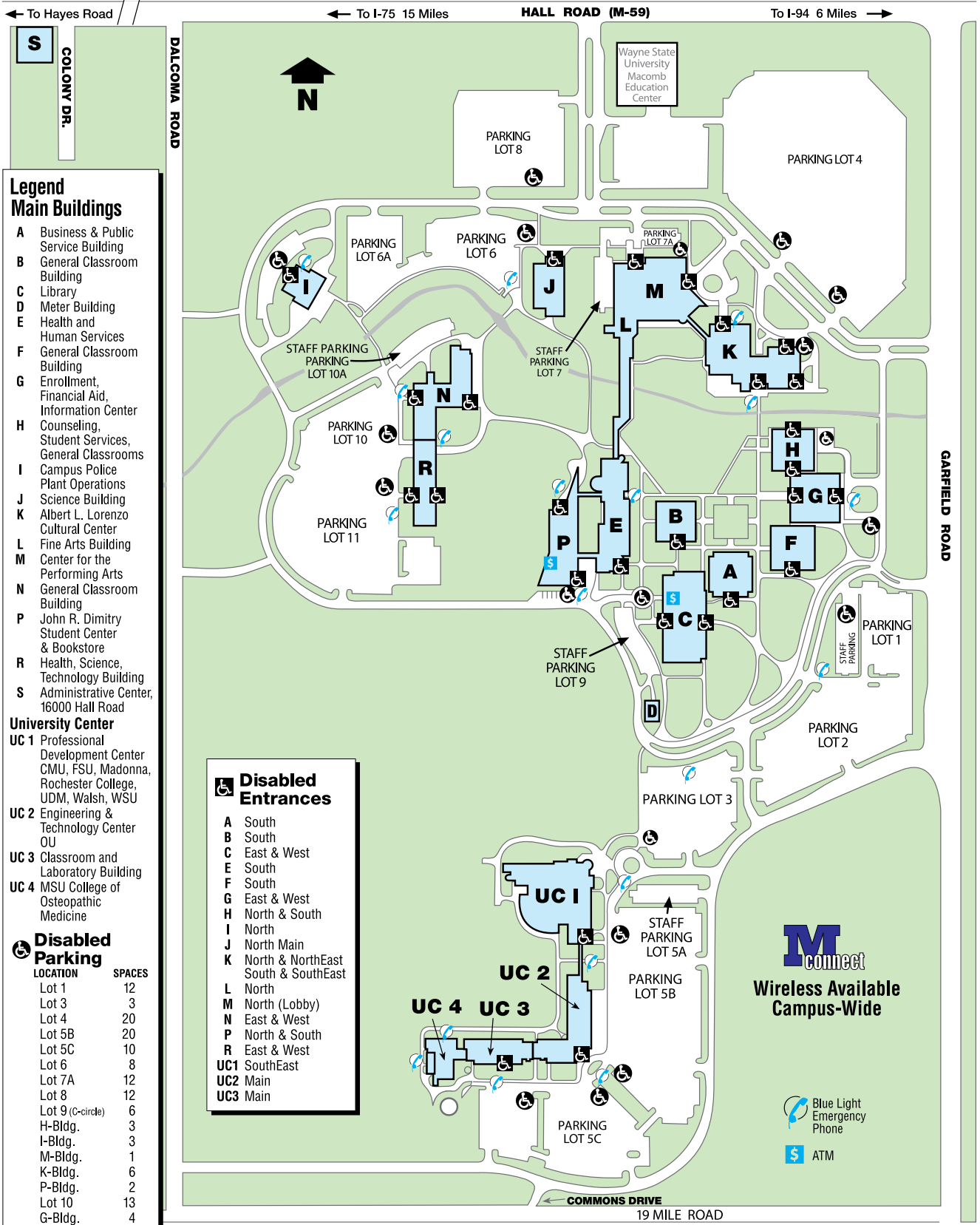
- Prerequisite: Admission into the Veterinary Technician program and VETT-1580 (formerly VET 263) VETT-2630 instructs veterinary technician students in taking and developing quality radiographs, while following safe radiographic procedures. Application strategies include utilizing personnel safety procedures, completion of a portfolio of various commonly performed radiographs, and manual and automatic processing of radiographs. Also covered is the alternative imaging modalities of electrocardiography and ultrasonography. (2 contact hrs) Center Campus.

Campuses & Extension Centers



Center Campus

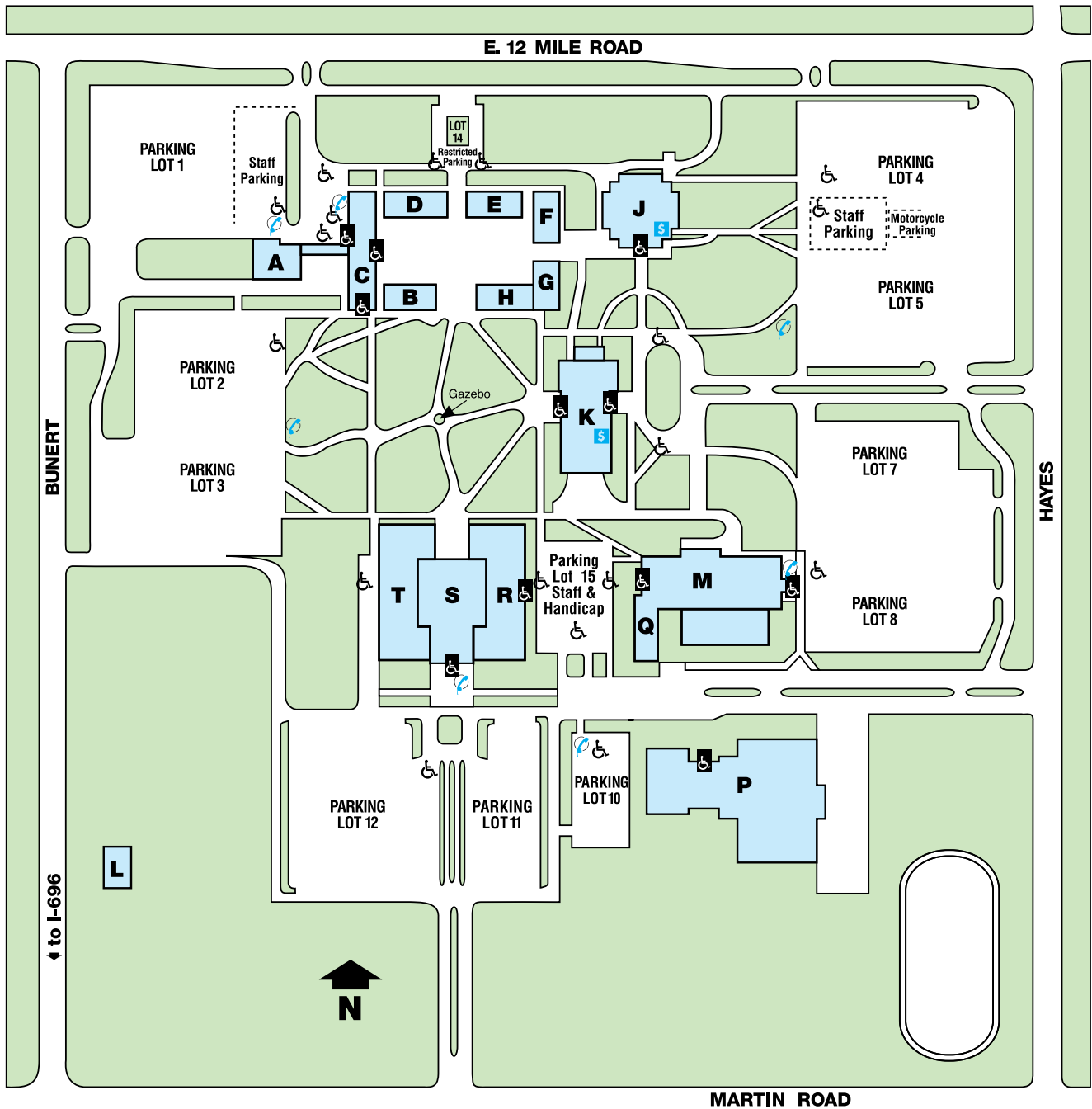
44575 Garfield Road, Clinton Twp., MI 48038-1139, 586.445.7999



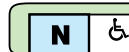
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South Campus

14500 E. 12 Mile Road, Warren, MI 48088-3896, 586.445.7999



REVISED 080212



LEGEND—MAIN BUILDINGS

- A Boiler House
- B Science Building
- C Classroom Building
Campus Police Dept.
- D Administration Building
- E Classroom Building
- F Classroom Building
- G Classroom, Student Services
- H Classroom Counseling Building
- J Max Thompson Learning
Media Center
- K John Lewis Student
Community Center/Bookstore
- L Bunert Conference Center
- M Transportation and Energy
Technology Building
- N College Park Annex
 - Institutional Research
 - Marketing
 - Publications
- P Sports & Expo Center
- Q Boiler House
- Robert E. Turner Complex**
- R Graphic Technical Building
- S Walter E. Bradley Auditorium
- T Mechanical Technical Building

Disabled Parking

Location	Spaces
Lot 1A Staff	3
Lot 2	7
Lot 4	8
Lot 4 Staff	4
Lot 8	14
Lot 10	18
Lot 14	1
Lot 15 Staff	8
C-Bldg	19
K-Bldg	12

Location	Spaces
P-Bldg	18
T-Bldg	8
N-Bldg	6

- Blue Light
Emergency
Phone
- ATM

Disabled Entrances

- C East, West & South
- J Main
- K East & West
- M East & West
- R East Middle
- P North
- M-TEC Main



**Wireless Available
Campus-Wide**

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