



Jackson Community College

Catalog 2011-2012



serious possibilities

Message from the President

Thank you for taking time to explore our catalog that is packed full of courses, programs and services! We are excited that you have chosen Jackson Community College for your college journey, whether you are new to college or continuing! Our faculty and staff are eager to help you take your next steps on the road to your dream, whether that's an associate degree or certificate in one of our career programs, a program designed for transfer to a university, or courses to meet a specific need or purpose.

If you are new to college, you may ask yourself, what is college really all about? At JCC, we are focused on helping our students to succeed, to meet their goals, and to have an outstanding experience throughout your college years. When you walk into a classroom, faculty will offer outstanding teaching utilizing a variety of methods. They will also take time to know and help you. Learn from those who are experts in their field to help you learn what you will need to know when you, too, enter the workforce.



Faculty and staff members can help guide you through your college experience. Tutoring and support services are available through the

Center for Student Success for help with a difficult course. Our Student Life office offers many opportunities for students to connect beyond the classroom, make new friends, and have a well-rounded experience. Students also have the chance to exercise their newfound knowledge and serve their community at the same time through one of many service-learning opportunities. Students ready to live on their own may choose one of our campus housing units, Campus View 1 and 2.

I invite you to get started today by visiting staff at any of our JCC locations. JCC's caring staff can assist you in applying for college, understanding financial aid options, choosing a career field and registering for classes. Speak to one of our enrollment services staff to schedule a visit to campus, take a tour, listen in a class, and attend a college activity.

Selecting the right college is an important step. At JCC, we are serious about you, your success, and your future. Let us walk on this journey with you... YOU ARE NOT ALONE...we will help. Let us welcome you to the "new" Jackson Community College. A world of opportunities is waiting.

Sincerely,

Dr. Daniel J. Phelan, President

Message from the Dean of Student Services

Hello! As dean of student services at Jackson Community College, I would like to thank you for considering JCC and offer my congratulations on your desire to further your higher education!

From JCC you may go directly into the workforce, or you may choose to transfer to a university to continue your education. Whatever your particular goal, JCC can help you to realize it fully. The College is committed to the success of our students. We want to help put you on the right path, from start to finish. From the enrollment and registration process and throughout your courses, JCC staff and faculty are here to help.

Perhaps you are unfamiliar with college and how everything works; do not worry, you are not alone! Please do not hesitate to ask our student services staff, personnel in our locations in Hillsdale and Lenawee and JCC faculty if you have a question, concern, or need direction. Everyone, including those who have been in college or attended in the past, will have questions at some point.



You may be asking, in general, what can I expect in college? Expect to explore new subjects, discover new information and learn valuable skills to help you in your future work and life. Expect to meet new people, with fellow students of many ages and backgrounds enrolling at JCC. Most of all, expect to grow and broaden your horizons as you pursue your educational journey.

This catalog contains overviews of the many different programs available, important steps in the process, and valuable information about the College overall. Take a few minutes and read it over, and again, if you have any questions or concerns, do not hesitate to call or stop by any JCC location.

Best Wishes!

Dr. Michelle Shields, Dean of Student Services

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Chapter 1 • Welcome to JCC

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ABOUT JCC

JCC was founded as Jackson Junior College in 1928 and operated as a division of the Jackson Union School District, sharing lab and library facilities with the high school. In 1962, Jackson County voters created Jackson Community College as a distinct entity; and in 1964, they passed a charter millage that still funds the College today. Rapid enrollment and program growth in the 1960s spurred JCC to build a new campus on its present site. Today, the College owns more than 500 acres and sits on a scenic rural site six miles south of the city of Jackson, and operates centers in Adrian, JCC @ LISD TECH, and in Hillsdale, Clyde E. LeTarte Center. An integral educational and economic force in the Jackson, Lenawee and Hillsdale communities, JCC operates on a \$45 million general fund budget. Each year, more than 11,000 students enroll at JCC, with 54 percent attending part-time. About 60 percent take classes on the Jackson campus; others attend one or more of JCC's centers, or take classes online via JCC's extensive distance learning offerings. About 30 percent of JCC's students are in programs preparing for transfer to a four-year college or university. JCC has 95 full-time faculty (90 percent have postgraduate degrees in their teaching field) and 362 adjunct faculty, many of whom teach at more than one JCC location. The College is supported by 238 staff and administrators.

ACCREDITATION

Jackson Community College is accredited by The Higher Learning Commission and is a member of the North Central Association of Colleges and Schools, 30 North LaSalle Street, Suite 2400, Chicago, IL 60602-2504. JCC participates in Academic Quality Improvement Program (AQIP) using a Baldrige Performance Excellence framework.

Accredited occupational programs include:

Accounting – Association of Collegiate Business Schools and Programs (ACBSP) - recertification pending

Automotive – National Automotive Technicians Education Foundation (NATEF)

Aviation – Federal Aviation Administration (FAA), Part 61

Business – Association of Collegiate Business Schools and Programs (ACBSP)

Corrections – Michigan Corrections Officers' Training Council

Medical Assistant – Commission on Accreditation of Allied Health Education Programs (CAAHEP) 1361 Park Street, Clearwater, FL 33756, Phone: 727.210.2350, Fax: 727.210.2354, on the recommendation of the Medical Assisting Education Review Board (MAERB), 20 North Wacker Drive, Suite 1575, Chicago, IL, 60606-2930, 312.899.1500

Nursing (ADN/LPN) – Michigan Board of Nursing

Online – Higher Learning Commission (HLC) via the Michigan Community College Association Virtual Learning Collaborative (MCCVLC)

Radiologic Technology – Joint Committee on Education in Radiologic Technology (JCERT)

Respiratory Care – Commission on Accreditation for Respiratory Care (CoARC). For more information on the program's accreditation status, contact Tom Smalling, PhD RRT, Executive Director, Committee on Accreditation for Respiratory Care, 1248 Harwood Rd., Bedford, Texas 76021-4244, 817.283.2835

Sonography (General, Cardiac, Vascular) – Commission on Accreditation of Allied Health Education Programs (CAAHEP) via the curriculum review of the Joint Review Committee on Education in Diagnostic Medical Sonography (JRCDEMS)

Institutional accreditation inquiries should be directed to the Executive Director of Quality and Institutional Effectiveness.



MISSION

Jackson Community College is an institution of higher education whose mission is to assist learners in identifying and achieving their educational goals.

VISION

Jackson Community College is a world-class institution of higher learning where learners succeed and community needs are met.

VALUES

The following organizational values shall guide all policies and practices at the College.

INTEGRITY possessing a sense of honesty and truthfulness in regard to the motivation for one's actions.

COMPASSION possessing an active desire to empathize with and alleviate another's suffering.

INTERDEPENDENCE reliance on one another socially, economically, environmentally, and politically.

QUALITY seeking excellence in all that we undertake.



INCLUSION engaging in a practice of including people.

SERVICE action with the aim of providing for the public good.

PROFESSIONALISM actions that reflect on the organization and its mission in a positive light.

TRANSFER GUARANTEE

Jackson Community College guarantees that any course which is included on a current transfer guide sheet, or course equivalency guide, transfers to that baccalaureate degree institution, provided the following criteria are met:

- Earn a minimum grade of 2.0 in the course(s) you transfer.
- Meet the admission criteria of the baccalaureate degree institution.
- Transfer to a baccalaureate degree institution within three years of completing the course(s) you wish to transfer from JCC.

Keep your record current with the Registration and Records Office so that your program of study is correct. Be sure to work with your advisor and your transfer institution. Changes in program of study or transfer institution may impact the transferability of courses taken before the change. Contact an academic advisor if you have any questions about transferability of courses as a result of changing your program of study or transfer institution.

If you meet all of these conditions, JCC will refund your tuition for any course that is not accepted for transfer by the baccalaureate degree institution. JCC cannot guarantee courses taken at other colleges or universities. If you have questions, or for more information about the JCC guarantee, contact an academic advisor.

CAREER PROGRAM GUARANTEE

Jackson Community College guarantees that the courses you take in any Associate in Applied Science degree program will give you the entry-level skills you need for that particular occupation, providing the following criteria are met:

- Follow and complete the official JCC program guide sheet for course selection and sequencing. Apply for and be approved for graduation (the full program of study must be completed at JCC).
- Be employed full-time in a job related to your JCC program of study within one year of graduation.
- Keep your record current with the Registration and Records Office to ensure your program of study is correct and accurate.

Note: Although some students are employed prior to graduation, the guarantee will only apply if you have completed all courses required for graduation prior to becoming employed in your field of study.

If you are subsequently judged by an employer to be lacking in technical job skills normally expected of any entry-level employee, JCC will provide further skill training up to 16 credits within two academic years without additional charge for tuition or fees. In order to be eligible for retraining, the employment must be certified by Student Services on the Jackson campus as being directly related to the graduate's program of study. The employer must certify in writing that the employee is lacking the entry-level job skills identified at the time of initial employment and must specify the area(s) of skill deficiency within 90 days of the graduate's initial employment. This guarantee applies only to those skills for which the student received training in his or her program at Jackson Community College. It does not apply to students who fail to pass licensing, certification, or registration tests required by an external body. The employer, the graduate and a faculty advisor in the program of study will develop an educational plan which specifies the courses constituting up to 16 credits of retraining. The graduate must meet all prerequisites, corequisites, and other admission requirements for retraining courses.





POLICIES

Many JCC policies are published in Student Rights and Responsibilities, a handbook made available to all students via the College web site and at orientation. Copies are also available at the bookstore. The following are summaries of administrative policies that relate directly to students.

ACADEMIC COMPLAINTS

For information see the Student Rights & Responsibilities handbook, available at the Student Center on the Jackson campus and all JCC locations. The Academic Complaint process and form can also be found online. See the "Student Forms/Guidelines" available on the Academic Deans web page, www.jccmi.edu, under "Academics."

ACADEMIC AMNESTY/FORGIVENESS

Students may request that an obsolete course be excluded from the cumulative academic GPA. This also removes the associated credit value. The action is indicated on the student record with an Academic Amnesty notation. Academic Amnesty does not affect financial aid criteria for satisfactory academic progress. Students may appeal extenuating circumstances to be considered for financial aid awards. For information call the Registrar's Office at 517.796.8584 or visit Student Services on the Jackson campus.

DRUG-FREE CAMPUS

JCC strictly prohibits the unlawful manufacture, possession, use or distribution of controlled substances including alcohol, marijuana, narcotics, stimulants, depressants and hallucinogens. No person shall come on College premises or participate in a College activity while under the influence of such a substance. Violators will be subject to discipline and sanctions, up to and including expulsion. (See Student Rights and Responsibilities handbook.) JCC offers a drug abuse prevention program that is accessible to any student of the school. Contact the Center for Student Success for information and referral to services.

SMOKING

JCC campus sites are smoke free in all public locations.

FINANCIAL OBLIGATION HOLD

JCC reserves the right to withhold student record information including but not limited to transcripts, diplomas and/or other records until a financial obligation as a result of unpaid tuition, fees and other charges has been met.

WEAPONS AND VIOLENCE ON CAMPUS

Nothing is more important to Jackson Community College than the safety and security of its students, employees and guests. Threats, threatening behavior, or acts of violence against students, employees, visitors, guests or other individuals by anyone on Jackson Community College property will not be tolerated. Violations of this policy will lead to disciplinary action which may include dismissal, arrest or prosecution. Weapons and potentially lethal items on college property is prohibited. Any person who makes substantial threats, exhibits threatening behavior, or engages in violent acts on Jackson Community College property shall be removed from the premises as quickly as safety permits and shall remain off Jackson Community College premises pending the outcome of an investigation. The College will initiate an appropriate response. This response may include, but is not limited to, suspension and/or criminal prosecution of the person or persons involved. For students safety, designated security personnel are authorized to carry weapons. JCC complies with the Cleary Act. For more information contact campus security.

PROPERTY DAMAGE AND LOSS

Jackson Community College does not assume any responsibility for personal property brought onto campus or for damage to vehicles on campus.

RESPONSIBLE USE OF INFORMATION

TECHNOLOGY RESOURCES

Jackson Community College provides information technology resources such as computers, Internet and campus intranet access, to students, staff, administration and faculty, and authorized guests who are performing educational, cultural, or other tasks that further the College mission. Users of information technology resources must comply with all federal, state, other applicable laws, and JCC's regulations and policies.

JCC's Responsible Use Policy includes guidelines on topics ranging from password and file protection to privacy and copyright issues. The policy also defines a process for investigating possible violations.

All users are expected to be familiar and comply with the Responsible Use Policy. It is in several publications, including the Student Rights and Responsibilities handbook available at the Jackson campus Student Center, the Hillsdale LeTarte Center and JCC @ LISD TECH, Adrian. The policy is also available online or by calling the JCC Solution Center, 517.796.8639.



SEXUAL HARASSMENT

Sexual harassment is not tolerated on campus. Offenders are subject to College disciplinary action and/or criminal prosecution. Disciplinary proceedings for a student may result in expulsion. Complaints should be brought to the immediate attention of the compliance officer, Executive Director of Human Resources and Workforce Development, 517.796.8403. (See Student Rights and Responsibilities handbook.)

**JCC @ LISD TECH**

1376 N. Main Street

Adrian, MI 49221

Phone: 517.265.5515 • FAX: 517.265.5450

In the fall of 1989, Jackson Community College expanded its operation to Lenawee County with the opening of the Lenawee Center in Adrian, Michigan. The center's steady growth from 280 students to over 900 students by the spring of 2003 was affirmation that Lenawee residents were looking for the quality education that JCC could offer them in a convenient location within the county. By 2001, JCC was again looking to expand its Lenawee operations and signed a historic educational partnership with the Lenawee Intermediate School District to provide expanded educational opportunities to Lenawee residents. As part of this partnership, JCC purchased land on the LISD TECH Center's campus and built a beautiful 27,000-square-foot facility. JCC @ LISD TECH opened its doors in the Fall of 2003 offering its students state-of-the-art computer lab technology, high-tech classrooms, wireless Internet access, a student lounge, a full-service bookstore, a bistro, and science labs. These features and more have allowed JCC to expand its course offerings in Lenawee County in an attractive, comfortable, and professional atmosphere. In just a few years at JCC @ LISD TECH, enrollment has grown an astounding 94 percent, reaching nearly 1,750 students for Winter '09. With the expansion of its course offerings and occupational programming such as culinary arts and hospitality management, computer networking and security, and the accelerated business program, JCC @ LISD TECH is the right choice for students pursuing a high-quality education at a location that offers convenience, affordability, and accessibility. Please contact the center so that an academic advisor may assist you with your educational goals. Our knowledgeable staff will help you with advising, registration, financial aid, and more.

JCC/LISD Academy

Located on the campus of JCC @ LISD TECH, the JCC/LISD Academy is a middle college program designed to educate underserved students who have the potential to succeed, but may not fare well in the traditional secondary educational setting. Academy students complete high school curriculum and earn college credits, with the goal of graduating with a high school diploma and up to an associate degree in five years. The Academy is just one of the many educational opportunities resulting from the partnership with the Lenawee Intermediate School District.

**Hillsdale, LeTARTE CENTER**

3120 W. Carleton, P.O. Box 712

Hillsdale, MI 49242

Phone: 517.437.3343 • FAX: 517.437.0232

JCC has a long history of offering classes in Hillsdale. On November 21, 2000, the Hillsdale Center was renamed to honor JCC's former President Clyde E. LeTarte and his service to the College and the tri-county area. The Hillsdale LeTarte Center currently offers nearly 700 students more than 90 classes. Prior to the opening of the center, all classes were offered through the adult education program at Hillsdale High School. Continued growth resulted in the Hillsdale LeTarte Center. This 10,700-square-foot facility houses seven classrooms and several student computers in the lobby area that are available all hours that the center is open. All classrooms also have Internet connections. Academic advising is available by appointment. The LeTarte Center offers one stop services designed to make the enrollment process easy for students.

Recent renovations have added a science lab, a student cyber café, upgraded computer labs, and renovated office areas.

DISTANCE LEARNING

JCC's accredited distance learning program allows students to complete their course work without time and place restrictions and with the benefit of added flexibility. These courses teach the same concepts and require students to master the same competencies as courses offered on campus; the difference is in the delivery. Although students can work on their course work at any time and any place, there are timelines and due dates in the online courses. While distance

learning can take a wide variety of forms, all distance learning activities are characterized by the separation of place and/or time between the instructor and the learner. At JCC, the major difference between distance learning online courses and traditional courses is the mode of instructional delivery. Traditional courses are generally structured around a group of students meeting at a fixed time and place.

Distance learning courses are not necessarily suited to all students' learning styles or needs. They also should not be considered "open entry/open exit" courses. There are timelines and due dates for online courses. Some students find it difficult to study independently and need face-to-face contact with an instructor and other students on a regular basis. Self-motivated learners with strong reading, writing and computer skills have the best success with these modes of instruction. Distance learning courses do have enrollment limits. Registering for classes early is advised.

JCC offers full online associate degrees and certificates, along with articulation agreements with four-year colleges and universities to complete bachelor's degrees online. To get up-to-date course and degree information visit the distance learning web site at www.jccmi.edu/distancelearning or call toll-free at 1.888.522.8744.

If you are looking for additional transferable distance learning courses, not currently offered by JCC, visit the Michigan Community College Virtual Learning Collaborative (MCCVLC). The Michigan Community College Association has created a virtual learning collaborative (MCCVLC) among Michigan's community colleges. The collaborative allows Michigan community college students to take courses from other member colleges while receiving support services and maintaining their academic record at their designated home college. Visit the MCCVLC web site at www.mccvlc.org for more information.



GEORGE E. POTTER CENTER
Community Relations and The Performing Arts
Ticket Office: 517.796.8600
Rental information: 517.796.8473

Performers rave about the world-class acoustics of the Harold Sheffer Music Hall, one of three theatres in the George E. Potter Center. Celebrities such as Amy Grant, Travis Tritt, Bill Cosby, Brian McKnight and LeAnn Rimes have taken the stage here as well as productions that include "Last Comic Standing," "Jesus Christ Superstar" and

"Cats." The Michael Baughman Theatre, a smaller, more intimate stage, hosts such groups as JCC's Theatre Department, the community's Center Stage Jackson, a comedy series and the Michigan Shakespeare Festival. The Ruth Day Theatre, a stage in the round, welcomes even smaller audiences. More than a hundred community organizations rent the George E. Potter Center's facilities each year, including the Federer meeting rooms and Robert E. Snyder Dining Room. The George E. Potter Center is also a popular site for weddings and family celebrations, offering complete catering and set-up services.



JCC FLIGHT CENTER
JCC Flight Center at Reynolds Municipal Airport
3610 Wildwood, Jackson, MI 49202-1811
Phone: 517.787.7012

The JCC Aviation Flight Technology program, established in 1979, operates a facility to serve the aviation student at Jackson County Airport – Reynolds Field. This program provides classroom areas, briefing and instructor rooms with hangar. JCC utilizes a fleet of modern Cessna single-engine aircraft for safe, effective training. JCC provides an associate degree as well as private, instrument and commercial certification and flight instructor rating certifications. Course credits may transfer to a four-year institution for a bachelor's degree in aviation through articulation agreements established with JCC's partner colleges and universities. JCC's flight program provides one of the most flexible, safest and cost effective programs in America.

CORPORATE AND CONTINUING EDUCATION

Bringing business, education, and training together is the goal of JCC's Corporate and Continuing Education office (CCE). CCE collaborates with our economic and workforce development partners to better serve employers in the South Central Michigan region through customized training and continuing education. If you are interested in education and training options for your employees, call the CCE office today at 517.796.8615.

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Chapter 2 • Admissions

Catalog 2011-2012



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ADMISSION TO JCC

JCC is committed to student success.

- Admission is open to anyone who demonstrates college readiness.
- International students are welcome at JCC. See page 8 for special admissions procedures.
- Students still in high school may attend with the written permission of a parent or legal guardian and school principal or counselor by using the Dual Enrollment and High School Guest Registration form, available from area schools, online, or at any JCC location. Dual enrollment students must provide PLAN, PSAT, SAT, or ACT scores. For more information, see the form on our web site.
- Admission to JCC does not guarantee admission to a specific program of study. Students interested in nursing or allied health programs should consult with an academic advisor.
- Applicants must follow the admissions process below.
- Some types of criminal convictions may preclude or delay eligibility to enter certain occupations. If you have been convicted of a crime, it is your responsibility to research your chosen occupation.

ADMISSION PROCESS

1. Submit an application for admission.
 - International students – see special admission process listed in the International Students section on page 8.
 - Applicants who completed the admission process but did not register for classes within one year must update their record by contacting the Student Services Office.
 - Former JCC students who have not recently attended JCC may update their student record during registration. **Re-application is not necessary.** Students who have not been enrolled for more than one year are subject to the curricula and requirements of the catalog in effect at the time of re-enrollment.
2. Recent high school graduates should have ACT or SAT scores and any Advanced Placement test results sent to JCC. If ACT or SAT scores are on a high school transcript, send an official document directly to the Student Services Office. JCC's course placement assessment may also be required.
3. Degree-seeking students should have official transcript(s) from all prior colleges/universities sent directly to the Student Services Office. The transcript must be mailed directly from the institution. Official transcripts cannot be delivered by the student, including those in sealed envelopes.
4. Participate in course placement, if necessary.
5. Attend an advising session/orientation.

COURSE PLACEMENT AND ASSESSMENT

New students participate in our assessment process. Information from the assessment will help students and academic advisors select appropriate classes. Students must take prerequisites as indicated by assessments to ensure they possess a minimum level of skills and knowledge to succeed in their courses. Assessments may be one of the following:

- ACT or SAT tests.
- Course Placement.
- Evidence of successful college coursework. Please provide a copy of official or unofficial transcripts.

**NEW STUDENT ADVISING**

New students will meet with an advisor to review their educational plan, select courses and receive information about registering. Advisors will use Course Placement results, ACT/SAT scores, or previous college transcripts to properly assist students in choosing course work. If attending high school, please arrange to have a final official transcript sent upon graduation.

MANDATORY ORIENTATION

Research in higher education speaks strongly about the importance of colleges and universities providing their new students with an informative and thorough introduction to student expectations, college services, programs, activities and navigating the college experience. To meet this end, new students are required to participate in an orientation session which is offered prior to the start of each academic semester. To schedule your orientation, we invite you to visit the JCC web site or call 517.796.8425.

TRANSFERRING CREDITS TO JCC

Students who have studied at other institutions of higher education may have those courses evaluated for possible JCC credit. Transcripts and official documents are evaluated only if the student has a current Application for Admission on file. The following are guidelines for transferring credit to JCC:

1. Only official transcripts are evaluated for credit that will be posted on your JCC transcript. Student grade reports or student copies (including those in a sealed envelope) of transcripts are only used for advising purposes, not credit evaluation.
2. Only credit granted by regional accrediting associations (e.g., North Central Association of Colleges and Secondary Schools) are considered for transfer to JCC.
3. Credit is granted and posted for courses with a 2.0/C grade or higher only.

4. Evaluation of credits from non-semester schools is based on consistent course content. If course content is evaluated as consistent, the course requirement is evaluated as met; however, the student is responsible for meeting the total credits required for the declared JCC program.
5. Evaluation of military credit is consistent with the American Council on Education's Guide to the Evaluation of Education Experiences in the Armed Forces recommendations (ACE). In addition, JCC is designated as a Service-members Opportunity College and is committed to serving the special needs of military personnel.
6. JCC recognizes Advanced Placement (AP), College Level Examination Program (CLEP), and Defense Activity for Non-traditional Education Support (DANTES). Scores on AP are course specific in order to receive academic credit. See the JCC web site for specific scores.
7. A minimum of 12 credits must be taken at JCC to earn a degree or certificate. For an additional degree, 12 additional credits must be taken at JCC. For an additional certificate, six additional credits must be taken at JCC.



STUDENT STATUS

Students are classified according to their educational goals.

DEGREE-SEEKING

- Students working toward an associate degree, certificate, concentration, or skill set.
- International students (see criteria at right).

INTERNATIONAL STUDENTS

In accordance with the U.S. Citizenship and Immigration Service/Homeland Security stipulations, JCC will classify as an international student any applicant who is not a United States citizen and who has been admitted to the U.S. in a temporary, nonresident status. International students at JCC pay the international tuition rate. Au pairs are considered to be international students. Those who receive the Michigan or Jackson County tuition rate must:

- Obtain legal U.S. residency status as a permanent resident, refugee or be granted asylum as of the start of the semester. Individuals who have refugee, immigrant or resident alien status are not classified as international students. The visa classification of each international applicant determines the admission requirements and the attendance regulations applied to the applicant. General admission to JCC for all types of visas requires applicants to:
- Be at least 18 years old.
- Provide proof of competency in the English language.
- Provide additional documents as required by the applicant's USCIS visa classification.

Admission to JCC is considered after receipt of the application and all required documents. Applicants outside the United States are advised to apply as early as possible to allow for mail delays, obtaining visas and exit permits, and making travel arrangements.


All required materials must be completed and received in the Student Services office by the following deadline:

Fall:	July 1
Winter:	October 1
Spring:	April 1

There are no exceptions to the application deadline dates. Materials received after the deadline will be considered for the following semester.

Prior to registering for classes, international students may need to take a portion of JCC's course placement assessment in reading, writing or math for placement in appropriate courses. In addition to the regular admission process, international students need to provide:

- Certified transcripts with certified English translation.
- A brief personal statement explaining educational background and plans.



CONTACT US:

Admissions: 517.796.8425	Financial Aid: 517.796.8410	Veteran Affairs: 517.796.8611
Advising: 517.796.8402	General Information: 517.787.0800	Or online: www.jccmi.edu
Cashier: 517.796.8420	Registration: 517.796.8405	

- Evidence of English proficiency (550 or better for the written test of English as a foreign language or a score of 213 for computer TOEFL or Internet version score of 79).
- An Affidavit of Support (F-1 students with U.S. sponsors).
- An F-1 transfer clearance form, if transferring from a U.S. college or university.
- A notarized personal financial resource statement (with supporting documentation no more than six months old).
- A passport size photo.

Upon completion of these requirements, JCC issues the I-20 Certificate of Eligibility. Jackson Community College offers campus housing and we encourage International students to complete the housing application if interested in living on campus. JCC will not coordinate the finding of housing on campus or off campus. JCC will not provide jobs or financial assistance for international students.

NON-DEGREE-SEEKING

- Students taking courses for personal interest or skill development.
- High school students with permission from their parents and principal or guidance counselor, enrolled for academic courses. Dual Enrollment and High School Guest Student Registration form is available at all JCC locations, at local high schools, and on the JCC web site.

The JCC Dual Enrollment form must be used by high school and homeschooled students to register, drop and withdraw from courses. The form must be filled out completely.

- Students attending other colleges or universities often enroll at JCC for a single semester or more. It is recommended that the student obtain written approval for transfer of credit to the home college before registering at JCC.

We welcome "guest" students. Please see our "Guest Student" informational page on the JCC web site.

FINANCIAL AID

Getting ready for college takes lots of planning, especially financial aid planning.



The Financial Aid Office can help you find whatever educational financial aid is available. You may have more options than you thought possible!

Check the JCC web site (www.jccmi.edu) or call the Financial Aid Office (517.796.8410) for more information. We will help with your questions about meeting college costs and applying for financial aid. We will communicate with you using your JCC student e-mail. Be sure to respond promptly when we ask for documents and award acceptances.



TYPES OF FINANCIAL AID AT JCC

JCC administers federal, state, institutional and private sources of financial support. You may qualify for one or more of the following types of financial aid.

- Grant or scholarship - gift assistance you do not have to repay.
- Loan - borrowed money you must repay with interest.
- Work-study - part-time employment on or off campus (community service).

FEDERAL SOURCES

Federal Pell Grant

Federal Supplemental Educational Opportunity Grant

Federal Work-Study

Federal Direct Loans

PLUS (Parent Loan for Undergraduate Student)

INSTITUTIONAL SOURCES

Each year JCC sets aside a portion of its operating budget for institutional scholarships, such as scholarships for high school seniors and scholarships for new and returning students. Although the amount differs each year, the College attempts to provide assistance to as many qualified applicants as possible. Check the JCC web site or contact the Financial Aid Office for details on scholarships that are available, timelines, and for any other assistance.

JCC Presidential Scholarship

The JCC Presidential Scholarship is an academic award for high school seniors with a minimum GPA of 3.0 who plan to attend JCC full-time beginning in the Fall semester immediately after high school graduation. This 'tuition-only' scholarship is awarded annually and divided equally

between Fall and Winter semesters. Recipients are required to enroll full-time (minimum 12 credit hours) for each semester. The Presidential Scholarship is renewable for a second academic year at JCC provided the student maintains full-time enrollment and continues to earn a minimum overall GPA of 3.0.

JCC Recognition of Excellence Scholarship

The Recognition of Excellence Scholarship is an academic award. The 'tuition only' scholarship is awarded annually and divided equally between Fall and Winter semesters. Recipients are required to enroll half-time (minimum 6 credit hours) for each semester.

JCC Foundation Endowed Scholarships

Dozens of private scholarships are awarded at JCC based on criteria set by the sponsoring organizations and donors. A list of all current scholarships is available on our web site.

HOW TO APPLY FOR FINANCIAL AID

1. Apply for admission to Jackson Community College.
2. Complete a Free Application for Federal Student Aid (FAFSA) form as soon after January 1 as possible. To avoid delays and ensure that your aid eligibility is determined before Fall registration begins, be sure to file your FAFSA and submit all required documents early.
3. Complete the JCC Foundation Scholarship application for institutional and private funding consideration before the March deadline.
4. Respond promptly to any requests from the Financial Aid Office for additional information such as copies of federal tax returns, verification of untaxed income or benefits, etc. The sooner you respond, the faster we can determine your financial aid eligibility.
5. To be considered for a Federal Direct Loan, you must complete the online application process (www.jccmi.edu) in addition to filling the FAFSA and completing all required documents.
6. Explore other financial aid options available in the community: high school counselors; parent/student employers; local businesses; professional, civic and social clubs and organizations; religious clergy; community foundations; and public or college libraries.

Remember, you must reapply for financial assistance each academic year.

STUDENT CLASSIFICATIONS

The following student definitions are used by JCC. Other schools, agencies, government organizations and financial aid sources may use different definitions.

- Full-time: 12 or more credits.
- Three-quarter time: 9-11 credits.
- Half-time: 6-8 credits. (To be eligible for loans, students must be enrolled at least half-time.)
- Less than half-time: 1-5 credits.
- Overload: 19 or more credits (requires approval by the Dean of Student Services).
- Freshman: Completion of 23 or fewer semester hours of credit.
- Sophomore: Completion of 24 or more semester hours of credit.



DETERMINING THE AMOUNT OF AID

Most financial aid is awarded to students on the basis of need: estimated expenses – tuition, books, supplies, transportation, room and board, and personal expenses – minus the family's expected contribution. Some financial aid may also be available regardless of need. Such monies may be based on a specific area of interest, academic major, talent or other category. Visit the Net Price Calculator on the JCC web site.

Note: Check your JCC email! Financial aid will send the request to you! Use e-Services to accept your financial aid award.

FINANCIAL AID RECIPIENTS – DROPS AND WITHDRAWALS

Students attending JCC as Title IV (Federal Funds) financial aid recipients who withdraw from all of their classes during the first 60



percent of the semester will be subject to an adjustment of Title IV Funds. This U.S. Department of Education calculation may result in the student owing money to the College. The return of Federal Title IV Funds will be in the following order: Federal Unsubsidized Stafford Loan, Federal Subsidized Stafford Loan, Federal PLUS Loan, Federal Pell Grant and Federal SEOG. Students should consult the Financial Aid Office prior to dropping any classes. Students will be billed for any financial obligation.

FINANCIAL AID TIMELINES

Students applying for federal assistance based on need should file the Free Application for Federal Student Aid (FAFSA) as soon as possible. For maximum consideration the federal government recommends filing your FAFSA prior to March 1. To ensure that your aid eligibility is determined before Fall registration begins, be sure to file your FAFSA and submit all required documents to the JCC Financial Aid Office early. For priority processing of financial aid and availability for student use at the start of the each semester, you should make every effort to complete applications and provide required supporting documentation by the following dates for each semester:

Fall:	July 1
Winter:	October 1
Spring:	April 1

Please refer to the financial aid web page for additional information.

Important: *Financial aid recipients must enroll in classes prior to the end of the drop/add period to receive their financial aid for the semester.*

Important: *To maintain financial aid eligibility, students must have an overall 2.0 or higher G.P.A. This includes all credits attempted.*

VETERAN AFFAIRS

All active military personnel and veterans who are receiving VA educational benefits, and their dependent family members, will receive a scholarship for the difference between their rate as determined by residence and the in-district rate. Eligibility requirements should be discussed with the VA certifying official. Please visit www.jccmi.edu/student-services/veterans for information on applying for education benefits and certification of enrollment, or contact the certifying official at 517.796.8611.



STANDARDS OF PROGRESS FOR VA BENEFIT RECIPIENTS

As required by the Veterans Administration, JCC has established and monitors the following standards of progress for students receiving VA education benefits.

- Veteran students may be certified for VA benefits only for courses required for their academic program and must progress at a rate that enables them to complete their program within the prescribed number of credits outlined in the JCC Catalog or guide sheet.
- Veteran students must have a cumulative grade point average of 2.0. Grades of 0.0 are considered unsatisfactory and students may be billed by the VA for repayment.
- Veteran students must notify the VA certifying official immediately regarding all schedule changes.
- Veteran students who have attended a college other than JCC need to have official transcripts sent to the admissions office.
- JCC notifies students by mail when they are not in compliance with the standards of progress. JCC also notifies the VA when a student is not eligible for recertification.

ON-CAMPUS STUDENT EMPLOYMENT

Student employment is one way JCC provides both financial assistance and meaningful work experience for students. In addition, student employment helps busy College departments while developing a pool of capable employees for the community. Most JCC students are eligible to be employed through the Federal Work-Study or Student Aid programs. Each program has specific enrollment requirements, which may vary each semester. Students should consider their other commitments when considering a job at one of our locations, i.e., class load, family obligations and other off-campus employment. High school students attending JCC by special permission may work on campus. JCC students interested in a position should apply through the Human Resources web site <https://jobs.jccmi.edu>.



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Chapter 3 • Registration & Records



Catalog 2011-2012



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ACADEMIC YEAR

JCC operates on a semester system. The Fall semester begins in late August or early September and ends mid-December. The Winter semester begins in early January and ends late April or early May. Commencement follows the Winter semester. The Spring semester begins in May and ends in early August. In all three semesters, classes may run for various lengths of time. Continuous enrollment/attendance means a student must attend at least one semester during an academic year.

REGISTRATION PROCEDURE

It's easy to register for classes at JCC!

Register for courses in person at any JCC location, or by mail, fax, or online. You may obtain a current course schedule on the JCC web site or by visiting or calling any JCC location. **Arrangements to pay must be made at the time of registration.**

- After completing the JCC application and completing the Course Placement requirements, new students should meet with an academic advisor at any JCC location to register.
- Guest students and high school students may also register at any JCC location.
- Returning students can register at the Student Center on the Jackson campus, at any JCC location, by mail or by fax. Online registration is available for students who meet course prerequisites and who have active JCC e-Services accounts.
- The registration period normally begins one month prior to each semester. View the schedule online by visiting e-Services on our web site.

POINTS TO REMEMBER

- It is the student's responsibility to satisfy all prerequisites prior to enrolling in a course. The College reserves the right to drop students from courses for which they do not meet the requirements.
- **Payment arrangements must be made at time of registration.** Holds are placed on the student's registration, records and transcripts until financial obligations are met.

COLLEGE CREDIT FOR PRIOR LEARNING

You may be able to get college credit demonstrating college-level competencies by using prior learning options or credit by examination. Credits awarded for prior learning are applicable for degree and certificate requirements and may be earned by the following options:

PRIOR LEARNING OPTIONS

Jackson Community College recognizes that some students enter college with proficiencies that warrant college credit. Prior learning credit for waiver or substitution of a degree requirement may be granted to students through the College Level Examination Program (CLEP), Advanced Placement (AP) and credit by examination administered by JCC faculty.

CREDIT BY EXAMINATION

Students may request credit by examination to demonstrate skills and knowledge in many courses offered by the College. The examination may be a comprehensive written exam, oral, portfolio review, lab



projects, computer programs, timed writings or any combination depending on the subject area and the policy of the academic department.

Credit by examination is designed to grant credit at JCC and may or may not transfer to other colleges or universities. Credit by examination forms are available from the appropriate department chair's office or the JCC web site. Students should discuss with the chairperson the feasibility of completing the examination. If the application for credit by examination is approved, it is assigned to a faculty member who contacts the student and provides more information about the examination.

BE AWARE OF THE FOLLOWING:

1. One attempt at credit by examination per course is allowed. A maximum of 30 credits is allowed via credit by examination.
2. Credit by examination may not be used as a method for repeating a course.
3. Credit earned as a result of the exam will not be applied to the graduation minimum of 12 JCC credit hours.
4. To receive credit by examination, a grade of 2.0 or better must be earned. Before the credit is posted to your transcript, payment must be made to the cashier at any JCC location.
5. Complete the process by paying 50 percent of the current in-district per credit hour rate.
6. Transcripts show credit only for the course as a result of the exam, not a grade.

ARTICULATION AGREEMENTS

JCC has developed a number of program articulation agreements with area career centers, high schools, and other colleges. To learn if you have taken courses that are part of an articulation agreement, be sure to ask your JCC advisor before registering for classes.

TUITION AND FEES

Total cost of attending JCC is determined by the number of billing contact hours, student fee and course fees. Please refer to the current JCC schedule of classes for tuition and fee rates in effect.

- Tuition is paid by billing contact hour. Billing contact hours are determined by instructional time spent in class, lab or clinical.
- Student Fee: This universal charge provides for facility maintenance and student support. This fee is calculated for all students by billing contact hour.

- Course fees cover costs directly related to the course. This fee is paid on a per course basis.

Tuition and fees are subject to change at any time.

RESIDENCY

Residency is based on the student's permanent address at the time of registration. International students and au pairs always pay the international rate. A Jackson County resident is defined as a student whose permanent address is within the boundaries of Jackson County. Jackson County rates are also given to:

- Students whose Jackson County employers are paying tuition and fees.
- Students who own property in Jackson County but keep their permanent address elsewhere. Dependent students whose parents or legal guardians own property in Jackson County, with proof of property tax statements or registered deeds, may be given the Jackson County rate.
- Active military personnel and veterans who are eligible for VA educational benefits, and their dependent family members, will receive a scholarship for the difference between their rate as determined by residence and the in-district rate.

CHANGE OF RESIDENCY

If you provide documentation of a change in residency before the first day of the semester, you will receive a refund for the difference between tuition rates. After the first day of the semester, any rate changes will take effect the following semester. Students who move during a semester will not have a billing adjustment for the current semester. JCC reserves the right to change a student's address as indicated by the U.S. Postal Service on returned mail. You need a driver's license or state ID and one of the following documents as proof of residency:

- Voter registration card
- Vehicle registration
- Property tax statement or registered deed
- Rental/lease agreement

JCC reserves the right to make the final decision about residency.



REFUNDS

CANCELED COURSES

A 100 percent refund is given for any courses canceled by JCC.

REFUNDS WHEN DROPPING CLASSES

To be eligible for a refund, a student must officially drop the course(s) either by completing a drop form and delivering it in person, by letter, or by fax to any JCC Student Services location, or online through e-Services before the end of the Add/Drop period of the course(s). The date the request is made determines the refund. Students receive 100 percent tuition refund for any course(s) dropped on or before the last day of the Add/Drop period for the course(s). No refunds are made after this date. No exceptions are made for students who start classes late. The Add/Drop dates are on the JCC web site. Go to e-Services, "Drop Sections." Drop dates also appear on the registration schedule bill. Students are responsible for knowing the Add/Drop dates for course(s). For assistance, call the Student Services office at 517.796.8425. For drops outside of the Add/Drop dates see Withdrawal Procedure on page 16. You are responsible for confirming the Add/Drop dates.

W (WITHDRAWAL) EXCEPTION REFUNDS

The following criteria must be met for refunds with a "W-exception" grade.

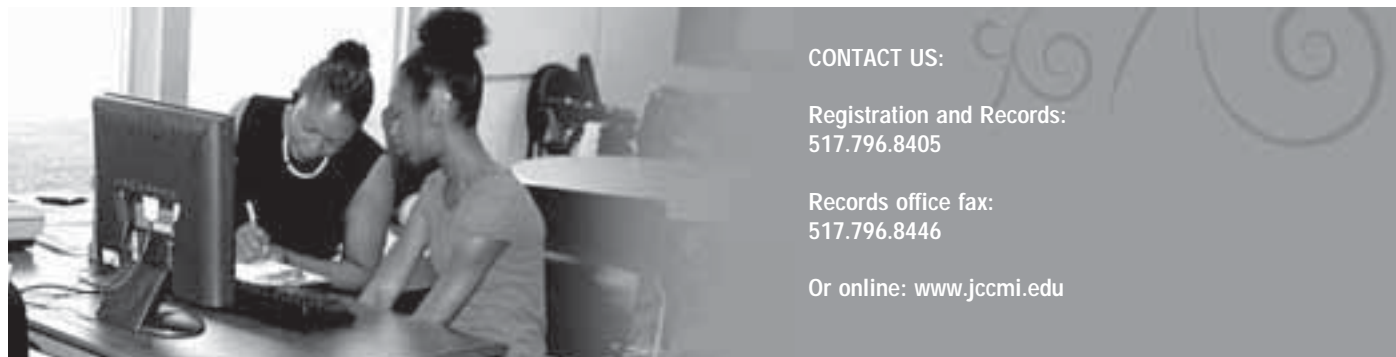
- a. Death of an immediate family member (spouse, child, parent, or legal guardian of the student.)
- b. Return to work/change in working hours that occurred after the semester began and substantially interferes with your ability to attend class. We will make every effort to find options for you to complete the semester before considering a refund.

CONTACT US:

Registration and Records:
517.796.8405

Records office fax:
517.796.8446

Or online: www.jccmi.edu



c. Medical: Provide a doctor's letter that states your condition or injury prevents you from completing classes. The statement must include the start and expected end dates of the medical condition. The doctor must verify in the statement that the student cannot attend any class as the medical condition is very serious and prevents the student from participation in employment, education, and other major life activities for the duration of the semester.

d. Call to active military duty.

Supporting third party documentation on official letterhead, signed by physician, employer or military must be attached.

Students who are financial aid recipients may not be eligible for a refund. Students receiving federal aid who withdraw completely, should contact the Financial Aid Office for details of the Return of Funds policy that is in place for all recipients of federal financial aid. Call 517.796.8410 for assistance.

- A request for a "W-exception" grade that meets the above criteria must be submitted before the last day of the course.
- Balance adjustments are limited to a percent of the amount of tuition and fees.
- All requests must be submitted in writing, from the student, with the required supporting third party documentation to:

Jackson Community College Tuition Review Committee
2111 Emmons Road
Jackson, MI 49201

ACADEMIC STANDARDS/GRADING SCALE

Grade
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0

At JCC, 2.0 or higher is considered a passing grade.



GRADE POINT AVERAGE (GPA)

GPA is a weighted average of grades for courses taken at JCC. It does not include the following:

- Grades of W (withdrawn), I (incomplete), Y (audit), P (pass), F (fail).
- Repeated courses (only the highest grade is used for calculation).
- Continuing Education Classes (CCE, CED, CEO, CEU, CFO, CSS, JTI, LTL, PDI).
- Transfer credit or other credit, such as Advance Placement (AP), departmental exam, CLEP, military service, articulation credit and experiential learning.

TO CALCULATE A GPA

1. Multiply the grade in each course by the corresponding credits to calculate honor points.
2. Divide the total number of honor points by the number of credits to figure your GPA.

Please note: Financial aid students must have a cumulative financial aid GPA of a 2.0 or better and must have successfully completed 67 percent of all attempted courses to remain in good standing for Standards of Academic Progress (SAP). Financial aid GPAs count withdrawals (Ws) and incompletes (Is) as a 0.0, unlike the academic GPA. GPAs are calculated by semester and are cumulative on the transcript.

PREREQUISITE REQUIREMENTS

Students must complete prerequisites to ensure they possess a minimum level of skills and knowledge to succeed in their college courses. Prerequisites are met when students successfully complete prerequisite courses with a 2.0 or higher, or achieve sufficient score levels in Course Placement or other assessments. Only courses with passing grades count toward graduation. Most other colleges transfer in only courses with passing grades. Many financial aid sources, including most employers, require passing grades. Additionally, earning less than a 2.0 in a class results in not being able to participate in the next level of courses in a discipline which requires this course as a prerequisite. If you attempt to register for the next course sequence and have not passed the prerequisite course, you may be dropped from that class.

ACADEMIC INTERVENTION

JCC is committed to student success. The progress of all certificate and degree-seeking students is monitored each Fall and Winter semester. If your GPA falls below a 2.0, you may be required to meet with your academic advisor prior to continued enrollment. Refer to requirements listed for specific degrees, second admissions programs, and financial aid for additional GPA and completion stipulations.

PARTICIPATION REPORTING

Participation in your courses is important to your success. Up to three times a semester, your instructor will review your progress and provide feedback, accessible via e-Services.

H— Your instructor feels you would benefit from additional assistance and has referred you to the Center for Student Success for academic tutoring.

Q— Your instructor believes that your lack of participation may prevent your success and has recommended to the registrar that you be dropped and/or withdrawn from the course.

V – Your instructor confirms that you are participating regularly.

It is the instructor's responsibility to verify participation. An instructor-initiated drop and/or withdrawal can occur through 58 percent of the course. Following the 58 percent point of the course it is your responsibility to officially withdraw.

If you are dropped, it is your responsibility to contact your instructor and request written permission for reinstatement. If permission is granted for re-registration, the written instructor's permission must accompany your new registration request. Written permission from an instructor does not ensure financial aid reinstatement.



REGISTRATION PROCESSES

DROP, NO GRADE

The Add/Drop period is the first 10 percent (10%) of the course(s). When a student drops a course during this period, no grade is assigned, and no entry is made on the student's academic record. Students are responsible for learning the Add/Drop dates for each course. This information is available on our web site and printed on the registration schedule bill.

W – WITHDRAW (WITHDRAWAL PROCEDURE)

After the Add/Drop period, a student may withdraw from a course in accordance with the dates published online. No refund will be given. A mark of "W" (withdraw) is recorded on the academic record but is not calculated in the grade point average. It may, however, affect your financial aid. After the withdrawal period for the course, a request to withdraw cannot be honored and the instructor is required to assign a grade, which is used in calculating grade point average. Students should be careful to drop or withdraw according to instructions published each semester online. Students cannot withdraw from courses using e-Services because JCC is committed to helping you know all of your options and consequences before you withdraw. It is the student's responsibility to contact Student Services to ensure all proper transactions have taken place. Do not assume that an instructor has withdrawn you or that you have been dropped for non-payment.

- Failure to pay does not mean you will automatically be dropped and/or withdrawn from your class(es). You may owe money if you do not formally drop or withdraw.

- Failure to attend does not mean you will automatically be dropped and/or withdrawn from your class(es). You may owe money if you do not formally drop or withdraw.

OTHER MARKS

I – Incomplete: The incomplete grade is designed for successful students with extenuating circumstances to allow them to complete the course requirements after the semester has ended. Students may receive an "I" if, in the opinion of the instructor, their work is sufficient in quality, but is lacking in quantity, to meet the objectives specified in the course syllabus. The course objectives are to be satisfactorily completed during the next semester or within the time agreed to by the instructor and the student. If the student does not complete the course within the designated time period the "I" grade will be replaced by the grade earned as assigned by the instructor.

The grade of "I" is not awarded to students who did not attend, or seldom attended, or to those who simply are not pleased with their final grades. Students receiving an "I" submit only the remaining work that had not been completed at the end of the semester. Students do not re-register for the course.

P/F – Pass/Fail: JCC may assign this option to some courses. Students cannot elect the option for any other classes. No honor points are awarded and the credits are not used in computing the GPA. Students are limited to two classes with a grade of P for graduation purposes. Grades of P rarely transfer to other colleges.

Y – Audit: If students wish to attend a course without receiving a grade or credit, the student must register for an audit. The audit option must be selected at registration or before the end of the Add/Drop period and the student must pay tuition and fees for the course. The student's transcript will reflect the audited courses with a mark of Y. The Y mark is not calculated into the grade point average. A change from audit to credit may be requested up to the last day of the withdrawal period. Students are responsible for exploring this option with their instructor. Students may not change a graded course to an audit after the Add/Drop period and may not use financial aid.

N – Other: Was used in a previous grading system and may appear on transcripts of returning students.

ATTENDANCE POLICY

Instructors may grade on attendance. Each instructor includes in the course syllabus a specific attendance policy for the course, clearly stating how attendance affects student grades.

GRADE REPORTS

Grade reports will be made available on e-Services. The grade report shows all classes for which a grade has been received, withdrawn (W), or audited (Y).

ACADEMIC HONESTY

Academic honesty is expected of all students. It is the ethical behavior that includes producing their own work and not representing others' work as their own, either by plagiarism, by cheating or by helping others to do so.

Plagiarism is the failure to give credit for the use of material from outside sources. Plagiarism includes but is not limited to:

- Using data, quotations, or paraphrases from other sources without adequate documentation
- Submitting others' work as your own
- Exhibiting other behaviors generally considered unethical

Cheating is obtaining answers/material from an outside source without authorization. Cheating includes, but is not limited to:

- Plagiarizing in all forms
- Using notes/books without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical

Collaboration: While JCC encourages students to collaborate in study groups, work teams, and with lab partners, each student should take responsibility for accurately representing his/her own contribution.

Consequences/Procedures: Faculty members who suspect a student of academic dishonesty may penalize the student by taking appropriate action up to and including assigning a failing grade for the paper, project, report, exam or the course itself. Instructors should document instances of academic dishonesty in writing to the academic dean.

The Office of the Academic Deans will record and track students who have been reported as having cheated. If the same student cheats in other courses, the dean will enact sanctions appropriate to level of infraction. The sanction will be selected in consultation with the involved faculty. The dean can administer consequences up to and including suspension.

Student Appeal Process: In the event of a dispute, both students and faculty should follow the conflict resolution policy. This policy is presented in Student Rights and Responsibilities handbook and the Faculty Master Agreement.



GRADE POLICY FOR REPEAT COURSES

- Students may repeat a JCC course up to three times, but credit is given only once. The highest grade is used to calculate semester and cumulative GPAs. All grades are a permanent part of the transcript. Financial aid recipients should consult with a financial aid specialist on eligibility for repeated courses.
- If the student repeats a course that transferred from another source, credit is only granted once and the JCC course will be used regardless of grade received. (Credit granted from another source that is repeated at JCC with a grade of 0.0, for example, is counted as a 0.0 for the GPA.) All entries remain a permanent part of the transcript and repeats not used in calculations are marked.

***NOTE:** Repeated classes at JCC may be calculated differently by other colleges, so be sure to check the policy of the institution under consideration.*

GRADE CHANGE REQUESTS

When applicable, the instructor will initiate a Request for Change of Grade, which must be approved by the academic dean and registrar. Questions regarding grades should be discussed with your instructor. The time limit for disputing a grade is no later than the end of the fourth week following the semester in which the course was taken.

TRANSCRIPTS

JCC maintains the permanent record and official transcripts in Student Services at the Jackson campus. All final course grades are recorded on a student's academic record. Transcripts are classified as either "official" or "issued to student."



An official transcript is stamped with the College seal and signed by the registrar. An official transcript never passes through the hands of the student. Official transcripts are sent directly to the recipient, such as another institution or employer. Official transcripts cannot be carried or mailed by the student as the recipient may not accept them as official. JCC does not release official transcripts to students. A transcript issued to a student does not include the registrar's signature or college seal. The transcript is marked "issued to student." These transcripts are recommended for the student's reference, advising and planning purposes only. Official transcripts are printed on security paper. JCC's policy on transcripts protects the integrity of the student's record and ensures its accuracy.



TRANSCRIPT REQUESTS

Transcripts are released and issued upon the student's written request. Transcript request forms are available at all JCC locations and on the JCC web site. Transcript requests must include the following: name, former names, present address, student ID number (if known), birth date, approximate date of last attendance, date of request and signature. The College cannot release any student confidential information, including a transcript, without the student's legal signature except when otherwise allowed by law.

Transcript requests are processed in a timely manner, with additional time needed for research of those records dating back five or more years or filed under a former last name(s). JCC cannot fax transcripts as it is not possible to verify the recipient.

There is no fee for processing most transcript requests. We can overnight transcripts for a delivery fee. If overnight delivery is requested, payment arrangements need to be made prior to our releasing the record. If there is a business office hold on the record for tuition, fees or repayment of student loans, JCC does not release the official transcript until the hold is released or cleared. Allow five business days to process transcript requests plus sufficient time for the U.S. Postal Service to make delivery.

STUDENT RECORDS ACCESS AND PRIVACY

Release and disclosure of student records maintained by JCC is governed by state and federal laws, which provide reasonable definitions of privacy and are subject to change.

The Family Educational Rights and Privacy Act (FERPA) of 1974 provides:

1. The right to inspect and review the student's educational records within 45 days from the day the College receives a request for access. Students should submit to the registrar a written request that identifies the record(s) they wish to inspect. The registrar will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records requested are not maintained by JCC, the registrar will advise the student.
2. The right to request an amendment to the student's educational records that the student believes is inaccurate or misleading. The requested amendment to the educational record must be made in writing citing specifically what portion of the record they want changed and specify why it is inaccurate or misleading. The College makes the decision to amend the requested educational record and the student is notified.
3. The right to limit the disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent.
4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the College to comply with the requirements of FERPA. The name and address of the office that administers FERPA is: Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue, SW, Washington, DC 20202-4605

The following exceptions are permitted under the law:

- Employees of JCC within the limitations of their need to know.
- Accrediting agencies carrying out their accreditation functions.
- Persons in compliance with a judicial order (subpoena); however, the College makes a "reasonable effort" to notify the student prior to complying with the court order.
- A person or company with whom the College has contracted (i.e. attorney, auditory, collection agency, bookstore or National Student Clearinghouse).
- In an emergency situation, in order to protect the health and safety of other students or persons.

JCC does not release any student information without the student's written consent, except in the circumstances permitted under the law.



Under the law, directory information may include: student name, address, e-mail address, date of birth, place of birth, area of study, dates of enrollment, dates of employment, degrees and awards received, previous educational institutions attended and participation in officially recognized activities, clubs and sports. A student may request, in writing, that JCC withhold all directory information. This request should be made as close to the beginning of the semester as possible, within the first 10 days of the semester. To remove this request for withholding of directory information, the student must also do so in writing. As a part of the College's instructional program improvement efforts, and to meet the requirements of the Carl D. Perkins Vocational and Technical Education Act, Section 113 and the Workforce Investment Act of 1998, Section 122, the College uses student's Social Security numbers to compile certain data for the purpose of instructional program improvement, National Student Clearinghouse, and federal, Perkins and WIA reporting.

Solomon Act: In the 1990s a federal law was passed, called the Solomon Act, which mandated that public colleges allow military recruiters on campus and provide access to student directory information. The College is obligated to give out directory information, this means names, addresses and phone numbers.

You can learn more about this at:

<http://www.law.georgetown.edu/solomon/solomon.html>
and click on Solomon Amendment I. More is available at
http://en.wikipedia.org/wiki/Solomon_Amendment.

GRADUATION AND COMMENCEMENT

An application for graduation needs to be filed for each degree or certificate. When applying for graduation, follow these guidelines:

CURRENTLY ENROLLED STUDENTS

1. Complete degree or certificate requirements from the current catalog (year of graduation), or
2. Complete degree or certificate requirements from the catalog in effect the year a student first entered JCC (the catalog of entry) or any subsequent catalog provided that the student has maintained continuous enrollment at JCC.

Note: Continuous enrollment/attendance means a student must attend at least one semester during an academic year.

PREVIOUSLY ENROLLED STUDENTS

Students have five academic years to apply for graduation from the time they complete their last JCC course. After a one year break in continuous enrollment, the current catalog will be used to verify degree requirements.

Apply for graduation by the following deadlines:

Anticipated Graduation	Application Deadline
December	October 1
May	March 1
August	June 1*

The minimum number of credits that must be taken at JCC for any degree or certificate program is 12. A minimum of 12 additional credits must be taken at JCC for a second degree while a minimum of six additional credits must be taken at JCC for a second certificate.

Only courses with a 2.0 or higher grade will count toward the degree completion.

Commencement – Participation in the commencement ceremony is encouraged. See our web page for eligibility requirements, www.jccmi.edu.

**Special due dates are posted for commencement participation.*



CATALOG OF ENTRY

A new catalog takes effect at the beginning of the academic year, the beginning of the Fall semester. Graduation requirements apply in their entirety (e.g., students cannot select specific elements of a degree/certificate program from one catalog, with other elements from another catalog).

Degree/certificate requirements may be changed during a catalog year only when the program is regulated or licensed by a government agency or other external accreditation agency, and that agency has mandated those changes. In order for JCC to provide the most current degree/certificate credentials possible, degree and certificate course requirements in a later catalog may be substituted if deemed appropriate and beneficial to the student. Any course substitutions must be approved by the department chair of the course affected, the academic dean and the registrar. In addition, in instances in which the phrase "or higher" is added to a degree/certificate requirement (i.e. certificate programs which require "MAT 131 Intermediate Algebra or higher"), the College shall define "or higher" as meaning a higher level of difficulty in terms of course content.

GRADUATION WITH HONORS

Honors are conferred at graduation to associate degree and certificate students who have achieved the following GPAs:

3.80 to 4.0 High Honors

3.5 to 3.79 Honors

3.0 to 3.49 Recognition

Honors are noted on your diploma and transcript.

serious possibilities



Chapter 4 • Services to Help You Succeed

Catalog 2011-2012



serious possibilities

CAMPUS HOUSING/CAMPUS VIEW

Demonstrating its innovation and leadership among community colleges, JCC offers students the chance to live and learn on campus with the introduction of Campus View student housing. Campus View offers student apartment living that is convenient, affordable and loaded with amenities.

Each Campus View building is comprised of 24 four-person units. Residents enjoy full furnishings, single bedrooms, wireless Internet access, a full kitchen, satellite TV and much more. The units are located on the southeast side of campus and are just a few short minutes walk from all campus buildings. Campus View is an alcohol and smoke-free environment.

For more information on Campus View and any rental inquiries, please contact the Office of Residence Life at 517.796.8656 or visit our web site, www.jccmi.edu/campusview.

**STUDENT SERVICES**

Student Services provides assistance and support to students on the Jackson campus, at the Hillsdale LeTarte Center, and at JCC @ LISD TECH. Our staff offers timely and accurate information and a complete range of walk-in services, including registration, advising and financial aid. Student Services offers extended hours at various times during the semester.

ACADEMIC ADVISING SERVICES**NEW STUDENTS**

Students new to JCC have the opportunity to meet with an academic advisor after completing the JCC application and Course Placement requirements. Advisors will help form the student's education plan based on high school transcripts, ACT/SAT or Course Placement results and employment experience.

The purpose of academic advising is to develop connections and build supportive relationships between students, faculty and staff. Academic advisors provide students with appropriate information, make referrals to campus resources, and support students in achieving their goals. Faculty advisors are best qualified to discuss career opportunities in their disciplines. They usually have the clearest understanding of their department's curriculum and may be most knowledgeable about what is required of students to be successful in their fields. In addition, JCC provides career exploration services. Make an appointment with your faculty advisor or an academic advisor in Student Services.

RETURNING STUDENTS

Advising continues throughout your JCC experience. Students are encouraged to consult with their advisor before registering for courses to determine program requirements. Advisors can help determine the courses that best fit your needs.

STUDENTS INTENDING TO TRANSFER

Transfer information is available on the JCC web site and all Student Services locations. We have viewbooks, catalogs, guide sheets, applications and scholarship information from most Michigan colleges and universities. An academic advisor can assist with web research for program information to help students select the most appropriate courses at JCC for transfer.

Students should request transfer program information from the four-year universities and colleges that are being considered. Even if it is the first semester at JCC, talk with an advisor at the intended transfer institution to be sure you are taking the right courses for the program of your choice.

EMPLOYMENT SERVICES

Jackson Community College provides employment services both on- and off-campus.

CAREER ADVISING

One-on-one career advising includes information on career planning, labor markets, occupations and educational opportunities. Individual academic advising is available to those who need career development assistance.

Jackson Campus: The Employment Services office assists JCC students and alumni with preparation for employment. Specific services available include Career Assessment, résumé consultations, interview techniques and employment opportunities including instructions to navigate the Michigan Talent Bank. Employment Services is located in the Corporate and Continuing Education Office, Justin Whiting 151.

Off-Campus: South Central Michigan Works! Service Centers, in Jackson, Lenawee and Hillsdale counties, offer assistance to all employers and job seekers. Employers seeking workers can list job openings on an Internet-based public labor exchange system. Job seekers can get assistance with résumés and post their résumés for review by employers who are recruiting employees.

Jackson County

Commonwealth Commerce Center
209 East Washington Avenue
Jackson, MI 49201
517.841.5627

Lenawee County

Human Services Building
1040 South Winter Street
Adrian, MI 49221
517.266.5627

Hillsdale County

21 Care Drive
Hillsdale, MI 49242
517.437.3381

FOUNDATION STUDIES

Foundation Studies supports each student in the development of skills to adjust to the demands of college and to succeed academically by providing support and development services, assisting faculty in curriculum development, and promoting extracurricular opportunities. For specific information on services offered through Foundation Studies, please refer to these sections in the catalog:

- Center for Student Success, page 22
- Tutoring, page 22
- Assistance for students with special needs (Accommodations), page 22
- Office of Service Learning and Civic Engagement, page 23
- Course Placement and Assessment, page 7
- Social Work Services, page 22

THE CENTER FOR STUDENT SUCCESS

Bert Walker Hall – 517.796.8415

The Center for Student Success (CSS) is here to help you succeed in your college studies both academically and personally. CSS offers a variety of services including free tutoring for enrolled students, a drop-in learning lab, the Writing Center, special software, free workshops, assistance with study skills, time management, online class orientation, homework deciphering, accommodations for students with documented disabilities, academic advising, social worker services and special events. CSS is staffed by full- and part-time faculty, peer tutors and support staff who are committed to your success.

Writing Assistance: College courses often demand strong writing skills. To ensure your success you may receive assistance with your papers, essays, lab reports, documentation of sources and other written assignments. Find help to get you started with your writing assignment including brainstorming topics, organizing ideas, writing rough drafts, editing, proofreading, citing sources and more. Reference materials, encouragement and computers are available. Both faculty and peer tutors are available on a drop-in basis or by appointment.

Tutoring: If you need help with any course, a math course, or a writing assignment, the Center for Student Success can help. Full- and part-time faculty, para-professional, certified peer tutors offer free tutoring in a variety of formats, including online tutoring, to help you succeed. We also hire tutors and train them through our College Reading and Learning Association Certified Tutor Training Program, a great opportunity to earn while you learn. Tutoring is free to JCC students. We will make every attempt to provide you with a tutor. To request a tutor or train to become one, please call us at 517.796.8415.



Computer Programs: PLATO is a program of computerized instruction that is designed to help students improve math, reading, writing and science skills. The PLATO computer program allows you to work independently or with one of our faculty at your own pace, to practice and review old skills, and to learn new ones. Call 517.796.8415 to schedule an appointment for your assessment or visit the center.

Accommodations/Students With Disabilities: If you have a learning disability, hyperactivity (ADHD), vision or hearing impairment or other disability that interferes with your learning, the Center for Student Success can provide the support you need. We also provide special seating or other reasonable accommodations for those with physical challenges. In accordance with the Americans with Disabilities Act (ADA) these disabilities must be documented within the last three years. In cases where you need to obtain appropriate documentation, we may assist you in finding the resources or by making referrals. Other reasonable accommodations may include notetakers, alternative texts, sign language interpreters, lecture taping, scribe, extended test time, oral testing, quiet testing place and others as appropriate. Academic advising for students with disabilities is available through the CSS. Assistive technology is available in the computer labs. These services are free to JCC students.

PowerPath: Having trouble with your reading? Ask about PowerPath to identify learning difficulties and help you develop a plan to succeed.

Social Work Services: We understand there are several factors that impact your ability to succeed in college. Because we are committed to your success we have licensed, certified social workers on campus two days a week. Confidential referrals can be made at any time and are free to JCC students. If you are experiencing a highly stressful situation or challenge in your life, please contact the Center for Student Success.



English as a Second Language: Assistance may be provided to those with limited English proficiency. Please contact CSS to discuss what programs may be available to you.

GED Preparation: Completing your GED may be your first step toward college. Enrollment in this program helps prepare you for the five tests that comprise the GED: language arts – writing, social studies, science, language arts – reading and mathematics. This computer-assisted program is self-paced and allows you flexibility in enrollment and study time to suit your busy schedule. The instruction is individualized, guiding you to work only on areas in which you need practice. Enroll at anytime and use the program as often as you like during the semester you enrolled.

TRIO STUDENT SUPPORT SERVICES (SSS)

The TRIO SSS program is designed to provide focused support services to low income, first-generation college students or students with disabilities. The SSS program services can increase persistence in college and academic performance for dedicated students that are accepted into the TRIO SSS program. Only 140 students are served in the program for each academic year. Support services include: customized student education and career plan, dedicated support staff, English and math specialist support, academic advising, career exploration, financial literacy budgeting and planning, exclusive workshops, transfer assistance, grant aid support and four-year college visits. Students interested in applying to participate in the TRIO SSS program can apply at the Center for Student Success or call 517.796.8415.

THE OFFICE OF SERVICE LEARNING AND CIVIC ENGAGEMENT

Service learning links hands-on service projects in the community with in-class learning. Service learning gives you an opportunity to explore careers and to increase your learning while helping to make the curriculum relevant to your life.

The mission of JCC's Office of Service Learning and Civic Engagement is to create an environment and infrastructure that facilitates and supports the integration of service learning methodology across the curriculum leading to civically engaged students.

Contact the Service Learning Office at 517.796.8415 or talk with your instructor about including a service learning component in your class.

LIBRARY

The library provides students and guests with a collection of books, magazines, videos, DVDs, books-on-tape and other materials that are current and support our academic programs. Our online catalog is available on the web using any computer with Internet access. The library shares its online catalog with the Jackson District Library (JDL). This partnership allows books and other materials to be requested from any JDL branch and sent directly to the JCC library.

The library offers access to many online databases for magazine, journal and newspaper citations. Several of these databases provide instant full-text access. Specialized databases are available covering such fields as nursing, education, science, psychology, business and sociology. Reference librarians are always available to help you find the best resources for your needs. Make use of our online reference service. The library offers an extensive interlibrary loan program. Articles, books and videos can be requested directly online or at the library.

The library is located in William Atkinson Hall, our new information technology building, on the Jackson campus. Students may check out notebook computers to use anywhere in Atkinson Hall's high-speed wireless environment. The library features breakout rooms for quiet study and group work.

Library services are also available at Hillsdale LeTarte Center and JCC @ LISD TECH. For information call 517.796.8622 or visit the JCC web site.



COMPUTER LABS

Need computer access? Drop in at JCC's open computer lab in William Atkinson Hall. Student consultants are available to assist you with up-to-date software, printers and scanners.

COMPUTER LABS AT JCC'S CAMPUSES:

- Hillsdale Computer Lab
LeTarte Center, Hillsdale, lobby or room 17
(If class not in progress).
- Lenawee Computer Lab
JCC @ LISD TECH, hours posted or call for current semester hours.

TESTING LAB

The JCC testing lab in Atkinson Hall provides applicants, students and guest students with a location to complete course placement assessments and course exams in a comfortable, secure environment for computerized tests and paper-pencil tests. Check for current hours by calling 517.796.8621 or check the JCC library web page. Students who need special accommodations due to physical impairments or learning disabilities should contact the Center for Student Success, 517.796.8415. Students with needs must make arrangements at least one week prior to taking a test or the course placement assessment.

BOOKSTORE

The JCC Bookstore and the JCC @ LISD TECH Bookstore are operated under an agreement with the Follett Higher Education Group. The bookstores stock new and used textbooks, textbook rentals, school supplies, JCC clothing, gifts, magazines, reference books and academically discounted software. The bookstores conduct book buy-back year round, however the best prices are generally offered at the end of the Fall and Winter semesters. Check the JCC schedule each semester for current bookstore hours. The JCC Bookstore is located on the first floor of the George E. Potter Center on the Jackson campus,

next to the Frank Dove Student Commons. The JCC @ LISD TECH Bookstore is located in room 212 of the JCC @ LISD TECH Center, in Adrian. Additionally, a temporary bookstore is operated at the beginning and end of each semester at the Hillsdale LeTarte Center.

For more bookstore information, please call 517.796.8440.

CAFETERIA/FOOD SERVICES - JACKSON CAMPUS

Cafeteria food service is provided by Continental Services, Inc. in the George E. Potter Center, Robert Snyder Dining Room, Monday through Thursday. To inquire about hours, call 517.783.1521. The McDivitt Cafe (in James McDivitt Hall) provides light food service Monday through Friday. Wava Joes bistro with cappuccino, fruit smoothies and light snacks is located in Atkinson Hall.

BUS TRANSPORTATION - JACKSON CAMPUS

City buses run on class days from Jackson to the Jackson campus through the Jackson Transportation Authority. Schedules and rate information are available from the Center for Student Success on the Jackson campus and on the JCC web page.

STUDENT LIFE AND CAMPUS ACTIVITIES

Jackson Community College is committed to providing students with a comprehensive educational experience that offers excellent learning opportunities inside and outside the classroom. The Office of Student Life offers students a wide variety of social and educational opportunities to enhance their learning experience and connect with peers. From Student Government and Phi Theta Kappa to athletics and the arts, Student Life at JCC provides you with the chance to get involved on campus, develop friendships and have fun.

Any group of students wishing to form a new organization or club should check with the assistant dean of student life in the Victor Cuiss Fieldhouse for assistance and guidelines on how to get started. All new student groups must meet specific guidelines set forth by the Student Government and apply for official recognition before becoming an officially sanctioned campus organization.

THE OFFICE OF STUDENT LIFE

This office operates under the supervision of the assistant dean of student life and is located in the Victor Cuiss Fieldhouse. All inquiries regarding Student Life and campus activities should be directed to the assistant dean of student life at 517.796.8455.

JACKSON COMMUNITY COLLEGE STUDENT ASSOCIATION

Every student is a member of the Jackson Community College Student Association (JCCSA). With the support of faculty, the association provides a democratic means for students to govern themselves. The association is governed by the Student Government.

STUDENT GOVERNMENT

The Student Government members act as official representatives of the student body in matters needing joint student and faculty or administration consideration. The Student Government annually allocates funds to student organizations and sets appropriate standards and guidelines to ensure that the activities of all organizations adhere to college policy and its mission. Please contact the assistant dean of student life at 517.796.8628 to learn more about Student Government.

CLUB SPORTS

A club sport is a program available to all full-time students (minimum of 12 credit hours) at JCC. This program is initiated and funded solely by the full-time students or interested parties participating in the program. The emphasis of a club activity can be recreational, instructional or competitive. Examples of club programs can be, but are not limited to volleyball, hockey, basketball and cross country. To help in the administrative and decision-making processes, all club activities are overseen by the assistant dean of student life. When participating in club activities, all members are representatives of JCC and abide by all rules and regulations set forth by the College.

JETS INTERCOLLEGIATE ATHLETICS

JCC is a member of the National Junior College Athletic Associations (NJCAA) and a member of the Michigan Community College Athletic Association (MCCAA). The MCCAA is comprised of 19 community colleges. The Jets compete in the Western Conference of the MCCAA against community colleges such as the Lansing Community College Stars, the Grand Rapids Community College Raiders and the Kellogg Community College Bruins.

JCC varsity sports include:

Women	Men
Cross Country	Cross Country
Basketball	Basketball
Softball	Baseball
Volleyball	Soccer
Soccer	Golf
Golf	

The athletics office is located in the Victor Cuiss Fieldhouse. Please call 517.796.8455 or visit www.jccmi.edu/athletics for questions regarding JCC Jets athletics. **GO JETS!**



STUDENT HONORS

PHI THETA KAPPA

The international honor society of community colleges recognizes and encourages academic excellence, and is open to any JCC student who has completed 12 undergraduate semester credit hours with a cumulative grade point average of 3.5 or above. Phi Theta Kappa provides opportunities for fellowship, scholarships, leadership development, service learning and idea exchange among scholars.

EXCELLENCE IN LEARNING AWARDS

Faculty nominates students for these awards given annually. Students who demonstrate initiative, commitment, enthusiasm, or outstanding performance in the pursuit of learning are eligible. JCC has established this award to recognize learning excellence in ways not tied to course grades because we believe good grades are not the only indicator of successful learning.

**DEAN'S LIST**

Students are recognized each semester for high academic achievement by being named to the Dean's List. The minimum requirements for being named are:

- Full-time students who complete 12 or more credits during the semester with a semester GPA of 3.5 or higher.
- Part-time students, who after completing a total of 12, 24, 36, 48, 72, 84 and 96 credit hours, have earned a cumulative GPA of 3.5 or higher.

The College sends recognition letters to students' homes and notifies local newspapers.

OFFICE OF MULTICULTURAL RELATIONS**MISSION**

"To actively promote and support diversity and multicultural education."

Jackson Community College and the Office of Multicultural Relations welcomes and encourages people from all cultural backgrounds and walks of life to experience the dynamic learning environment that JCC provides the community. Student diversity is, as defined by the JCC Office of Multicultural Relations, variables including (but not limited to) race, color, creed, religion, national origin, gender, life styles and physical abilities.

The College's efforts in developing a learning environment that embraces and promotes diversity and inclusion is a valuable indication of its commitment to providing quality educational opportunities to the community.

The Office of Multicultural Relations is responsible for monitoring, developing and implementing programs and activities that will enrich the academic process and social experience at JCC. The office is responsible for motivating and directing the college toward institutionalizing a systematic process that embraces and promotes the principles of diversity and inclusion.

The director of multicultural relations provides leadership to the college community by monitoring, implementing and advancing training programs and events focused on diversity, multicultural education and inclusion. The office monitors, supports and develops

opportunities for the college to participate as an active member in the greater Jackson, Hillsdale and Lenawee communities.

MINORITY STUDENT SERVICES

JCC is committed to providing support services to assist minority students in becoming and remaining successful college students. The director of the Office of Multicultural Relations serves as a resource for minority students, provides referrals to the appropriate services and assists in the translation of the information obtained.

The director of the Office of Multicultural Relations works with minority students to resolve student-related issues. Anyone seeking additional information regarding minority students may call 517.796.8470.

COLLEGE PREPAREDNESS PROGRAM

The Office of Multicultural Relations has been entrusted with the important responsibility of serving the needs of the College Preparedness Program (CPP), formerly known as CIP or C.A.R.E. The program is committed to providing resources for improving postsecondary opportunities for CPP youth. Students who complete CPP will earn 63 credits of tuition at JCC in addition to obtaining valuable life skills that will enrich their educational journey. For additional information contact the Multicultural Affairs office, 517.796.8470.

**FIELDHOUSE (VICTOR S. CUISS)**

The staff and faculty welcome you as a currently registered student to use the Victor Cuiss Fieldhouse during open times. The facilities include an indoor jogging track (10 laps to the mile), two full-size basketball courts, two volleyball courts, lockers for men and women and adapted lockers and showers for students with disabilities. The Victor Cuiss Fieldhouse is open to all students through the intramural program and through classes in the Health and Physical Fitness Department.

WEIGHT TRAINING AND CONDITIONING CENTER

The Weight Training and Conditioning Center, located in the Fieldhouse, provides Cybex weight conditioning equipment and aerobic conditioning options. The facility is open to all students who register for any health and physical fitness class or lifetime learning fitness class.

CHILD CARE – JACKSON CAMPUS

Child care, operated by ABC Academy, is available from 6 a.m. to 6 p.m., Monday - Friday, all year on the Jackson campus. Preschool, latch key, infant, toddler care, and free Head Start and Michigan School Readiness Program (MSRP) programs are available. Admittance is prioritized to JCC students first, JCC employees next, and then the general public. For more information call 517.768.9323 or visit www.abcacademyjackson.com.

serious possibilities



Chapter 5 • Degree Options & Requirements

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ASSOCIATE DEGREE OPTIONS AND REQUIREMENTS

JCC offers four types of associate degrees. Each degree includes general education courses as well as specific program courses. Students should select an associate degree based on your plan of study or career goal.

ASSOCIATE IN ARTS (AA)**ASSOCIATE IN SCIENCE (AS)**

Students intending to transfer to another college or university usually select one of these degree programs. Students choose from courses that prepare them for a variety of professions and academic disciplines. *Note: Students are not required to earn a degree prior to transferring but may transfer credits back to JCC to complete graduation requirements.*

ASSOCIATE IN GENERAL STUDIES (AGS)

This degree is for students who want to plan their own program of study not defined by a specific job or career. The degree's flexibility allows the creation of a unique learning experience, such as combining the student's JCC experience with other academic institutions or community organizations, to prepare for or create a specialized career option.

ASSOCIATE IN APPLIED SCIENCE (AAS)

This degree prepares students for entry into a technical or skilled occupational career immediately following JCC.

ASSOCIATE DEGREE

All associate degrees will meet the Associate Degree Outcomes (ADO) requirements (see General Education Philosophy) as approved by the College Board. No course substitutions will be allowed unless considered a higher level of an approved course (i.e., SPN 232 may substitute for the approved SPN 131).

To earn an associate degree, students must meet these requirements:

1. A minimum cumulative grade point average of 2.0 overall. (Some programs have additional grade and course requirements. Follow the guide sheet for your program and meet with an academic advisor for complete information.) **Important: only courses with a 2.0 or better will transfer to most four-year colleges and universities.**
2. A minimum grade of 2.0 in each course that applies toward a degree.
3. Completion of specific courses in a degree.
4. A minimum of 60 credits.
5. A minimum of 12 credits earned at JCC.
6. Courses identified as remedial or developmental cannot be used as credits toward degrees or certificates. These courses currently include: CIS 090, 095; ENG 080, 085, 090, 101, 102, 109, 110; MAT 010, 020, 031, 033, 035; MTH 090, 095, 098, 100, and 110; and, MTT 009. Additional courses excluded from credits toward degrees and certificates are continuing education courses (prefix CCE, CED, CEU, CFO, CJT, CSS, ESL, LTL) and courses offered through JCC's workforce training programs (prefixes JTI, PDI).

Note: As of Fall 2011, developmental courses are identified with a three-digit number beginning with a 0, such as 020, 080, 095 and only courses considered to be college level (100-level or higher) can be used to fulfill degree requirements.

7. A completed Application for Graduation for an associate degree submitted by the deadline date to Records, located in the JCC Student Center, Jackson campus, or to JCC centers. Students have five academic years to apply for graduation from the time they complete their last course at JCC. See Graduation and Commencement, page 19. Applications are available at all locations or on the JCC web site; official audits are processed by the Registrar's Office.
8. Completion of the degree requirements from any catalog of entry issued during continuous enrollment. Students who are not continuously enrolled and have completed degree requirements must meet the requirements of the catalog in effect at the time of graduation application. Students re-entering who have not completed degree requirements must follow catalog in effect at time of their re-entry date.
9. Coursework completed within a reasonable time period. This may require repeating certain essential courses, even though a passing grade was previously earned. An essential course involves material that affects skill development and successful performance and/or contains content likely to change significantly over time, as determined by appropriate academic departments.
10. A minimum of 12 additional credits beyond those credits completed for one degree are required to earn a second associate degree.
11. Multiple degrees may be conferred in the same graduation period.

CERTIFICATE

JCC offers "Certificates" that comprise 30 to 59 credits of course work. They concentrate on specific skills with fewer general education courses than an associate degree. All certificates will contain a minimum requirement of ENG 131 and MAT 131.

To earn a certificate, students must meet these requirements:

1. A minimum cumulative grade point average of 2.0 overall. (Some programs have additional grade and course requirements. Follow the guide sheet for your program and meet with an academic advisor for complete information.) **Important: only courses with a 2.0 or better will transfer to most four-year colleges and universities.**
2. A minimum grade of 2.0 in each course that applies toward a degree.
3. Completion of specific courses in a degree.
4. A minimum of 30 credits.
5. A minimum of 12 credits earned at JCC.
6. Courses identified as remedial or developmental cannot be used as credits toward degrees or certificates. These courses currently include: CIS 090, 095; ENG 080, 085, 090, 101, 102, 109, 110; MAT 010, 020, 031, 033, 035; MTH 090, 095, 098, 100, and 110; and, MTT 009. Additional courses excluded from credits toward degrees and certificates are continuing education courses (prefix CCE, CED, CEU, CFO, CJT, CSS, ESL, LTL) and courses offered through JCC's workforce training programs (prefixes JTI, PDI).

Note: As of Fall 2011, developmental courses are identified with a three-digit number beginning with a 0, such as 020, 080, 095 and only courses considered to be college level (100-level or higher) can be used to fulfill degree requirements.

7. A completed Application for Graduation for a certificate submitted by the deadline date to Records, located in the JCC Student Center, Jackson campus, or to JCC centers. Students have five academic years to apply for graduation from the time they complete their last course at JCC. See Graduation and Commencement, page 19. Applications are available at all locations or on the JCC web site; official audits are processed by the Registrar's Office.
8. Completion of the certificate requirements from any catalog of entry during continuous enrollment. Students who are not continuously enrolled and have completed certificate requirements must meet the requirements of the catalog in effect at the time of graduation application. Students re-entering who have not completed the certificate requirements must follow the catalog in effect at the time of their re-entry date.
9. Coursework completed within a reasonable time period. This may require repeating certain essential courses, even though a passing grade was previously earned. An essential course involves material that affects skill development and successful performance and/or contains content likely to change significantly over time, as determined by appropriate academic departments.
10. A minimum of six additional hours, beyond those credits completed for one certificate, are required to earn a second certificate.
11. Multiple certificates may be conferred in the same graduation period.

CONCENTRATIONS

JCC offers "Concentrations" that are a coordinated set of courses whose purpose is to enable students to efficiently achieve a specific occupational goal. Each concentration will:

1. Require no fewer than 16 and no more than 29 credit hours.
2. Provide a set of skills and knowledge to benefit students within specific career areas.
3. Serve as building blocks toward certificates or associate degrees.
4. Require students to minimally show the proficiency of ENG 085, ENG 090 and MAT 020.

To earn a concentration, students must meet these requirements:

1. A minimum cumulative grade point average of 2.0 overall. (Some programs have additional grade and course requirements. Follow the guide sheet for your program and meet with an academic advisor for complete information.) Important: only courses with a 2.0 or better will transfer to most four-year colleges and universities.
2. A minimum grade of 2.0 in each course that applies toward a degree.
3. Completion of specific courses in the concentration.
4. A minimum of 16 credits.
5. A minimum of 12 credits earned at JCC.
6. A completed Application for Graduation for the concentration submitted by the deadline date to Records, located in the JCC Student Center, Jackson campus or to any JCC center. Students have five academic years to apply for graduation from the time they completed their last course at JCC. See Graduation and Commencement, page 19. Applications are available at all locations, or the JCC web site. Official audits are processed by the Registrar's Office.

7. Completion of the concentration requirements from any catalog of entry during continuous enrollment. Students who are not continuously enrolled and have completed the concentration requirements must meet the requirements of the catalog in effect at the time of graduation application. Students re-entering who have not completed the concentration requirements must follow the catalog in effect at the time of their re-entry date.
8. Coursework completed within a reasonable time period. This may require repeating certain essential courses, even though a passing grade was previously earned. An essential course involves material that affects skill development and successful performance and/or contains content that is likely to significantly change over time, as determined by appropriate academic departments.
9. Multiple concentrations may be conferred in the same graduation period.

SKILL SETS

JCC offers "Skill Sets" that are strategically planned groupings of courses to meet the flexibility needed by external demands of employers and the existing job market. Each of these credentials will:

1. Require 15 credits or fewer.
2. Provide a set of skills and knowledge to benefit students within specific career areas.
3. Require students to minimally show the proficiency of ENG 085 and MAT 020.
4. Not eligible for federal aid (i.e. federal Pell Grants, Stafford Loans).

Other sources of funding may be available.

To earn a skill set, students must meet these requirements:

1. A minimum cumulative grade point average of 2.0 overall. (Some programs have additional grade and course requirements. Follow the guide sheet for your program and meet with an academic advisor for complete information.) Important: only courses with a 2.0 or better will transfer to most four-year colleges and universities.
2. A minimum grade of 2.0 in each course that applies toward a degree.
3. Completion of specific courses in the skill set.
4. All credits in the skill set must be earned at JCC.
5. A completed Application for Graduation for the skill set submitted by the deadline date to Records, located in the JCC Student Center, Jackson campus or to any JCC center. Students have five academic years to apply for graduation from the time they completed their last course at JCC. See Graduation and Commencement page 19. Applications are available at all locations, or the JCC web site. Official audits are processed by the Registrar's Office.
6. Completion of the skill set requirements from any catalog of entry during continuous enrollment. Students who are not continuously enrolled and have completed the skill set requirements must meet the requirements of the catalog in effect at the time of graduation application. Students re-entering who have not completed the skill set requirements must follow the catalog in effect at the time of their re-entry date.

7. Coursework completed within a reasonable time period. This may require repeating certain essential courses, even though a passing grade was previously earned. An essential course involves material that affects skill development and successful performance and/or contains content that is likely to significantly change over time, as determined by appropriate academic departments.
8. Multiple skill sets may be conferred in the same graduation period.

GENERAL EDUCATION PHILOSOPHY

A message to students from JCC faculty

General education facilitates the development of an informed and educated person who recognizes and respects the diversity of communities, thinks critically and is proficient at fundamental skills. General education engages students in active learning by providing opportunities to observe, analyze and evaluate, and to apply these skills critically to problems. General education fosters the development of responsible, ethical human beings dedicated to improving their own lives and the lives of others through work, family life, social and political action, cultural awareness and service to others.

Because JCC's vision includes a variety of educational, cultural and economic goals, the general education requirements involve both traditional intellectual pursuits and practical skill development. As the general education requirements are designed to ensure breadth and depth of knowledge, they are met through carefully designed programs of study. Programs of study help students meet these goals by addressing each of the skill areas identified in the Associate Degree Outcomes. These are skills which the JCC Board of Trustees has determined students should develop or enhance while enrolled in the College.

The Associate Degree Outcomes are:

1. Write clearly, concisely and intelligibly.
2. Speak clearly, concisely and intelligibly.
3. Demonstrate computational skills and mathematical reasoning.
4. Demonstrate scientific reasoning.
5. Understand human behavior and social systems, the principles which govern them, and their implications for the present and future.
6. Understand and appreciate aesthetic experience and artistic creativity.
7. Think critically.
8. Make responsible decisions in personal and professional contexts.
9. Work productively with others, recognizing individual contributions to group success.
10. Understand and respect the diversity and interdependence of peoples and cultures.

SUBSTITUTIONS AND WAIVERS

Students who encounter hardships while pursuing a planned educational program may request consideration of alternative courses through a substitution and/or waiver process. Each request must be reviewed and recommended by the department chair of the course under review and approved by the academic dean and registrar. Substitution and waiver guidelines and forms are available from department chairs, advisors and the Registration and Records Office. Our Board of Trustees support Associate Degree Outcomes (ADO 1-10) to ensure all JCC students receive a well-rounded general education. ADO substitutions are limited. Approved ADOs can be found in the Associate in Art, Associate in Science and Associate in General Studies degree requirements.

STUDENT ASSESSMENT AT JCC

Assessment is a vital part of the academic life at JCC. The purpose of assessment is to measure student progress in the knowledge, skills and attitudes they exhibit from their studies. Assessment is conducted during class time, at the conclusion of programs of study, and at important stages of the academic cycle on a year by year basis. Students are expected to complete a variety of assessments during their college career. These include course examinations, portfolios, attitude surveys, journals and demonstrations of skills used in occupational fields. A standardized test is administered in selected classes to measure overall student success in the achievement of basic foundational skills. Other assessments are made after students leave JCC that help faculty know the long-range effects of their teaching on student employment and the success of students who transfer to other colleges and universities. Teachers identify course learning objectives and communicate them to students in their course syllabi, in classroom materials, or in teacher-led discussions about course goals. Learning objectives are closely aligned with the Associate Degree Outcomes. Feedback from student performance on the learning objectives provides faculty with an assessment of the teaching and learning that occurs.

ACADEMIC SKILLS REQUIREMENTS

The associate degree and certificate requirements at JCC include proficiency in the academic skills of reading and writing. Similarly, associate degrees and most certificates include proficiency in mathematics. To ensure development of students' abilities in these skills, the College offers an academic skills development program.

The first phase of the program occurs upon entry to the College when students' competencies are assessed via ACT/SAT scores and/or college-administered placement assessments. For current ACT score levels, see our web page. Some programs may require a higher mathematics score. Students with prior successful college coursework may also be exempt. JCC accepts recent course placement scores from other Michigan colleges.

Writing: All JCC students seeking a degree or certificate are required to pass the college-level writing course, ENG 131: Writing Experience I or demonstrate proficiency in writing. Upon completion of the writing placement assessment, students whose results indicate a need for further development in writing must enroll in ENG 090 and successfully complete the writing post-assessment before proceeding to the required college-level writing course.

Reading: All JCC students obtaining a degree or certificate are required to demonstrate proficiency in reading. Upon completion of the reading placement assessment, students whose results indicate a need for further development in reading must enroll in ENG 080 or ENG 085.

Mathematics: All JCC students seeking a degree or certificate are required to pass a mathematics course best suited to their program of study or demonstrate math proficiency. Upon completion of the mathematics placement assessment, students whose results indicate a need for further development in mathematics must enroll in MAT 010 or MAT 020 and complete the course with at least a 2.0 grade.

FYS: First semester students enrolled in ENG 080, ENG 085, ENG 090, MAT 010 and/or MAT 020 must also enroll in a First Year Seminar (FYS) course. Some scholarship programs may require the completion of a FYS course.

Guidelines: ENG 080, ENG 085, ENG 090, ENG 101, ENG 102, ENG 109, ENG 110, MAT 010, MAT 020, MAT 031 and MAT 033 carry academic credit and grades earned are included in calculating the student's grade point average. The credits for these courses, however, constitute additional graduation requirements beyond the total number of credits required for an associate degree or certificate.

GENERAL TRANSFER – CERTIFICATE (GLTR.CERT)

This 30 credit certificate is designed for students undecided about their course of study. Upon completion of this certificate, students may request the "MACRAO Agreement Satisfied" be posted to their transcript. Many, although not all, Michigan universities and colleges allow the group of courses with the MACRAO designation to meet lower-level general education requirements.

While these courses are transferable, many universities prefer that their future students take specific courses and demonstrate competency in certain areas. Additionally, although the minimum GPA for transfer is listed as 2.0, some universities require a much higher GPA for admission into their university and almost all require a high GPA for a secondary admit program. Students should contact their transfer university and complete suggested courses and/or competencies.

Minimum credits	30
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	Yes

ENGLISH (must have 6 credits minimum)

Take the following:

- ENG 131 Writing Experience I
- ENG 132* Writing Experience II

NATURAL SCIENCE/MATH (must complete 8 credits minimum)

Take one of the following:

- MAT 131 Intermediate Algebra
- MAT 133 Introduction to Probability & Statistics
- MAT 135 Finite Mathematics
- MAT 141 Pre-Calculus
- MAT 151 Calculus I
- MAT 154 Calculus II
- MAT 251 Calculus III
- MAT 254 Differential Equations

And choose one lab science from the following:

- BIO 110 Introductory Biology
- BIO 131 General Biology
- BIO 132 Human Biology

- BIO 155 Anatomy & Physiology
- BIO 220 Microbiology
- BIO 231 General Botany
- BIO 232 General Zoology
- BIO 253 Human Anatomy and Physiology
- BIO 254 Human Anatomy & Physiology II
- CEM 131 Fundamentals of Chemistry
- CEM 132 Fundamentals of Organic & Biological Chemistry
- CEM 137 Chemistry of Life
- CEM 141 General Chemistry I
- CEM 142 General Chemistry II
- GEL 160 Introduction to Geology
- NSC 131 Contemporary Science
- PHY 131 Conceptual Physics
- PHY 151 Astronomy
- PHY 231 College Physics I
- PHY 232 College Physics II
- PHY 251 Modern University Physics I
- PHY 252 Modern University Physics II

SOCIAL SCIENCE (must complete 8 credits minimum from two or more disciplines)

- ANT 131 Cultural Anthropology
- CRJ 111 Introduction to Criminal Justice
- CRJ 117 Criminology
- ECN 231 Macroeconomics
- ECN 232 Microeconomics
- GEO 131 Physical Geography
- GEO 132 World Regions
- HIS 120 Ancient History
- HIS 131 Western Civilization to 1555
- HIS 132 Western Civilization 1555 to Present
- HIS 231 Development of the US through the Civil War
- HIS 232 Development of the US from the Civil War
- HIS 235 20th Century History
- PLS 141 American National Government
- PSY 140 Introduction to Psychology
- PSY 152 Social Psychology
- PSY 245 Infancy and Childhood
- PSY 251 Abnormal Psychology
- PSY 252 Developmental Psychology
- PSY 290 Human Sexuality
- SOC 117 Criminology
- SOC 152 Social Psychology
- SOC 231 Principles of Sociology
- SOC 235 Minority Groups in America
- SOC 236 Women in a Changing Society
- SOC 246 Marriage and Family

HUMANITIES (must complete 8 credits minimum from two or more disciplines)

- ART 111 Art History: Prehistoric to 1400
- ART 112 Art History: Renaissance to Present
- ENG 210 Introduction to Film
- ENG 236 Women in a Changing Society
- ENG 246 Short Story & Novel
- ENG 247 Poetry & Drama
- ENG 249 African-American Literature
- ENG 252 Shakespeare

ENG 254 Children Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 ENG 257 World Literature
 FRN 131 French I
 FRN 132 French II
 GER 131 German I
 GER 132 German II
 HIS 120 Ancient History
 HIS 131 Western Civilization to 1555
 HIS 132 Western Civilization 1555 to Present
 HIS 231 Development of the US through the Civil War
 HIS 232 Development of the US from the Civil War
 HIS 235 20th Century History
 HUM 131 Cultural Connections
 MUS 130 Music of Non-Western Cultures
 MUS 131 Understanding Music
 MUS 132 History of American Popular Music
 MUS 151 Music Theory I
 MUS 152 Music Theory II
 PHL 231 Introduction to Philosophy
 PHL 232 Logic
 PHL 243 World Religions
 SPN 131 Elementary Spanish I
 SPN 132 Elementary Spanish II
 SPN 231 Intermediate Spanish I
 SPN 232 Intermediate Spanish II
 THR 116 Introduction to Theatre

**Please note: ENG 201 Advanced Composition (3 credits) is a by-invitation-only English course that may be substituted for ENG 132 in completing this degree.*

ASSOCIATE IN ARTS (ARTS.AA)

Minimum credits	60
Minimum grade in all courses	2.0
Minimum cumulative GPA	2.0
Minimum JCC credits	12

NOTE: Only courses with a 2.0 or better transfer to most four-year colleges and universities. To complete the MACRAO Articulation Agreement, students must plan their courses carefully. Completion of the Associate in Arts degree does NOT guarantee the MACRAO designation.

This degree is designed for students who plan to transfer to a four-year college or university to pursue a bachelor's degree. It is selected by students planning to pursue a career in such fields as business, education, psychology and social work.

GENERAL EDUCATION REQUIREMENTS

ADO 1: Write clearly, concisely and intelligibly (6 credits)

Take the following:

ENG 131 Writing Experience I

Choose one of the following:

ENG 132 Writing Experience II

ENG 201 Advanced Composition

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communications Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Choose one of the following:

MAT 131 Intermediate Algebra

MAT 133 Introduction to Probability & Statistics

MAT 135 Finite Mathematics

MAT 141 Pre-Calculus

MAT 151 Calculus I

MAT 154 Calculus II

ADO 4: Demonstrate scientific reasoning (8-9 credits)

Choose two of the following from two different disciplines:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Human Anatomy & Physiology

BIO 220 Microbiology

BIO 231 General Botany

BIO 232 General Zoology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics I



ADO 5: Understand human behavior and social systems (8-9 credits)
Choose two or three of the following from two different disciplines to equal at least 8 credits:

ECN 231 Macroeconomics
ECN 232 Microeconomics
HIS 131 Western Civilization to 1555
HIS 132 Western Civilization 1555 to Present
HIS 231 Development of the US through the Civil War
HIS 232 Development of the US from the Civil War
HIS 235 20th Century History
PLS 141 American National Government
PSY 140 Introduction to Psychology
PSY 152 Social Psychology
PSY 245 Infancy and Childhood
PSY 251 Abnormal Psychology
PSY 290 Human Sexuality
SOC 152 Social Psychology
SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (9 credits)

Choose three of the following from two different disciplines:

ART 111 Art History: Prehistoric to 1400
ART 112 Art History: Renaissance to Present
ENG 210 Introduction to Film
ENG 246 Short Story & Novel
ENG 247 Poetry & Drama
ENG 252 Shakespeare
ENG 254 Children's Literature
ENG 255 American Literature – 19th Century
ENG 256 American Literature – 20th Century
MUS 131 Understanding Music
THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness
HPF 186 Weight Training and Wellness
HPF 277 Stress Management
HPF 283 Managing Stress and Holistic Health
PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures (3-4 credits)

Choose one of the following:

ANT 131 Cultural Anthropology
ENG 236 Women in Changing Society
ENG 249 African-American Literature
ENG 257 World Literature
FRN 131 French I or higher
GEO 132 World Regions
GER 131 German I or higher

HIS 125 African-American History
HUM 131 Cultural Connections
MUS 130 Music of Non-Western Cultures
PHL 243 World Religions
PLS 262 International Relations
SOC 235 Minority Groups in America
SOC 236 Women in Changing Society
SPN 131 Spanish I or higher

PROGRAM REQUIREMENTS

Additional courses** so that total degree equals 60 credits: Plan to visit an academic advisor to obtain a guide sheet and/or discuss requirements for selected program of study. Students are encouraged to choose courses that transfer as equivalent credit to four-year colleges and universities. Students are responsible to see that courses taken meet the requirements for their chosen program of study.

*** Courses identified as remedial or developmental cannot be used as credits toward degrees or certificates. These courses currently include: CIS 090, 095; ENG 080, 085, 090, 101, 102, 109, 110; MAT 010, 020, 031, 033, 035; MTH 090, 095, 098, 100, and 110; and, MTT 009.*

Additional courses excluded from credits toward degrees and certificates are continuing education courses (prefix CCE, CED, CEU, CFO, CJT, CSS, ESL, LTL) and courses offered through JCC's workforce training programs (prefixes JTI, PDI).

If the transfer college or university of your choice is a MACRAO signator, it is recommended that you complete the requirements of The MACRAO Articulation Agreement (see page 39).



PRE-PROFESSIONAL SCIENCE CERTIFICATE (PPSC.CERT)

The Pre-Professional Science Certificate prepares students to transfer to four-year institutions either as science majors or as pre-professional students (pre-vet, pre-med, pre-dental, physical and occupational therapy, optometry, pharmacy, physician's assistant, etc.). Certificate graduates could also find employment as laboratory technicians. The certificate fulfills most of the first year academic entrance requirements for pre-professional programs. Students should verify information with their transfer institutions.

Minimum credits	30
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO agreement	No

GENERAL EDUCATION REQUIREMENTS – (10 credits)

Take the following:

ENG 131 Writing Experience I

Choose one of the following:

MAT 141 Pre-Calculus

MAT 151 Calculus I

Choose one of the following: (Depending on professional goals or transfer institution requirements)

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ECN 231 Macroeconomics

ECN 232 Microeconomics

PHL 232 Logic

PLS 141 American National Government

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

PRE-PROFESSIONAL SCIENCE CORE REQUIREMENTS – (20 credits)

Choose four of the following: (Depending on professional goals or transfer institution requirements)

BIO 131 General Biology

CEM 141 General Chemistry I

CEM 142 General Chemistry II

MAT 133 Statistics

MAT 151 Calculus I

or MAT 154 Calculus II

PHY 231 College Physics I

or PHY 251 Modern University Physics I

Choose one of the following: (Depending on professional goals or transfer institution requirements)

BIO 155 Human Anatomy & Physiology

BIO 231 General Botany

BIO 232 General Zoology

BIO 253 Human Anatomy and Physiology I

BIO 254 Human Anatomy and Physiology II

BIO 220 Microbiology

CEM 241 Organic Chemistry I

FUNDAMENTALS OF ENGINEERING CERTIFICATE (FUE.N.CERT)

The Fundamentals of Engineering Certificate prepares students to transfer to, or enroll in, four-year institutions as engineering majors. The certificate fulfills many of the first two years of academic requirements for engineering programs. Certificate graduates could also find employment as engineering technicians. While students should verify information with their transfer institutions, these students are advised by mathematics and engineering faculty members according to their specific program goals for the best transfer options.

Minimum credits	41
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (6 credits)

Take the following:

ENG 131 Writing Experience I

ENG 132 Writing Experience II

PROGRAM CORE REQUIREMENTS – (35 credits)

Take the following:

CPS 177 Programming in C++

CEM 141 General Chemistry I

MAT 151 Calculus I

MAT 154 Calculus II

MAT 251 Calculus III

MAT 254 Differential Equations

PHY 251 Modern University Physics I

PHY 252 Modern University Physics II



ASSOCIATE IN SCIENCE (SCIE.AS)

Minimum credits	60
Minimum grade in all courses	2.0
Minimum cumulative GPA	2.0
Minimum JCC credits	12

NOTE: Only courses with a 2.0 or better transfer to most four-year colleges and universities. To complete the MACRAO Articulation Agreement, students need to plan their courses carefully. Completion of the Associate in Science degree does NOT guarantee the MACRAO designation.

This degree is designed for students who plan to transfer to a four-year college or university to pursue a bachelor's degree. It is selected by students planning to pursue a career in engineering, medicine, health sciences and other science related professions.

GENERAL EDUCATION REQUIREMENTS

ADO 1: Write clearly, concisely and intelligibly (6 credits)

Take the following:

ENG 131 Writing Experience I

Choose one of the following:

ENG 132 Writing Experience II

ENG 201 Advanced Composition

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Take the following:

COM 231 Communication Fundamentals

ADO 3: Demonstrate computational skills and mathematical reasoning (4-5 credits)

Choose one of the following:

MAT 141 Precalculus

MAT 151 Calculus

MAT 154 Calculus II

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory to Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 231 General Botany

BIO 232 General Zoology

BIO 220 Microbiology

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics

ECN 232 Microeconomics

HIS 131 Western Civilization to 1555

HIS 132 Western Civilization 1555 to Present

HIS 231 Development of the US through the Civil War

HIS 232 Development of the US from the Civil War

HIS 235 20th Century History

PLS 141 American National Government

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures (3-4 credits)

Choose one of the following:

ANT 131 Cultural Anthropology

ENG 236 Women in Changing Society

ENG 249 African-American Literature

ENG 257 World Literature I

FRN 131 French I or higher

GEO 132 World Regions

GER 131 German I or higher

HIS 125 African-American History

HUM131 Cultural Connections

PHL 243 World Religions

PLS 262 International Relations

MUS 130 Music of Non-Western Cultures

SOC 235 Minority Groups in America

SOC 236 Women in Changing Society

SPN 131 Spanish I or higher

NATURAL SCIENCE – (16 credits)

(At least one course must be from a different discipline than taken in ADO 4.)

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Human Anatomy & Physiology
 or BIO 253 Human Anatomy and Physiology I
 BIO 220 Microbiology
 BIO 231 General Botany
 BIO 232 General Zoology
 CEM 131 Fundamentals of Chemistry
 CEM 132 Fundamentals of Organic and Biological Chemistry
 CEM 137 Chemistry of Life
 CEM 141 General Chemistry I
 CEM 142 General Chemistry II
 CEM 241 Organic Chemistry I
 CEM 242 Organic Chemistry II
 GEL 160 Introduction to Geology
 MAT 151 Calculus I
 MAT 154 Calculus II
 MAT 251 Calculus III
 MAT 254 Differential Equations
 PHY 131 Conceptual Physics
 PHY 151 Astronomy
 PHY 231 College Physics I
 PHY 232 College Physics II
 PHY 251 Modern University Physics I
 PHY 252 Modern University Physics II

Courses cannot be counted toward both general education and additional degree requirements.

PROGRAM REQUIREMENTS

Additional courses** so that total degree equals 60 credits. Plan to visit an academic advisor to obtain a guide sheet and/or to discuss requirements for your selected program of study. Students are encouraged to choose courses that transfer as equivalent credit to four-year colleges and universities. Students are responsible to see that courses taken meet the requirements for their chosen program of study.

***Courses identified as remedial or developmental cannot be used as credits toward degrees or certificates. These courses currently include: CIS 090, 095; ENG 080, 085, 090, 101, 102, 109, 110; MAT 010, 020, 031, 033, 035; MTH 090, 095, 098, 100, and 110; and, MTT 009. MTH 120 is also excluded from fulfilling the Associate in Science Degree requirements.*

Additional courses excluded from credits toward degrees and certificates are continuing education courses (prefix CCE, CED, CEU, CFO, CJT, CSS, ESL, LTL) and courses offered through JCC's workforce training programs (prefixes JTI, PDI).

GENERAL EDUCATION – CERTIFICATE (GLED.CERT)

This 30-credit program, designed for students intending to pursue an associate degree from Jackson Community College, documents the completion of general education requirements. It is not intended for undecided transfer students. Undecided transfer students should complete the General Transfer Certificate.

Minimum credits	30
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS

Take the following: (7 credits)

ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher

Choose one of the following: (3 credits)

ENG 132 Writing Experience II
 ENG 232 Technical & Business Writing
 ENG 201 Advanced Composition

Choose one of the following: (3 credits)

COM 231 Communication Fundamentals
 COM 240 Interpersonal Communication

Choose one of the following: (1 credit)

HPF 160 Wellness
 HPF 186 Weight Training and Wellness
 HPF 277 Stress Management
 HPF 283 Managing Stress and Holistic Health
 PHL 236 Ethics

Choose one of the following: (4 credits)

BIO 110 Introductory Biology
 BIO 131 General Biology
 BIO 132 Human Biology
 BIO 155 Human Anatomy & Physiology
 BIO 253 Human Anatomy and Physiology I
 BIO 220 Microbiology
 CEM 141 General Chemistry I
 GEL 160 Introduction to Geology
 PHY 151 Astronomy
 PHY 231 College Physics I
 PHY 251 Modern University Physics I

Choose one of the following: (3 credits)

ECN 231 Macroeconomics
 ECN 232 Microeconomics
 HIS 131 Western Civilization to 1555
 HIS 132 Western Civilization 1555 to Present
 HIS 231 Development of the US through the Civil War
 HIS 232 Development of the US from the Civil War
 HIS 235 20th Century History
 PLS 141 American National Government
 PSY 140 Introduction to Psychology
 SOC 231 Principles of Sociology

Choose one of the following: (3 credits)

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

Choose one of the following: (3 credits)

ANT 131 Cultural Anthropology
 ENG 236 Women in Changing Society
 ENG 249 African-American Literature
 ENG 257 World Literature I
 FRN 131 French I or higher
 GEO 132 World Regions
 GER 131 German I or higher
 HIS 125 African-American History
 HUM 131 Cultural Connections
 PHL 243 World Religions
 PLS 262 International Relations
 MUS 130 Music of Non-Western Cultures
 SOC 235 Minority Groups in America
 SOC 236 Women in Changing Society
 SPN 131 Spanish I or higher

ELECTIVES

Choose from the following courses to reach 30 credits:

ACC 211, ACC 231, ART 101, BUA 100, CIS 101, DMS 100, EMS 110,
 HOC 130, MOA 120

ASSOCIATE IN GENERAL STUDIES (GEST.AGS)

Minimum credits 60
 Minimum grade in all courses 2.0
 Minimum cumulative GPA 2.0
 Minimum JCC credits 12

NOTE: Only courses with a 2.0 or better transfer to most four-year colleges and universities. If students want to complete the MACRAO Articulation Agreement, they need to plan their courses carefully. Completion of the Associate in General Studies degree does not guarantee the MACRAO designation.

This degree is adapted to a student's needs, interests and capabilities.

ADO 1: Write clearly, concisely and intelligibly (6 credits)

ENG 131 Writing Experience I
 Choose one of the following:
 ENG 132 Writing Experience II
 ENG 232 Technical & Business Writing
 ENG 201 Advanced Composition

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:
 COM 231 Communication Fundamentals
 COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Choose one of the following:
 MAT 131 Intermediate Algebra
 MAT 133 Introduction to Probability and Statistics
 MAT 135 Finite Mathematics
 MAT 141 Precalculus
 MAT 151 Calculus
 MAT 154 Calculus II

ADO 4: Demonstrate scientific reasoning (8-10 credits)

Choose two of the following from two different disciplines:

BIO 110 Introductory Biology
 BIO 131 General Biology
 BIO 132 Human Biology
 BIO 155 Human Anatomy & Physiology
 BIO 220 Microbiology
 BIO 253 Human Anatomy and Physiology I
 CEM 131 Fundamentals of Chemistry
 CEM 137 Chemistry of Life
 CEM 141 General Chemistry I
 GEL 160 Introduction to Geology
 NSC 131 Contemporary Science
 PHY 131 Conceptual Physics
 PHY 151 Astronomy
 PHY 231 College Physics I
 PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (6-8 credits)

Choose two of the following:
 ECN 231 Macroeconomics
 ECN 232 Microeconomics
 HIS 131 Western Civilization to 1555



HIS 132 Western Civilization 1555 to Present
 HIS 231 Development of the US through the Civil War
 HIS 232 Development of the US from the Civil War
 HIS 235 20th Century History
 PLS 141 American National Government
 PSY 140 Introduction to Psychology
 PSY 152 Social Psychology
 PSY 245 Infancy and Childhood
 PSY 251 Abnormal Psychology
 PSY 252 Developmental Psychology
 PSY 290 Human Sexuality
 SOC 152 Social Psychology
 SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (6 credits)

Choose two of the following from two different disciplines:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness
 HPF 186 Weight Training and Wellness
 HPF 277 Stress Management
 HPF 283 Managing Stress and Holistic Health
 PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures (3-4 credits)

Choose one of the following:

ANT 131 Cultural Anthropology
 ENG 236 Women in Changing Society
 ENG 249 African-American Literature
 ENG 257 World Literature
 FRN 131 French I or higher
 GEO 132 World Regions
 GER 131 German I or higher
 HIS 125 African-American History
 HUM 131 Cultural Connections
 PHL 243 World Religions
 PLS 262 International Relations
 MUS 130 Music of Non-Western Cultures

SOC 235 Minority Groups in America
 SOC 236 Women in Changing Society
 SOC 246 Marriage and Family
 SPN 131 Spanish I or higher

PROGRAM REQUIREMENTS

Additional courses** so that total degree equals 60 credits.
 Plan to see an academic advisor to discuss requirements for your selected program of study.

***Courses identified as remedial or developmental cannot be used as credits toward degrees or certificates. These courses currently include: CIS 090, 095; ENG 080, 085, 090, 101, 102, 109, 110; MAT 010, 020, 031, 033, 035; MTH 090, 095, 098, 100, and 110; and, MTT 009*

Additional courses excluded from credits toward degrees and certificates are continuing education courses (prefix CCE, CED, CEU, CFO, CJT, CSS, ESL, LTL) and courses offered through JCC's workforce training programs (prefixes JTI, PDI).

ASSOCIATE IN APPLIED SCIENCE

This degree is recommended for students who plan to enter a specific occupation upon graduation from JCC.

DEGREE, ELECTIVE AND RELATED REQUIREMENTS

See an academic advisor to obtain a guide sheet and to discuss requirements for your selected program of study. Degree requirements are also available on our web site.

IMPORTANT INFORMATION FOR TRANSFER STUDENTS

You may be able to earn as much as half your bachelor's degree program (freshmen and sophomore years) at JCC. A bachelor's degree at most four-year colleges and universities requires 124 semester credit hours, and most colleges accept 60-64 credits from JCC. Some allow students to transfer more credits but still require about 60 hours to be taken at their institution.

You can decide whether to earn an associate degree from JCC before transferring. Transfer students who wish to earn a degree usually pursue an Associate in Arts or an Associate in Science. Colleges with completion or fast-track degree programs for working adults may allow students to transfer all the credits earned from an Associate in Applied Science degree. Others may accept up to 90 credits earned at JCC and require an additional 30 credit hours. In other programs, it may be to the students advantage to complete the MACRAO Articulation Agreement (see page 39).

Earning a degree from JCC does not automatically qualify students to enter as a junior at the transfer institution. Four-year institutions reserve the right to evaluate each course completed at JCC for transfer credit.

The transferability of courses depends on:

- The intended transfer college.
- The program of study, i.e., the major and/or minor(s).
- The grade received in the JCC course (2.0 is minimum acceptable grade point).
- Whether the transfer college has an equivalent course.

- The level of the course (e.g. an intermediate algebra course may be acceptable for one program, but not for others that require higher levels of mathematics).

Students are encouraged to keep the syllabi and course materials (including quizzes/tests, notes from courses, and names/authors of texts) of all courses they intend to transfer. Transfer courses are formally articulated with about 20 four-year colleges and universities in Michigan and recognized by other colleges and universities throughout the United States.

TOOLS TO HELP TRANSFER STUDENTS

Each transfer institution has its own requirements for admission, majors, general education, and second admit programs. Requirements are stated in the transfer college's catalog or you can find additional information on JCC's web site. General guidelines are available to help students choose courses that transfer to their preferred college. Program guide sheets are available that list JCC courses that meet general education and specific program requirements at various senior institutions. Guide sheets are available in the Student Center on JCC's Jackson campus, JCC @ LISD TECH, Hillsdale LeTarte Center and on the web site.

TRANSFER PROCEDURE - A CHECKLIST

Review the following checklist at least a year prior to transferring; JCC suggests starting in your first semester.

1. See a JCC academic advisor.
2. Decide on the school to which you intend to transfer. Colleges/universities vary in requirements.
3. Decide on a program of study or major. JCC academic advisors provide program guide sheets outlining which courses to take. Also, request a catalog from your intended transfer college.
4. Visit transfer colleges/universities and talk with staff and students.
5. Apply for transfer admission well in advance of the anticipated date of transfer. Applications are available from the transfer institution.
6. Request official transcripts to be mailed to each college or university you plan to attend. Transcripts are only accepted if they are mailed directly by the College and have the official seal. Request JCC transcripts from the Registrar's Office in writing.
7. Complete the appropriate financial aid application materials. Financial assistance is not awarded until the student is accepted by the institution. Request financial aid transcripts from each previous institution attended, regardless of whether or not you ever applied for financial aid from that college or university.

SPECIAL NOTE ON FOREIGN LANGUAGE REQUIREMENTS

Some four-year colleges and universities require competency in a foreign language equivalent to two years of college study. Students transferring to an institution requiring competency in a foreign language should consider meeting this requirement before transferring.

SECOND ADMIT PROGRAMS

Some programs at four-year institutions require more than the general college admissions requirements. For instance, even though a student may be accepted by Michigan State University, he/she will need to fulfill additional requirements before being accepted into the College of Education. To find out about entry standards and application deadlines, check with the specific academic department (e.g. education, business, engineering) at the transfer institution or check their college catalog.

PRE-PROFESSIONAL PROGRAMS

Students interested in pursuing curricula such as law, medicine, dentistry and other advanced degrees may choose to enroll in pre-professional programs at JCC (pre-law, premedical, pre-dental, etc.) Follow the sequence of courses recommended by the transfer institution. Entrance tests required for professional degrees – GMAT, GRE, MCAT, LSAT and others – are usually taken prior to the senior year in college. JCC students should check on the availability of preparation coursework at the transfer institution.



MACRAO ARTICULATION AGREEMENT WITH COLLEGES & UNIVERSITIES

The Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Articulation Agreement facilitates the transfer of students from community colleges to four-year colleges and universities in Michigan. By carefully choosing courses, students may obtain an associate degree from JCC and complete the MACRAO Articulation Agreement. However, students do not need to obtain a degree to earn the MACRAO designation. If students meet all the requirements of the agreement, they should contact Registration and Records Office and request the MACRAO designation on their transcripts.

The following colleges participate to some degree with JCC in the MACRAO Articulation Agreement:

Adrian College
 Albion College
 Alma College
 Andrews College
 Aquinas College
 Baker College
 Central Michigan University
 Cleary University
 Davenport University
 Eastern Michigan University
 Ferris State University
 Grand Valley State University
 Hope College
 Kettering University
 Lake Superior State University
 Lawrence Technological University
 Madonna University
 Marygrove College
 Northern Michigan University
 Oakland University
 Olivet College
 Saginaw Valley State University
 Spring Arbor University
 Western Michigan University

REQUIREMENTS OF THE MACRAO ARTICULATION AGREEMENT

Minimum grade 2.0 for each course

Note: This list reflects only current courses. The Registrar's Office maintains a historical listing of courses that are accepted as part of MACRAO.

ENGLISH COMPOSITION (6 credits)

English (ENG) 131 and 132*

NATURAL SCIENCE

(8 credits total from two disciplines; one must be laboratory science)

Biology (BIO) 110, 131, 132, 155, 220, 231, 232, 253, 254

Chemistry (CEM) 131, 132, 137, 141, 142

Geology (GEL) 160

Mathematics (MAT) 131, 133, 135, 141, 151, 154, 251, 254

Natural Science (NSC) 131

Physics (PHY) 131, 151, 231, 232, 251, 252

SOCIAL SCIENCE

(8 credits total from two disciplines)

Anthropology (ANT) 131

Criminal Justice (CRJ) 111, 117

Economics (ECN) 231, 232

Geography (GEO) 131, 132

History (HIS) 120, 131, 132, 231, 232, 235

Psychology (PSY) 140, 152, 245, 251, 252, 290

Political Science (PLS) 141

Sociology (SOC) 117, 152, 231, 235, 236, 246, 251

HUMANITIES

(8 credits total from two disciplines)

Art (ART) 111, 112

English (ENG) 210, 236, 246, 247, 249, 252, 254, 255, 256, 257

French (FRN) 131, 132

German (GER) 131, 132

History (HIS) 120, 131, 132, 231, 232, 235

Humanities (HUM) 131

Music (MUS) 130, 131, 132, 151, 152

Philosophy (PHL) 231, 232,

Spanish (SPN) 131, 132, 231, 232

Theatre (THR) 116

**Please note: ENG 201 Advanced Composition (3 credits) is a by invitation only English course that may be substituted for ENG 132 in completing MACRAO.*

serious possibilities



Chapter 6 • JCC Career Pathways



Catalog 2011-2012



serious possibilities

At JCC, academic areas are organized into six career pathways to address the variety of career and training options in related fields. Within each career pathway, students can choose between certificate and associate degree programs designed to provide skills for immediate employment or job advancement. Each career pathway also offers several transfer programs for students who plan to pursue advanced degrees at four-year colleges or universities. Based on their career goals, JCC students can find a career pathway that matches their knowledge, skills and attributes. The six career pathways are:

- Arts & Communication
- Business, Management, Marketing & Technology
- Engineering/Manufacturing & Industrial Technology
- Health Sciences
- Human Services
- Natural Resources & Agriscience

Jackson Community College has published this catalog for information purposes only and its contents do not constitute a contract between this institution and prospective or enrolled students. The information contained in this general College catalog reflects the current curricula, policies and regulations of the College. However, these are subject to change at any time by action of the Board of Trustees or the administration. The information is generally believed to be accurate, but the College disclaims liability for inadvertent errors or omissions.

ARTS AND COMMUNICATION CAREER PATHWAY

This pathway includes careers related to the humanities and the performing, visual, literary and media arts. This career path may include careers in writing, journalism, web design, foreign language, radio and television broadcasting and public relations.

DEGREES/CERTIFICATES

Visual Communication

- Graphic Design
- Web Design

TRANSFER PROGRAMS IN THE ARTS & COMMUNICATION PATHWAY

The first two years of a student's college education usually consist of general education courses, introductory courses in a major and/or program of study and selected electives. Refer to page 39 for additional information on transfer and MACRAO. Academic advisors will assist students in planning their transfer program. They can also provide transfer guide sheets indicating JCC courses that meet the requirements of various programs of study at four-year colleges. Sample curricula for a few popular transfer programs are included.

- Art
- English
- History
- Music
- Theatre

STUDIO ART – CERTIFICATE (STAR.CERT)

The Studio Art Certificate provides students with the foundational skills to expand their portfolio and helps equip them for application to fine arts degree programs or a career in the arts. The curriculum encourages individual creativity and expression while emphasizing the development of basic studio skills.

Typical job opportunities are: advertising artist, art consultant, artist, auto detailer/pin-stripper, billboard artist, calligrapher, cartoonist, CD/record cover designer, courtroom sketcher, decorator, display designer, fashion artist/designer, graphic designer, illustrator, magazine/catalog illustration, mural artist, newspaper artist, publication design and tattoo artist.

This program also consists of the foundational courses needed for an associate degree.

Minimum credits	31
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (10 credits)

Take the following:

- COM 231 Communication Fundamentals
- ENG 131 Writing Experience I
- MAT 131 Intermediate Algebra or higher

STUDIO ART CORE REQUIREMENTS – (15 credits)

Take the following:

- ART 101 Two-Dimensional Design
- ART 103 Drawing I: Foundations
- ART 112 Art History: Renaissance to Present
- ART 121 Ceramics I
- ART 201 Three-Dimensional Design

ELECTIVES – (6 credits)

Choose 6 credits from the following:

- ART 111 Art History: Prehistoric to 1400
- ART 122 Ceramics II
- ART 137 Digital Photography I
or CIS 137 Digital Photography I
- ART 152 Painting I: Design & Color
- ART 205 Drawing II: Figure & Composition
- ART 240 Printmaking
- CIS 134 Graphic Imaging



TECHNICAL THEATRE – CERTIFICATE (TETH.CERT)

This program prepares students through coursework and hands-on experience for work in technical theater. The certificate includes a range of topics designed to give students experience in basic skills and knowledge to work behind the scenes in theatre or other venues.

Typical job opportunities are exhibit/display designer, lighting designer, lighting operator, scene painter, stage/set designer, stage manager, and visual/sound effects. This program also consists of the foundational courses needed for an associate degree.

Minimum credits	31
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (13 credits)

Take the following:

COM 231 Communication Fundamentals
 ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher
 THR 116 Introduction to Theatre

TECHNICAL THEATRE CORE REQUIREMENTS – (18 credits)

Take the following:

THR 102 Theatre Activities
 THR 131 Stagecraft I
 THR 134 Stagecraft II
 THR 145 Fundamentals of Acting I
 THR 201 Backstage Certification

Choose two courses from the following:

THR 151 Make-Up for Stage and Video
 THR 241 Lighting for Stage and Video
 THR 242 Sound for Stage and Video

THEATRE PERFORMANCE – CERTIFICATE (THPR.CERT)

This program gives students foundational skills and prepares them through coursework, hands-on experience, in class and workshop performances for work in the performance of live theatre and its commercial applications, as well as equips them for advanced degree programs. The certificate includes a wide range of topics designed to encourage individual creativity while emphasizing the practical knowledge required for success.

Typical job opportunities include, but are not limited to: actors, directors, voice-over artists, drama teachers, singers, dancers, make-up assistants and playwrights in live theatre and commercial venues. This certificate also consists of the foundational courses needed for an associate degree.

Minimum credits	33
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (13 credits)

Take the following:

COM 231 Communication Fundamentals
 ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher
 THR 116 Introduction to Theatre

THEATRE PERFORMANCE CORE REQUIREMENTS – (20 credits)

Take the following:

THR 131 Stagecraft I
 THR 145 Fundamentals of Acting I
 THR 146 Fundamentals of Acting II
 THR 151 Make-Up for Stage and Video
 THR 216 Voice for the Actor
 THR 260 Introduction to Directing

VIDEO PRODUCTION – CERTIFICATE (VIPR.CERT)

This program prepares students through course work and hands-on experience for work in video production. The certificate includes a range of courses designed to give students experience in basic skills and knowledge to work in digital video. Typical job opportunities are advertising, camera operator, video production, independent filmmaker, lighting technician, audio mixer, teleprompter operator, video editor and video technician. This program also consists of the foundational courses needed for an associate degree.

Minimum credits	31
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (10 credits)

Take the following:

COM 231 Communication Fundamentals
 ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher

VIDEO PRODUCTION CORE REQUIREMENTS – (21 credits)

Take the following:

ENG 210 Introduction to Film
 THR 131 Stagecraft I
 VID 101 Video Production I
 VID 120 Video Production II

Take one course from the following:

ART 103 Drawing I: Foundations
 CIS 134 Graphic Imaging (Adobe® Photoshop®)

Take two courses from the following:

THR 151 Make-Up for the Stage and Video
 THR 241 Lighting for Stage and Video
 THR 242 Sound for Stage and Video



DIGITAL PHOTOGRAPHY – CERTIFICATE (DIPH.CERT)

The Digital Photography Certificate will provide students with the foundational skills to expand their photography portfolio and help them develop skills needed to apply to a fine arts degree program or a career in the field.

Typical job opportunities are: sports photographer, school photographer, news photographer, advertising work, small business owner in photography, designer, illustrator, magazine/catalog photographer, portrait photographer or photo lab technician.

Minimum credits	31
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	6
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (10 credits)

Take the following:

COM 231 Communication Fundamentals
 ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher

DIGITAL PHOTOGRAPHY CORE REQUIREMENTS – (15 credits)

Take the following:

ART 101 Two-Dimensional Design
 ART 137 Digital Photography I
 or CIS 137 Digital Photography I
 ART 237 Digital Photography II
 or CIS 237 Digital Photography II
 CIS 134 Graphic Imaging
 CIS 136 Integrated Design

ELECTIVES – (6 credits)

Choose 6 credits from the following:

ART 103 Drawing I: Foundations
 ART 112 Art History: Renaissance to Present
 ART 240 Printmaking
 BUA 100 Contemporary Business
 BUA 230 Principles of Marketing
 ENT 160 Introduction to Entrepreneurship
 ENT 164 Entrepreneurial Marketing

**VISUAL COMMUNICATION/GRAPHIC DESIGN –
ASSOCIATE IN APPLIED SCIENCE (VCGD.AAS)**

The graphic design program prepares students for entry-level positions in design organizations. Graphic design graduates find employment in a variety of settings including the publication and printing industries, advertising and marketing organizations, and graphic design department of corporations, government agencies and retailers.

Minimum credits	64
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (24 credits)

ADO 1: Write clearly, concisely and intelligibly (6 credits)

Take the following:

ENG 131 Writing Experience I
 ENG 232 Technical & Business Writing

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals
 COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology
 BIO 131 General Biology
 BIO 132 Human Biology
 BIO 155 Human Anatomy & Physiology
 BIO 220 Microbiology
 BIO 253 Human Anatomy and Physiology I
 CEM 131 Fundamentals of Chemistry
 CEM 141 General Chemistry I
 GEL 160 Introduction to Geology
 NSC 131 Contemporary Science
 PHY 131 Conceptual Physics
 PHY 151 Astronomy
 PHY 231 College Physics I
 PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics
 ECN 232 Microeconomics
 HIS 131 Western Civilization to 1555
 HIS 132 Western Civilization 1555 to Present
 HIS 231 Development of the US through the Civil War
 HIS 232 Development of the US from the Civil War
 HIS 235 20th Century History
 PLS 141 American National Government
 PSY 140 Introduction to Psychology
 SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

- HPF 160 Wellness
- HPF 186 Weight Training and Wellness
- HPF 277 Stress Management
- HPF 283 Managing Stress and Holistic Health
- PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

Graphic Design Related Requirements – (12 credits)

Take the following:

- ART 101 Two-Dimensional Design,
or ART 103 Drawing
or ART 152 Painting & Composition

Choose 9 credits from the following:

- ART 137 Digital Photography I
or CIS 137 Digital Photography I
- ART 237 Digital Photography II
or CIS 237 Digital Photography II
- BUA 120 Human Relations in Business
- BUA 220 Principles of Management
- BUA 231 Advertising, Promotion & Public Relations

Graphic Design Core Requirements – (28 credits)

Take the following:

- CIS 101 Introduction to Computer Systems
- CIS 128 Typography & Layout
- CIS 132 Graphic Illustration (Adobe® Illustrator®)
- CIS 134 Graphic Imaging (Adobe® Photoshop®)
- CIS 136 Integrated Design I (Adobe® InDesign®)
- CIS 230 Practicum in Printing
- CIS 232 Integrated Design II (Adobe® InDesign®)
- CIS 234 Graphic Technology Applications
- CIS 245 Internship/Externship

**VISUAL COMMUNICATION/GRAPHIC DESIGN –
CERTIFICATE (VCGD.CERT)**

Minimum credits	38
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (7 credits)

Take the following:

- ENG 131 Writing Experience I
- MAT 131 Intermediate Algebra or higher

GRAPHIC DESIGN CORE REQUIREMENTS – (28 credits)

Take the following:

- CIS 101 Introduction to Computer Systems
- CIS 128 Typography & Layout
- CIS 132 Graphic Illustration (Adobe® Illustrator®)

- CIS 134 Graphic Imaging (Adobe® Photoshop®)
- CIS 136 Integrated Design I (Adobe® InDesign®)
- CIS 230 Practicum in Printing
- CIS 232 Integrated Design II (Adobe® InDesign®)
- CIS 234 Graphic Technology Applications
- CIS 245 Internship/Externship

VISUAL COMM/GRAPHIC RELATED REQUIREMENTS – (3 credits)

And choose one of the following courses:

- ART 101 Two-Dimensional Design
- ART 103 Drawing
- ART 137 Digital Photography I
or CIS 137 Digital Photography I
- ART 152 Painting & Composition

**VISUAL COMMUNICATION/GRAPHIC DESIGN –
CONCENTRATION (VCGD.CON)**

Minimum credits	20
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (20 credits)

Take the following:

- CIS 101 Introduction to Computer Systems
- CIS 132 Graphic Illustration (Adobe® Illustrator®)
- CIS 134 Graphic Imaging (Adobe® Photoshop®)
- CIS 136 Integrated Design I (Adobe® InDesign®)
- CIS 230 Practicum in Printing
- CIS 232 Integrated Design II (Adobe® InDesign®)

**MULTIMEDIA WEB DESIGN – ASSOCIATE IN
APPLIED SCIENCE (MUWD.AAS)**

A web designer combines type, graphics, animation, sound and programming to create a complete experience for the web visitor. Web design is a cooperative process, and the designer may work with interface designers, marketing professionals, engineers and computer technicians.

Minimum credits	63
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (24 credits)

ADO 1: Write clearly, concisely and intelligibly (6 credits)

Take the following:

- ENG 131 Writing Experience I
- ENG 232 Technical & Business Writing

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

- COM 231 Communication Fundamentals
- COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

- MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology
 BIO 131 General Biology
 BIO 132 Human Biology
 BIO 155 Anatomy & Physiology
 BIO 220 Microbiology
 BIO 253 Human Anatomy and Physiology I
 CEM 131 Fundamentals of Chemistry
 CEM 141 General Chemistry I
 GEL 160 Introduction to Geology
 NSC 131 Contemporary Science
 PHY 131 Conceptual Physics
 PHY 151 Astronomy
 PHY 231 College Physics I
 PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics
 ECN 232 Microeconomics
 HIS 131 Western Civilization to 1555
 HIS 132 Western Civilization 1555 to Present
 HIS 231 Development of the US through the Civil War
 HIS 232 Development of the US from the Civil War
 HIS 235 20th Century History
 PLS 141 American National Government
 PSY 140 Introduction to Psychology
 SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness
 HPF 186 Weight Training and Wellness
 HPF 277 Stress Management
 HPF 283 Managing Stress and Holistic Health
 PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success
 Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures
 Program courses meet this requirement

MULTIMEDIA WEB DESIGN RELATED REQUIREMENTS – (9 credits)

Take the following:

BUA 122 Successful Small Business
 BUA 130 Customer Service
 BUA 230 Principles of Marketing

MULTIMEDIA WEB DESIGN CORE – (30 credits)

Take the following:

CIS 101 Introduction to Computer Systems
 CIS 122 Microsoft® Access® Comprehensive
 CIS 132 Graphic Illustration (Adobe® Illustrator®)
 CIS 134 Graphic Imaging (Adobe® Photoshop®)
 CIS 136 Integrated Design I (Adobe® InDesign®)
 CIS 143 HTML
 CIS 147 Web Page Design I (Dreamweaver®)
 CIS 243 Web Animation (Adobe® Flash®)
 CIS 244 Web Programming
 CIS 246 Web Integration with Database
 CIS 247 Web Page Design II (Dreamweaver®)

MULTIMEDIA WEB DESIGN – CERTIFICATE (MUWD.CERT)

This program, while leading to a certificate for multimedia/web design, prepares students for entry-level positions in design organizations. Multimedia/web design graduates find employment in a variety of settings including the publication and printing industries, advertising and marketing organizations, and graphic and web design departments of corporations, government agencies, and retailers. The major focus of the program is on skills development in basic design techniques and Internet technology applications.

Minimum credits	37
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (7 credits)

Take the following:

ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher

WEB DESIGN CORE REQUIREMENTS – (30 credits)

Take the following:

CIS 101 Introduction to Computer Systems
 CIS 122 Microsoft® Access® Comprehensive
 CIS 132 Graphic Illustration (Adobe® Illustrator®)
 CIS 134 Graphic Imaging (Adobe® Photoshop®)
 CIS 136 Integrated Design I (Adobe® InDesign®)
 CIS 143 HTML
 CIS 147 Web Page Design I (Dreamweaver®)
 CIS 243 Web Animation (Adobe® Flash®)
 CIS 244 Web Programming
 CIS 246 Web Integration with Database
 CIS 247 Web Page Design II (Dreamweaver®)

TRANSFER PROGRAMS

ART

Visual artists create art to communicate ideas, thoughts or feelings. They use a variety of methods: painting, sculpting or illustration and an assortment of materials including watercolors, acrylics, pastels, pencils, pen and ink, plaster, clay and computers. Visual artists' works may be realistic, stylized or abstract and may depict objects, people, nature or events. Sample curricula for a few popular transfer programs are included.

Admittance to a four-year college art program is highly competitive. Check with the transfer institution to determine the admittance process. During the first semester of your freshman year, check whether ART classes will transfer to meet requirements of the transfer institution. Some transfer institutions grant studio art credit ONLY upon approval of a portfolio.

SUGGESTED COURSE SEQUENCE FOR ART

First Year, Fall Semester

ART 101, ART 111, ENG 131, MAT 131 or 141*, MACRAO science course

First Year, Winter Semester

ART 112, ART 201, ENG 132, MACRAO science course, MACRAO social science course

Second Year, Fall Semester

ART 103, ART 152, MACRAO social science course, non-art MACRAO humanities course

Second Year, Winter Semester

ART 203, MACRAO social science course, electives

**Check mathematics requirements of transfer institution.*

DANCE

Dancers use their bodies in a variety of ways to respond to social and political realities. Creative movement, awareness of the bodies in space and time and performance experience are all excellent training for careers that demand poise and confidence. Check the transfer status of DAN classes with the university of your choice.



ENGLISH

Students who major or minor in English can find work in a variety of fields. Careers such as writing, teaching, library science, editing and publishing are directly related to specific studies in English language and literature. English is an excellent pre-law major. Many transfer institutions require that English majors have proficiency in a foreign language. The level of this proficiency varies – some require third-semester proficiency but more require fourth semester proficiency.

SUGGESTED COURSE SEQUENCE FOR ENGLISH

First Year, Fall Semester

ENG 131, MAT 131 or MAT 141*, foreign language, MACRAO science course

First Year, Winter Semester

ENG 132, ENG 246, foreign language, MACRAO science course

First Year, Spring Semester

MACRAO social science courses

Second Year, Fall Semester

ENG 247, ENG 255, ENG 261, foreign language

Second Year, Winter Semester

ENG 252, ENG 256, foreign language, MACRAO social science course, COM 231

**Check mathematics requirements of transfer institution.*

HISTORY

History examines the lives of people and the consequences of ideas. Study of the past reveals valuable achievements as well as dreadful mistakes, and in so doing helps us meet the unexpected challenges of our own day.

SUGGESTED COURSE SEQUENCE FOR HISTORY

First Year, Fall Semester

ENG 131, HIS 131, MAT 131 or MAT 141*, MACRAO science course

First Year, Winter Semester

ENG 132, GEO 132, HIS 132, PHL 231, MACRAO science course

Second Year, Fall Semester

ECN 231, HIS 231, PLS 141, electives

Second Year, Winter Semester

ECN 232, HIS 232, electives

**Check mathematics requirements of transfer institution.*

MUSIC

Many occupations include music, the most obvious being a vocalist or musical entertainer. Others include songwriting, music teacher, music therapist, conductor, music critic or music librarian. Some music majors work on the business side of the industry and become agents or store owners. Music students have access to the College's incredible performing arts complex, the George E. Potter Center. Students who qualify can study and perform with the Broadway Revue and the Community Concert Band. These provide valuable concert experiences as well as academic credit. Admittance to a four-year college music program is highly competitive and requires an audition.

It is recommended that students contact their intended transfer institution during their first year to schedule an audition time.

SUGGESTED COURSE SEQUENCE FOR MUSIC

First Year, Fall Semester

ENG 131, MAT 131 or MAT 141*, MACRAO science course, MUS 103***, MUS 151**, MUS 167****, MUS 129, MUS 190

First Year, Winter Semester

ENG 132, MACRAO science course, MUS 152**, MUS 168****, MUS 129, or MUS 190

Second Year, Fall Semester

MUS 130, MACRAO social science courses, non-music MACRAO humanities course, MUS 129, or MUS 190

Second Year, Winter Semester

MUS 131, MACRAO social science course(s), MUS 129, or MUS 190

**Check mathematics requirements of transfer institution.*

***May need to take test at transfer institution to receive credit.*

****Semesters required depend on amount of prior piano study.*

*****Vocalists can take MUS 123/124 instead.*

THEATRE

Theatre students have access to the College's incredible performing arts complex, the George E. Potter Center and learn from professionally experienced faculty. Program emphasizes practical experience with requirements in studio and classroom work.

Career positions can include working as an actor, director, stage manager, set designer or in other theatre related occupations.

SUGGESTED COURSE SEQUENCE FOR THEATRE

First Year, Fall Semester

ENG 131, MAT 131 or MAT 141*, THR 145, MACRAO science course

First Year, Winter Semester

ENG 132, PSY 140, THR 146, MACRAO science course

Second Year, Fall Semester

THR 116, MACRAO social science and humanities courses

Second Year, Winter Semester

THR 260, MACRAO social science and humanities courses, electives

**Check mathematics requirements of transfer institution.*



BUSINESS, MANAGEMENT, MARKETING AND TECHNOLOGY CAREER PATHWAY

This pathway includes careers related to all aspects of business including accounting, business administration, finance, information processing and marketing. These may include advertising, entrepreneurship, sales, computer/information systems, human resources, office administration, economics, management and retailing.

DEGREES/CERTIFICATES:

- Accounting
- Administrative Assistant
- Business Administration
- Management
- Marketing
- Computer Programming Specialist
- Microcomputer Applications Specialist
- Microsoft Office User Specialist
- Networking Specialist

TRANSFER PROGRAMS

The first two years of a student's college education usually consists of general education courses, introductory courses in a major and/or program of study and selected electives. See an academic advisor for a transfer guide sheet to the college/university of your choice. The guide sheet identifies JCC courses that transfer in your program of study. Refer to page 39 for additional information on transfer and MACRAO.

Jackson Community College has published this catalog for information purposes only and its contents do not constitute a contract between this institution and prospective or enrolled students. The information contained in this general College catalog reflects the current curricula, policies and regulations of the College. However, these are subject to change at any time by action of the Board of Trustees or the administration. The information is generally believed to be accurate, but the College disclaims liability for inadvertent errors or omissions.

ACCOUNTING – ASSOCIATE IN APPLIED SCIENCE (ACCT.AAS)

Accountants and auditors prepare, analyze and verify financial reports and taxes and monitor information systems that furnish this information to managers in business, industry and government.

The accounting/finance major prepares students for initial employment and develops competencies for those already in the field. Students develop skills in the posting and recording of financial data, use of computers, preparation of financial statements and reports, interpretation of financial information, and develop effective supervisory and communicative techniques and skills.

Typical job opportunities and places of employment are: junior accountant with public accounting firms, banks and other financial institutions, educational institutions and other profit and not-for-profit organizations.

Minimum credits	60
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (23 credits)

ADO 1: Write clearly, concisely and intelligibly (6 credits)

Take the following:

- ENG 131 Writing Experience I
- ENG 232 Technical & Business Writing

ADO 2: Speak clearly, concisely and intelligibly

Program courses meet this requirement

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

- MAT 131 Intermediate Algebra
- or MAT 133 Introduction to Probability & Statistics

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

- BIO 110 Introductory Biology
- BIO 131 General Biology
- BIO 132 Human Biology
- BIO 155 Human Anatomy & Physiology
- BIO 220 Microbiology
- BIO 253 Human Anatomy and Physiology I
- CEM 131 Fundamentals of Chemistry
- CEM 141 General Chemistry I
- GEL 160 Introduction to Geology
- NSC 131 Contemporary Science
- PHY 131 Conceptual Physics
- PHY 151 Astronomy
- PHY 231 College Physics I
- PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them and their implications for the present and future (3 credits)

Choose one of the following:

- ECN 231 Macroeconomics
- ECN 232 Microeconomics

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

- ART 111 Art History: Prehistoric to 1400
- ART 112 Art History: Renaissance to Present
- ENG 210 Introduction to Film
- ENG 246 Short Story & Novel
- ENG 247 Poetry & Drama
- ENG 252 Shakespeare
- ENG 254 Children's Literature
- ENG 255 American Literature – 19th Century
- ENG 256 American Literature – 20th Century
- HUM 131 Cultural Connections
- MUS 131 Understanding Music
- THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Program courses meet this requirement

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures (3 credits)

Choose one of the following:

- ANT 131 Cultural Anthropology
- ENG 236 Women in a Changing Society
- ENG 249 African-American Literature
- ENG 257 World Literature I
- FRN 131 French I or higher
- GEO 132 World Regions
- GER 131 German I or higher
- HIS 125 African-American History
- PHL 243 World Religions
- PLS 262 International Relations
- MUS 130 Music of Non-Western Cultures
- SOC 235 Minority Groups in America
- SOC 236 Women in a Changing Society
- SPN 131 Spanish I or higher

ACCOUNTING RELATED REQUIREMENTS – (13 credits)

Take the following:

- BUA 100 Contemporary Business
- BUA 110 Introduction to Wall Street
- BUA 220 Principles of Management
- BUA 250 Business Law I
- CIS 101 Introduction to Computer Systems

ACCOUNTING CORE REQUIREMENTS – (23 credits)

Take the following:

- ACC 115 Payroll Accounting
- ACC 214 Income Tax Accounting
- or ACC 122 Volunteer Income Tax Project
- ACC 130 QuickBooks Pro
- or CIS 121 Microsoft® Excel®

ACC 231 Principles of Accounting
 ACC 232 Principles of Accounting II
 ACC 234 Managerial Accounting
 ACC 240 Intermediate Accounting

ACCOUNTING ELECTIVES

Select electives from courses in ACC, BUA, CIS, ECM, ECN or ENT, if necessary to meet 60 credits required for this degree.

Please note: ACC courses are not available at all JCC sites every semester. Please consult with an academic advisor.

Online note: Some students find online ACC courses to be challenging. It is recommended that online accounting students have strong computer skills including proficiency using e-mail, the Internet, experience using Microsoft® Word®, Excel® and skills with attaching files.

ACCOUNTING – CERTIFICATE (ACCT.CERT)

This program prepares students for bookkeeping and related occupations. Job opportunities exist for audit clerks, general accounting clerks, credit card clerks in hotels and restaurants, general ledger bookkeepers and many more. Learn to keep accounting records and compile reports using computers and calculators; prepare payrolls, tax reports; compute, type, and mail monthly statements, keep general ledgers, and perform many other accounting functions.

Minimum credits	30
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (10 credits)

Take the following:

ENG 131 Writing Experience I
 ENG 232 Technical & Business Writing
 MAT 131 Intermediate Algebra
 or MAT 133 Introduction to Probability & Statistics

ACCOUNTING CORE REQUIREMENTS – (17 credits)

Take the following:

ACC 115 Payroll Accounting
 ACC 231 Principles of Accounting I
 ACC 232 Principles of Accounting II
 BUA 110 Introduction to Wall Street
 CIS 101 Introduction to Computer Systems
 CIS 121 Microsoft® Excel® Comprehensive
 or ACC 130 QuickBooks® Pro

ELECTIVES

Select electives from courses in ACC, BUA or ECN, if necessary to meet 30 credits required for the certificate.

Please note: ACC courses are not available at all JCC sites every semester. Please consult with an academic advisor.

Online note: Some students find online ACC courses to be challenging. It is recommended that online accounting students have strong computer skills including proficiency using e-mail, the Internet, experience using Microsoft® Word®, Excel® and skills with attaching files.

BUSINESS ADMINISTRATION – ASSOCIATE IN APPLIED SCIENCE (BUAD.AAS)

This is a broad-based program of business studies. This program allows the student to customize a program of study that meets the specific employment and/or transfer needs of the student.

Minimum credits	60
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (20 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals
 COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology
 BIO 131 General Biology
 BIO 132 Human Biology
 BIO 155 Anatomy & Physiology
 BIO 220 Microbiology
 BIO 253 Human Anatomy and Physiology I
 CEM 131 Fundamentals of Chemistry
 CEM 141 General Chemistry I
 GEL 160 Introduction to Geology
 NSC 131 Contemporary Science
 PHY 131 Conceptual Physics
 PHY 151 Astronomy
 PHY 231 College Physics I
 PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them and their implications for the present and future (3 credits)

Choose one of the following:

ECN 231 Macroeconomics
 ECN 232 Microeconomics

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Program courses meet this requirement

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

BUSINESS ADMINISTRATION RELATED REQUIREMENTS – (7 credits)

Take the following:

ACC 231 Principles of Accounting I
 or ACC 216 Financial Accounting Concepts
 CIS 101 Introduction to Computer Systems

BUSINESS ADMINISTRATION CORE REQUIREMENTS – (12 credits)

Take the following:

BUA 100 Contemporary Business
 BUA 220 Principles of Management
 BUA 230 Principles of Marketing
 BUA 250 Business Law I

BUSINESS ADMINISTRATION ELECTIVES – (18-22 credits)

Select electives from the following list to meet the 60-credit degree requirement.

Choose from the following:

ACC 115 Payroll Accounting
 ACC 122 Volunteer Income Tax Project
 ACC 214 Income Tax Accounting
 ACC 216 Financial Accounting Concepts
 ACC 231 Principles of Accounting I
 ACC 232 Principles of Accounting II
 ACC 234 Managerial Accounting
 ACC 240 Intermediate Accounting
 BUA 110 Introduction to Wall Street
 BUA 111 Personal Finance
 BUA 120 Human Relations in Business
 BUA 121 Leadership
 BUA 122 Successful Small Business
 BUA 130 Customer Service

BUA 131 Effective Selling
 BUA 221 Human Resource Management
 BUA 231 Advertising, Promotion & Public Relations
 BUA 245 Internship/Externship
 BUA 251 Business Law II
 ECN 231 Macroeconomics
 ECN 232 Microeconomics
 ENG 232 Technical & Business Writing
 ENT 160 Introduction to Entrepreneurship
 ENT 161 Investigating Business Ideas
 ENT 169 Business Plan
 PSY 140 Introduction to Psychology

Please note: BUA courses are not available at all JCC sites every semester. Please consult with an advisor.

BUSINESS ADMINISTRATION – CERTIFICATE (BUAD.CERT)

The Business Administration Certificate will develop your awareness in all of the functional aspects of the business world. You can use your ability to get along with people, develop your leadership potential, and use your oral and written communication skills. Jobs may be found in insurance companies, hospitals, health-care facilities, educational institutions, transportation/distribution centers, government agencies and manufacturing firms in a variety of departments. This program also consists of the foundational courses needed for an associate degree.

Minimum credits	30
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (10 credits)

Take the following:

ENG 131 Writing Experience I
 ENG 232 Technical & Business Writing
 MAT 131 Intermediate Algebra or higher

BUSINESS ADMINISTRATION RELATED REQUIREMENTS – (7 credits)

Take the following:

ACC 231 Principles of Accounting I
 or ACC 216 Financial Accounting Concepts
 CIS 101 Introduction to Computer Systems

BUSINESS CORE REQUIREMENTS – (12 credits)

Take the following:

BUA 100 Contemporary Business
 BUA 220 Principles of Management
 BUA 230 Principles of Marketing
 BUA 250 Business Law I

ELECTIVES

Select electives from courses in ACC, BUA, ECN and ENT in order to meet 30 credits required for certificate.

Please note: BUA courses are not available at all JCC sites every semester. Please consult with an advisor.

FINANCIAL SERVICES – CONCENTRATION (FISR.CON)

This credential prepares students for work in the banking and financial services industries. Job opportunities could include introductory positions with banks (teller or customer service representative), trust offices, pension and retirement planning firms, personal financial planning groups and investment brokerage houses (clerk or customer service representative). Students acquire skills in customer relations and financial problem solving. Students learn about financial markets and economic issues.

Minimum credits	17
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

CORE COURSES – (17 credits)

ACC 216 Financial Accounting Concepts
 BUA 110 Introduction to Wall Street
 BUA 111 Personal Finance
 BUA 120 Human Relations
 BUA 130 Customer Service
 ECN 232 Microeconomics

MANAGEMENT – CERTIFICATE (MGMT.CERT)

People with management skills are employed in every industry in the career world. This program will build on your natural ability to get along with people and help develop your leadership potential. The focus in this program is on the principles, theories and application of planning, organizing, leading, staffing and evaluating results. Having good communication skills and the ability to make reliable decisions without supervision are essential to beginning a career in management.

Minimum credits	30
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (10 credits)

Take the following:

ENG 131 Writing Experience I
 ENG 232 Technical & Business Writing
 MAT 131 Intermediate Algebra or higher

MANAGEMENT RELATED REQUIREMENTS – (4 credits)

Take the following:

ACC 231 Principles of Accounting I
 or ACC 216 Financial Accounting Concepts

MANAGEMENT CORE REQUIREMENTS – (12 credits)

Take the following:

BUA 100 Contemporary Business
 BUA 130 Customer Service
 or BUA 120 Human Relations
 BUA 220 Principles of Management
 BUA 221 Human Resource Management

ELECTIVES

Select electives from classes in ACC, BUA, CIS or ECN in order to meet 30 credits required for certificate. FIN courses have been replaced with BUA.

MARKETING – CERTIFICATE (MRKT.CERT)

Individuals considering a marketing career should be good listeners, enjoy current events and look forward to the business challenges that come with changing cultural habits. Also important are the abilities to think creatively, communicate effectively and manage time wisely to meet deadlines.

Minimum credits	30
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (10 credits)

Take the following:

ENG 131 Writing Experience I
 ENG 232 Technical & Business Writing
 MAT 131 Intermediate Algebra or higher

MARKETING CORE REQUIREMENTS – (18 credits)

Take the following:

BUA 120 Human Relations
 BUA 122 Successful Small Business
 BUA 130 Customer Service
 BUA 131 Effective Selling
 BUA 230 Principles of Marketing
 BUA 231 Advertising, Promotion & Public Relations

ELECTIVES

Select electives from classes in ACC, BUA, CIS or ECN in order to meet 30 credits required for certificate.

ENTREPRENEURSHIP – SKILL SET (ENTR.SSET)

This program is designed to assist the student in making informed decisions regarding the many benefits and costs of starting your own business and finding the right business opportunity 'fit.' In addition, you will prepare a completed business plan presentation.

Minimum credits	10
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	10
MACRAO Agreement	No

ENTREPRENEUR RELATED REQUIREMENTS – (3 credits)

Take the following:

CIS 101 Introduction to Computer Systems

ENTREPRENEUR CORE REQUIREMENTS – (7 credits)

Take the following:

ENT 160 Introduction to Entrepreneurship
 ENT 161 Investigating Business Ideas
 ENT 169 Business Plan

COMPUTER PROGRAMMING SPECIALIST – ASSOCIATE IN APPLIED SCIENCE (CPSP.AAS)

Programmers write the detailed sets of instructions computers understand and act on. Emphasis is placed on computer information systems, programming language, concepts and designs, logic and theory. Job opportunities may include applications programmer, computer operator, information office systems manager, operations scheduler, systems analyst or programmer.

Minimum credits	65
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (20 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Anatomy & Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics

ECN 232 Microeconomics

HIS 131 Western Civilization to 1555

HIS 132 Western Civilization 1555 to Present

HIS 231 Development of the US through the Civil War

HIS 232 Development of the US from the Civil War

HIS 235 20th Century History

PLS 141 American National Government

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story and Novel

ENG 247 Poetry and Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

COMPUTER PROGRAMMING SPECIALIST RELATED REQUIREMENTS – (10 credits)

Take the following:

ACC 216 Financial Accounting Concepts

BUA 100 Contemporary Business

BUA 120 Human Relations in Business

COMPUTER PROGRAMMING SPECIALIST CORE REQUIREMENTS – (35 credits)

Take the following:

CIS 101 Introduction to Computer Systems

CIS 105 Microsoft® Windows® Workshop

CIS 106 Operating Systems: UNIX

CIS 107 Microsoft® DOS® Workshop

CIS 122 Microsoft® Access® Comprehensive

CIS 143 HTML

CIS 158 Programming Logic

CIS 160 Programming in Visual Basic.NET

CIS 165 JAVA Programming

CIS 170 Programming in C++

CIS 174 PC Repair/A+ Hardware Component

or CNS 101 Network+/Networking Fundamentals

CIS 244 Web Programming

CIS 260 Advanced Visual Basic.NET

CIS 273 Systems Concepts and Design

COMPUTER PROGRAMMING SPECIALIST – CERTIFICATE (CPSP.CERT)

Minimum credits	42
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (7 credits)

Take the following:

- ENG 131 Writing Experience I
MAT 131 Intermediate Algebra or higher

COMPUTER PROGRAMMING SPECIALIST CORE REQUIREMENTS – (35 credits)

Take the following:

- CIS 101 Introduction to Computer Systems
CIS 105 Microsoft® Windows® Workshop
CIS 106 Operating Systems: UNIX
CIS 107 Microsoft® DOS® Workshop
CIS 122 Microsoft® Access® Comprehensive
CIS 143 HTML
CIS 158 Programming Logic
CIS 160 Programming in Visual Basic.NET
CIS 165 JAVA Programming
CIS 170 Programming in C++
CIS 174 PC Repair/A+ Hardware Component
or CNS 101 Network+/Networking Fundamentals
CIS 244 Web Programming
CIS 260 Advanced Visual Basic.NET
CIS 273 System Concepts and Design

MICROCOMPUTER APPLICATIONS SPECIALIST – ASSOCIATE IN APPLIED SCIENCE (MCSP.AAS)

Students completing this program are prepared to assume a variety of positions in an automated office setting. The program recognizes the increasingly important role of the microcomputer in modern business and is designed to assist students in developing skills in the use of microcomputer applications. Depending upon the curriculum students choose, career choices may include applications specialist, information office manager, end user support technician, information systems associate, personal computer (PC) coordinator, or software specialist.

Minimum credits	63
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (24 credits)**ADO 1: Write clearly, concisely and intelligibly (6 credits)**

Take the following:

- ENG 131 Writing Experience I
ENG 232 Technical & Business Writing
or ENG 132 Writing Experience II

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

- COM 231 Communication Fundamentals
COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

- MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

- BIO 110 Introductory Biology
BIO 131 General Biology
BIO 132 Human Biology
BIO 155 Anatomy & Physiology
BIO 220 Microbiology
BIO 253 Human Anatomy and Physiology I
CEM 131 Fundamentals of Chemistry
CEM 141 General Chemistry I
GEL 160 Introduction to Geology
NSC 131 Contemporary Science
PHY 131 Conceptual Physics
PHY 151 Astronomy
PHY 231 College Physics I
PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3 credits)

Choose one of the following:

- ECN 231 Macroeconomics
ECN 232 Microeconomics
PLS 141 American National Government
PSY 140 Introduction to Psychology
SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

- ART 111 Art History: Prehistoric to 1400
ART 112 Art History: Renaissance to Present
ENG 210 Introduction to Film
ENG 246 Short Story & Novel
ENG 247 Poetry & Drama
ENG 252 Shakespeare
ENG 254 Children's Literature
ENG 255 American Literature – 19th Century
ENG 256 American Literature – 20th Century
HUM 131 Cultural Connections
MUS 131 Understanding Music
THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

- HPF 160 Wellness
HPF 186 Weight Training and Wellness
HPF 277 Stress Management
HPF 283 Managing Stress and Holistic Health
PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success
Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures
Program courses meet this requirement

MICROCOMPUTER APPLICATIONS SPECIALIST RELATED REQUIREMENTS – (5 credits)

Take the following:

ACC 115 Payroll Accounting
BUA 130 Customer Service

MICROCOMPUTER APPLICATIONS SPECIALIST CORE – (34 credits)

Take the following:

CIS 101 Introduction to Computer Systems
or CIS 201 Advanced Computer Technologies
CIS 105 Microsoft® Windows® Workshop
CIS 106 Operating Systems: UNIX®
CIS 107 Microsoft® DOS® Workshop
CIS 118 Microsoft® Publisher® Windows®
CIS 119 Microsoft® PowerPoint®
CIS 120 Microsoft® Word® Comprehensive
CIS 121 Microsoft® Excel® Comprehensive
CIS 122 Microsoft® Access® Comprehensive
CIS 147 Web Page Design I (Dreamweaver®)
or CIS 125 Microsoft® Expression Web®
CIS 174 PC Repair/A+ Hardware Component
CIS 175 PC Repair/A+ Software Component
CIS 210 Office Administration Systems
CNS 101 Network+/Networking Fundamentals

MICROCOMPUTER APPLICATIONS SPECIALIST – CERTIFICATE (MCSP.CERT)

Students completing this certificate are prepared to assume a variety of positions in an automated office setting. The certificate contains most of the core computer classes in the microcomputer applications specialist associate degree. Students completing this certificate may find jobs as an applications specialist, information office manager, end user support technician, information systems associate, personal computer (PC) coordinator, or software specialist. Students can also continue on for the associate degree or may complete this certificate to improve current job skills.

Minimum credits	35
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (13 credits)

Take the following:

ENG 131 Writing Experience I
ENG 232 Technical & Business Writing
or ENG 132 Writing Experience II
MAT 131 Intermediate Algebra or higher

Choose one of the following:

COM 231 Communication Fundamentals
or COM 240 Interpersonal Communication

MICROCOMPUTER APPLICATIONS SPECIALIST CORE REQUIREMENTS – (22 credits)

Take the following:

CIS 101 Introduction to Computer Systems
CIS 105 Microsoft® Windows® Workshop
CIS 106 Operating System: UNIX
CIS 107 Microsoft® DOS® Workshop
CIS 118 Microsoft® Publisher® Windows®
CIS 120 Microsoft® Word® Comprehensive
CIS 121 Microsoft® Excel® Comprehensive
CIS 122 Microsoft® Access® Comprehensive
CIS 147 Web Page Design I (Dreamweaver®)
or CIS 125 Microsoft® Expression Web®
CIS 210 Office Administration Systems

MICROCOMPUTER APPLICATIONS – CONCENTRATION (MCAP.CON)

Students completing this concentration are preparing to assume a variety of positions in an automated office setting. The concentration contains most of the core computer classes in the Microcomputer Applications Specialist certificate and associate degree. Students completing this concentration can continue on for the certificate and associate degree or may complete this concentration to improve current job skills.

Minimum credits	20
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (20 credits)

Take the following:

CIS 105 Microsoft® Windows® Workshop
CIS 125 Microsoft® Expression Web®
or CIS 147 Web Page Design I (Dreamweaver®)
CIS 101 Introduction to Computer Systems
CIS 119 Microsoft® PowerPoint®
CIS 120 Microsoft® Word® Comprehensive
CIS 121 Microsoft® Excel® Comprehensive
CIS 122 Microsoft® Access® Comprehensive
CNS 101 Network+/Networking Fundamentals

MICROCOMPUTER APPLICATIONS – SKILL SET (MCAP.SSET)

Students completing this skill set are preparing to assume a variety of positions in an automated office setting. This skill set gives students as good foundation to continue on for the concentration, certificate, or associate degree.

Minimum credits	6
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (6 credits)

Take the following:

CIS 105 Microsoft® Windows® Workshop
CIS 119 Microsoft® PowerPoint®
CIS 120 Microsoft® Word® Comprehensive

MICROSOFT® OFFICE® SPECIALIST – CERTIFICATE (MSOS.CERT)

Students completing this program are prepared to assume a variety of positions in an automated office setting. The program recognizes the increasingly important role of the personal computer in modern business and is designed to assist students in developing their skills in the use of graphing, personal management, project management and electronic presentations. The Microsoft® Office® Specialist program provides a framework for measuring student proficiency with Microsoft® Office® applications and prepares students for the industry recognized Microsoft® exams for measuring an individual's mastery of "Office®" applications. Students completing the program could be hired at entry-level positions such as secretaries, help desk technicians, administrative assistants and stenographers.

Minimum credits	37
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (13 credits)**Take the following:**

ENG 131 Writing Experience I
 ENG 232 Technical & Business Writing
 or ENG 132 Writing Experience II
 MAT 131 Intermediate Algebra or higher

Choose one of the following:

COM 231 Communication Fundamentals
 or COM 240 Interpersonal Communication

MICROSOFT® OFFICE® SPECIALIST CORE REQUIREMENTS – (24 credits)**Take the following:**

CIS 101 Introduction to Computer Systems
 or CIS 201 Advanced Computer Information Technologies
 CIS 110 Beginning Keyboarding/Typing
 CIS 117 Microsoft® Outlook® Workshop
 CIS 118 Microsoft® Publisher® Windows®
 CIS 119 Microsoft® PowerPoint®
 CIS 120 Microsoft® Word® Comprehensive
 CIS 121 Microsoft® Excel® Comprehensive
 CIS 122 Microsoft® Access® Comprehensive
 CIS 210 Office Administration Systems

**MICROSOFT® OFFICE® SPECIALIST – CONCENTRATION (MSOS.CON)**

These courses are part of the Microsoft® Certified Applications Specialist credential tests. Students who pass the "expert" Word® and Excel® exams and the "specialist" Access® and PowerPoint® exams will receive "Master" recognition from the Microsoft® Corporation. Other levels of Microsoft® Office® certification are available from Microsoft® as students begin passing exams. The successful completion of Microsoft® Office® sponsored exams are in addition to the successful completion of JCC's courses for credit. For specific information on Microsoft® certification, students should talk with the program advisor. Students completing the program could be hired as administrative assistants, database administrators and secretaries.

Minimum credits	18
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (18 credits)**Take the following:**

CIS 101 Introduction to Computer Systems
 CIS 110 Beginning Keyboarding/Typing
 CIS 119 Microsoft® PowerPoint®
 CIS 120 Microsoft® Word® Comprehensive
 CIS 121 Microsoft® Excel® Comprehensive
 CIS 122 Microsoft® Access® Comprehensive

3D DESIGN AND ANIMATION – ASSOCIATE IN APPLIED SCIENCE (DDDA.AAS)

Looking for a great way to put your digital art skills to use? Along with the film industry, the games industry is one of the fastest growing places to build your career as an artist. Traditional hand skills and digital know-how are both in demand. Artists who want challenging creative work that's fast-paced, collaborative, and fun, should check here first.

Minimum credits	65
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)**ADO 1: Write clearly, concisely and intelligibly (3 credits)****Take the following:**

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)**Choose one of the following:**

COM 231 Communication Fundamentals
 COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)**Take the following:**

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)**Choose one of the following:**

BIO 110 Introductory Biology
 BIO 131 General Biology

BIO 132 Human Biology
 BIO 155 Human Anatomy & Physiology
 BIO 220 Microbiology
 CEM 131 Fundamentals of Chemistry
 CEM 141 General Chemistry I
 GEL 160 Introduction to Geology
 PHY 131 Conceptual Physics
 PHY 151 Astronomy
 PHY 231 College Physics I
 PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics
 ECN 232 Microeconomics
 HIS 131 Western Civilization to 1555
 HIS 132 Western Civilization 1555 to Present
 HIS 231 Development of the US through the Civil War
 HIS 232 Development of the US from the Civil War
 HIS 235 20th Century History
 PLS 141 American National Government
 PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness
 HPF 186 Weight Training and Wellness
 HPF 277 Stress Management
 HPF 283 Managing Stress and Holistic Health
 PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

3D DESIGN AND ANIMATION RELATED REQUIREMENTS – (15 credits)

ART 103 Drawing I: Foundations
 ART 205 Drawing II: Figure & Composition
 ENG 232 Technical & Business Writing
 THR 242 Sound for Stage and Video
 VID 101 Video Production I

3D DESIGN AND ANIMATION CORE REQUIREMENTS – (29 credits)

CIS 101 Introduction to Computer Systems
 CIS 134 Graphic Imaging (Adobe® PhotoShop®)
 CIS 147 Web Page Design I (Dreamweaver®)
 CIS 171 3D Modeling I
 CIS 172 Lighting and Texturing
 CIS 247 Web Page Design II (Dreamweaver®)
 CIS 271 3D Modeling II
 CIS 173 Animation I
 CIS 272 Computer Gaming Fundamentals

NETWORKING SPECIALIST – ASSOCIATE IN APPLIED SCIENCE (NESP.AAS)

Networking involves the hardware, software and communication channels necessary to allow computers to talk to each other. Most organizations use computer networks and need networking specialists to maintain their networks. Several other occupations may utilize networking skills, such as office assistants, accountants or managers. Students will study the various components of networking and how to secure them. These courses help prepare students to take industry certification exams from CompTIA, Cisco, Microsoft and others. For specific information on these certifications, please talk to the instructors.

Minimum credits	64
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Take the following:

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology
 BIO 131 General Biology
 BIO 132 Human Biology
 BIO 155 Human Anatomy & Physiology
 BIO 220 Microbiology
 BIO 253 Human Anatomy and Physiology I
 CEM 131 Fundamentals of Chemistry
 CEM 141 General Chemistry I

GEL 160 Introduction to Geology
 NSC 131 Contemporary Science
 PHY 131 Conceptual Physics
 PHY 151 Astronomy
 PHY 231 College Physics I
 PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics
 ECN 232 Microeconomics
 HIS 131 Western Civilization to 1555
 HIS 132 Western Civilization 1555 to Present
 HIS 231 Development of the US through the Civil War
 HIS 232 Development of the US from the Civil War
 HIS 235 20th Century History
 PLS 141 American National Government
 PSY 140 Introduction to Psychology
 SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness
 HPF 186 Weight Training and Wellness
 HPF 277 Stress Management
 HPF 283 Managing Stress and Holistic Health
 PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

NETWORKING RELATED REQUIREMENTS – (3 credits)

Take the following:

BUA 100 Contemporary Business

NETWORKING CORE REQUIREMENTS – (25 credits)

Take the following:

CNS 101 Network Fundamentals/Network+
 CNS 102 Routing Protocols and Concepts
 CNS 103 LAN Switching and Wireless
 CNS 104 Accessing the WAN
 CNS 121 Microsoft® Networking Client I
 CNS 122 Microsoft® Networking Client II
 CNS 201 Network Security/Security+
 CNS 231 Firewalls and Intrusion Detection

NETWORKING ELECTIVES (15 credits)

Choose five from any of the following:

General Networking:

CIS 174 PC Repair/A+ Hardware Components
 CIS 175 PC Repair/A+ Software Components
 CNS 141 Wireless Networking

Microsoft:

CNS 123 Microsoft® Networking Server 3
 CNS 124 Microsoft® Networking Server 4
 CNS 125 Microsoft® Directory Service
 CNS 221 Securing Microsoft® Networks

Cisco:

CNS 211 Building Scalable Internetworks
 CNS 212 Implementing Secure Converged WANs
 CNS 213 Building Multilayer Switched Networks
 CNS 214 Optimizing Converged Networks

Security:

CNS 131 Linux Administration I
 CNS 132 Linux Administration 2
 CNS 232 Computer Forensics I
 CNS 234 Ethical Hacking

NETWORKING SPECIALIST – CERTIFICATE (NESP.CERT)

Networking involves the hardware, software and communication channels necessary to allow computers to talk to each other. Students will study various components of computer networking. Each 200-level networking class helps prepare students with the skills and knowledge to take vendor-sponsored certification exams. Students who pass the related core exams will be CompTIA Network+ certified and recognized as a Microsoft® Certified Systems Administrator (MCSA). Students who pass the appropriate related elective exam can also achieve the premier certifications of Microsoft® Certified System Engineer (MCSE) and Certified Cisco Network Administrator (CCNA). Nearly all organizations of any size use computer networks to leverage their core competencies. These organizations need trained networking specialists to install, maintain and troubleshoot their networks. The CompTIA and Microsoft® certifications are recognized as industry standards and are required by many employers.

Minimum credits	32
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (7 credits)

Take the following:

ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher

NETWORKING SPECIALIST CORE REQUIREMENTS – (25 credits)

Take the following:

CNS 101 Network Fundamentals/Network+
CNS 102 Routing Protocols and Concepts
CNS 103 LAN Switching and Wireless
CNS 104 Accessing the WAN
CNS 121 Microsoft® Networking Client I
CNS 122 Microsoft® Networking Client II
CNS 201 Network Security/Security+
CNS 231 Firewalls and Intrusion Detection

NETWORK+/SECURITY+ – CONCENTRATION (NWSC.CON)

There is compelling evidence that neither technologies nor policies alone offer effective protection against security threats. Theft and destruction of intellectual property takes place despite the presence of firewalls, encryption and corporate edicts. Industry and governments around the world must have a well-trained workforce to effectively combat hackers, attacks and security threats. The Network+/Security+ is designed to prepare students to work as an information technology professional with a knowledge of information security within computer networks. Both the CompTIA (Computing Technology Industry Association) Network+ and Security+ certifications are recognized as basic industry standards and are required by many employers. JCC provides this program to prepare students to pass both exams. The exams are administered by CompTIA agents.

Minimum credits	19
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (19 credits)

Take the following:

CNS 101 Network+/Networking Fundamentals
CNS 102 Routing Protocols and Concepts
CNS 121 Microsoft® Networking Client I
CNS 122 Microsoft® Networking Client II
CNS 201 Network Security/Security+
CNS 231 Firewalls and Intrusion Detection

MICROSOFT® NETWORKING –CONCENTRATION (MSNW.CON)

Minimum credits	29
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	6
MACRAO Agreement	No

REQUIRED COURSES – (29 credits)

Take the following:

CIS 101 Introduction to Computer Systems
CIS 174 PC Repair / A+ Hardware Component
CIS 175 PC Repair / A+ Software Component
CIS 176 A+ Certification Exam Preparation
CNS 101 Network+/Networking Fundamentals
CNS 102 Routing Protocols and Concepts
CNS 121 Microsoft® Networking Client I

CNS 122 Microsoft® Networking Client II
CNS 201 Network Security/Security+
CNS 231 Firewalls and Intrusion Detection

COMPUTER SERVICE TECHNICIAN (A+/NETWORK+) – SKILL SET (CPST.SSET)

The computer service technician credential prepares students to work as a computer service professional. A+/Network+ is the recognized industry standard for computer service technicians. This training is the “journeyman’s card” for professionals in microcomputer maintenance. The computer service technician validates technical competency in networking administration and support. Those holding A+/Network+ should demonstrate critical knowledge of media and topologies, protocols and standards, network implementation and network support. CompTIA (Computing Technology Industry Association) is the certifying agent, a non-profit industry group which determines competencies. CompTIA assures the quality of those who successfully pass the A+ and Network+ Certification exams. JCC provides this program to prepare students to pass both exams. The exam is administered by CompTIA’s agents.

Minimum credits	15
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (15 credits)

Take the following:

CIS 101 Introduction to Computer Systems
CIS 174 PC Repair/A+ Hardware Component
CIS 175 PC Repair/A+ Software Component
CIS 176 A+ Certification Exam Preparation
CIS 179 Network+ Certification Exam Preparation
CNS 101 Network+/Networking Fundamental Component

WEB TECHNOLOGY: eCOMMERCE PROFESSIONAL – ASSOCIATE IN APPLIED SCIENCE (WTEC.AAS)

Upon completion students will be skilled to combine web design, programming, search engine optimization and mobile eBusiness practices to create a secure and smooth eCommerce experience for the Internet shopper. The process to create an electronic store is complex and cooperative, utilizing an eCommerce professional’s business, web marketing, and customer service skills to consult with clients, their customers, and their computer technicians/engineers.

Minimum credits	61
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (23 credits)

ADO 1: Write clearly, concisely and intelligibly (6 credits)

Take the following:

ENG 131 Writing Experience I
ENG 232 Technical & Business Writing

ADO 2: Speak clearly, concisely and intelligibly
Program courses meet this requirement

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra

or MAT 133 Introduction to Probability & Statistics

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Anatomy & Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3 credits)

Choose one of the following:

ECN 231 Macroeconomics

ECN 232 Microeconomics

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story and Novel

ENG 247 Poetry and Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (3 credits)

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures
Program courses meet this requirement

eCOMMERCE RELATED REQUIREMENTS – (8 credits)

Take three courses from the following:

BUA 122 Successful Small Business

BUA 130 Customer Service

BUA 230 Principles of Marketing

BUA 231 Advertising, Promotion and Public Relations

ENT 161 Opportunity Analysis

ENT 169 Business Plan

eCOMMERCE PROFESSIONAL CORE REQUIREMENTS – (30 credits)

Take the following:

CIS 101 Introduction to Computer Systems

CIS 122 Microsoft® Access® Comprehensive-Windows®

CIS 125 Microsoft® Expressions® Web

CIS 134 Graphic Imaging (Adobe® Photoshop®)

CIS 135 Open Source Web Design

CIS 143 HTML

CIS 244 Web Programming

CIS 246 Web Integration with Database

ECM 101 eCommerce Fundamentals

ECM 201 Advanced Information Technologies

ECM 220 eBusiness II: SEO/Management

ENT 160 Intro to Entrepreneurship

WEB TECHNOLOGY: eCOMMERCE CONSULTANT CERTIFICATE (WTEC.CERT)

Upon completion students will be skilled to consult with clients regarding their desires for an eCommerce site, as well as manage inventory through integrated database technology.

Minimum credits	37
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (7 credits)

Take the following:

ENG 131 Writing Experience I

MAT 131 Intermediate Algebra or higher

eCOMMERCE CONSULTANT CORE REQUIREMENTS – (30 credits)

Take the following:

CIS 101 Introduction to Computer Systems

CIS 122 Microsoft® Access® Comprehensive-Windows®

CIS 125 Microsoft® Expressions® Web

CIS 134 Graphic Imaging (Adobe® Photoshop®)

CIS 135 Open Source Web Design

CIS 143 HTML

CIS 244 Web Programming

CIS 246 Web Integration with Database

ECM 101 eCommerce Fundamentals

ECM 201 Advanced Information Technologies

ECM 220 eBusiness II: SEO/Management

ENT 160 Intro to Entrepreneurship

**WEB TECHNOLOGY: eCOMMERCE SPECIALIST –
CONCENTRATION (WTES.CON)**

Upon completion, students will be skilled to design an eCommerce site, manage its traffic and maximize the appearance of the site in search engine results.

Minimum credits	19
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	6
MACRAO Agreement	No

eCOMMERCE SPECIALIST CORE REQUIREMENTS – (19 credits)

Take the following:

CIS 101	Introduction to Computer Systems
CIS 125	Microsoft® Expressions® Web
CIS 134	Graphic Imaging (Adobe® Photoshop®)
CIS 135	Open Source Web Design
CIS 143	HTML
ECM 101	eCommerce Fundamentals
ECM 201	Advanced Information Technologies
ECM 220	eBusiness II: SEO/Management

**WEB TECHNOLOGY: eCOMMERCE ENTREPRENEUR –
CONCENTRATION (WTEE.CON)**

Upon completion students will be skilled to assess the opportunities available to launch an entrepreneurial venture, as well as develop a plan to incorporate an eCommerce website.

Minimum credits	23
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	6
MACRAO Agreement	No

**eCOMMERCE ENTREPRENEUR CORE
REQUIREMENTS – (23 credits)**

Take the following:

CIS 101	Introduction to Computer Systems
CIS 125	Microsoft® Expressions® Web
CIS 135	Open Source Web Design
CIS 143	HTML
ENT 160	Intro to Entrepreneurship
ENT 161	Opportunity Analysis
ENT 169	Business Plan
ECM 101	eCommerce Fundamentals
ECM 201	Advanced Information Technologies
ECM 220	eBusiness II: SEO/Management

**WEB TECHNOLOGY: eCOMMERCE DESIGNER –
SKILL SET (WTED.SSET)**

Upon completion students will be skilled to use open source or boxed software to build an eCommerce website considerate of legal requirements, eCommerce concepts, and technology requirements.

Minimum credits	5
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	5
MACRAO Agreement	No

eCOMMERCE DESIGNER CORE REQUIREMENTS- (5 credits)

Take the following:

EMC 101	eCommerce Fundamentals
CIS 125	Microsoft® Expressions® Web
CIS 135	Open Source Web Design

**WEB TECHNOLOGY: eCOMMERCE MANAGER – SKILL SET
(WTEM.SSET)**

Upon completion students will be skilled to manage an eCommerce site's search engine optimization, share product files across platforms, and utilize mobile technologies and advertising campaigns to ensure optimal efficiency of the site.

Minimum credits	9
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	6
MACRAO Agreement	No

eCOMMERCE MANAGER CORE REQUIREMENTS – (9 credits)

Take the following:

ECM 101	eCommerce Fundamentals
ECM 201	Advanced Information Technologies
ECM 220	eBusiness II: SEO/Management

**ADMINISTRATIVE ASSISTANT – ASSOCIATE IN APPLIED
SCIENCE (ADAS.AAS)**

This degree provides a solid foundation for students seeking higher-level support positions in office settings where increased responsibilities require technical skills in business communications, interpersonal relations, desktop publishing, presentation software, accounting and database software. Office and support staff personnel are in great demand everywhere today. Employment opportunities for secretaries and administrative assistants are expected to grow through the year 2014. Students completing this program could be hired for above entry-level positions such as office information assistants, office systems supervisors, administrative office systems assistants, administrative secretaries and executive assistants.

Minimum credits	63
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (24 credits)**ADO 1: Write clearly, concisely and intelligibly (6 credits)****Take the following:**

ENG 131 Writing Experience I

ENG 232 Technical & Business Writing

or ENG 132 Writing Experience II

ADO 2: Speak clearly, concisely and intelligibly (3 credits)**Choose one of the following:**

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)**Take the following:**

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)**Choose one of the following:**

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Anatomy & Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3 credits)**Choose one of the following:**

ECN 231 Macroeconomics

ECN 232 Microeconomics

PLS 141 American National Government

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)**Choose one of the following:**

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)**Choose one of the following:**

HPF 160 Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

ADMINISTRATIVE ASSISTANT RELATED REQUIREMENTS – (8 credits)**Take the following:**

ACC 115 Payroll Accounting

BUA 121 Leadership

BUA 130 Customer Service

ADMINISTRATIVE ASSISTANT CORE REQUIREMENTS – (31 credits)**Take the following:**

CIS 101 Introduction to Computer Systems

or CIS 201 Advanced Information Technologies

CIS 110 Beginning Keyboarding/Typing

CIS 111 Intermediate Keyboarding/Typing

CIS 117 Microsoft® Outlook® Workshop

CIS 118 Microsoft® Publisher® Windows®

CIS 119 Microsoft® PowerPoint®

CIS 120 Microsoft® Word® Comprehensive

CIS 121 Microsoft® Excel® Comprehensive

CIS 122 Microsoft® Access® Comprehensive

CIS 147 Web Page Design I (Dreamweaver®)

or CIS 125 Microsoft® Expression Web®

CIS 210 Office Administration Systems

CIS 245 Internship/Externship



CULINARY ARTS & HOSPITALITY MANAGEMENT – ASSOCIATE IN APPLIED SCIENCE (CUAR.AAS)

This program prepares students for a career as a professional culinarian in a restaurant, hospitality, or institutional setting. Culinary arts professionals have a variety of responsibilities that may include supervising and coordinating the activities of food service workers or dining room employees, planning menus, estimating daily or weekly needs, ordering and maintaining inventories of supplies and equipment, and keeping records of meals served. The program also provides a foundation for continued culinary arts studies at a four-year college, the chef certification through the American Culinary Federation (ACF) as well as the NRAEF ManageFirst and the ServSafe National Certification.

Minimum credits	70
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO agreement	No

GENERAL EDUCATION REQUIREMENTS – (17 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience

ADO 2: Speak clearly, concisely and intelligibly

Program courses meet this requirement

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Anatomy and Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3 credits)

Choose one of the following:

ECN 231 Macroeconomics

ECN 232 Microeconomics

PLS 141 American National Government

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story and Novel

ENG 247 Poetry and Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Program courses meet this requirement

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

CULINARY ARTS AND HOSPITALITY MANAGEMENT RELATED REQUIREMENTS – (5 credits)

Take the following:

CIS 101 Computer Information Systems

ENT 160 Introduction to Entrepreneurship

CULINARY ARTS AND HOSPITALITY MANAGEMENT CORE REQUIREMENTS - (48 credits)

Take the following:

CUL 100 Introduction to Hospitality

CUL 111 Food Handling & Alcohol Service

CUL 114 Baking I

CUL 115 Baking and Pastry II

CUL 118 Nutrition for Food Service and Culinary Professionals

CUL 120 Culinary Skills

CUL 121 Introduction to Food Production Techniques

CUL 150 Food Service Management

CUL 175 International Cuisine

CUL 210 Garde Manger

CUL 224 Food and Beverage Cost Control

CUL 227 Contemporary Cuisine

CUL 228 Food Service Layout and Design

CUL 230 Quantity Food Production

CUL 231 À la Carte Kitchen

CUL 250 Principles of Beverage Service

CULINARY ARTS – CERTIFICATE (CUAR.CERT)

Culinary arts professionals have a variety of responsibilities that may include supervising and coordinating the activities of food service workers or dining room employees, planning menus, estimating daily or weekly needs, ordering and maintaining inventories of supplies and equipment, and keeping records of meals served. The certificate will prepare students for entry-level employment in areas of cooking, baking or food service management.

Minimum credits	37
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (7 credits)

ENG 131 Writing Experience
MAT 131 Intermediate Algebra or higher

CULINARY ARTS RELATED REQUIREMENTS – (3 credits)

Take the following:

CIS 101 Computer Information Systems

CULINARY ARTS CORE REQUIREMENTS – (27 credits)

Take the following:

CUL 100 Introduction to Hospitality Management
CUL 111 Food Handling & Alcohol Service
CUL 114 Baking I
CUL 115 Baking and Pastry II
CUL 120 Introduction to Culinary Skills
CUL 121 Introduction to Food Preparation Techniques
CUL 210 Garde Manger
CUL 230 Quantity Food Production
CUL 231 À la Carte Kitchen

CULINARY ARTS – CONCENTRATION (CUAR.CON)

The rapidly growing hospitality industry offers various management careers in food and beverage, hotel and culinary arts. A balance of classroom, laboratory, and work experience opportunities combine in this program to provide management preparation for this challenging industry. The culinary arts concentration is primarily designed to prepare students for entry-level positions as chefs.

Minimum credits	18
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (18 credits)

Take the following:

CUL 100 Introduction to Hospitality
CUL 111 Food Handling & Alcohol Service
CUL 114 Baking I
CUL 115 Baking and Pastry II
CUL 120 Culinary Skills
CUL 121 Introduction to Food Production Techniques

CULINARY ARTS – SKILL SET (CUAR.SSET)

Provides hands-on training in hot and cold cooking, culinary skills, sanitation, purchasing, professional baking and cost controls. The culinary arts skill set prepares students for entry-level positions in the food service industry. The 12-credit-hour program includes classes in sanitation and safety, introduction to hospitality, culinary skills and baking.

Minimum credits	12
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (12 credits)

Take the following:

CUL 100 Introduction to Hospitality
CUL 110 Food Handling & Alcohol Service
CUL 114 Baking I
CUL 120 Culinary Skills



ACCOUNTING OR BUSINESS ADMINISTRATION BACHELOR'S DEGREE OPTION WITH SIENA HEIGHTS UNIVERSITY

Through an articulation agreement with Siena Heights University, graduates of JCC's two-year business programs can earn a Bachelor of Arts in accounting or a Bachelor of Arts in business. Students can work with JCC and Siena Heights staff members to select a completion program for their specific career goals. All the courses required to earn a bachelor's degree are available at Jackson Community College's main campus through the Siena Heights University degree-completion center.

TRANSFER – COMPUTER SCIENCE

Computer science majors can concentrate and think logically, and enjoy working with ideas and solving problems. They become computer programmers, systems analysts, systems programmers and software engineers, have careers in telecommunications and computer operations, and hold positions in computer sales, design and manufacturing. The requirements for this degree – especially mathematics and science requirements – vary considerably among transfer institutions. Please see an advisor for more information.

SUGGESTED COURSE SEQUENCE FOR COMPUTER SCIENCE**First Year, Fall Semester**

ENG 131, MAT 151, CEM 141, MACRAO humanities course

First Year, Winter Semester

ENG 132, CPS 177, MAT 154, ECN 231, PHL 232

Second Year, Fall Semester

CPS 217, MAT 251, PHY 251, MACRAO social science course

Second Year, Winter Semester

MAT 254, MACRAO social science and humanities courses

ADMINISTRATIVE ASSISTANT – BACHELOR'S DEGREE OPTION WITH SIENA HEIGHTS UNIVERSITY

Students can work with staff from JCC and Siena Heights University to earn a Bachelor of Arts degree for administrative assistant. Tailored to build on the JCC administrative assistant associate degree, students can transfer up to 90 credits from JCC and complete at least 30 credit hours from Siena.

MICROCOMPUTER APPLICATIONS – BACHELOR'S DEGREE OPTION WITH SIENA HEIGHTS UNIVERSITY

Students can work with staff from JCC and Siena Heights University to earn a Bachelor of Arts degree for microcomputer applications. Tailored to build on the JCC microcomputer applications specialist associate degree, students can transfer up to 90 credits from JCC and complete at least 30 credit hours from Siena.

**ENGINEERING/MANUFACTURING AND INDUSTRIAL TECHNOLOGY PATHWAY**

This pathway includes careers related to technologies necessary to design, develop, install or maintain physical systems. These may include engineering and related technologies, manufacturing technology, precision production and construction.

DEGREES/CERTIFICATES

- Alternative Energy
- Automotive Service Technology
- Aviation Technology
- Electrician
- Electronic Technology/ELT
- Electronic Technology/Microcomputer Support
- Manufacturing Tech/Machining
- Manufacturing Tech/Maintenance
- Manufacturing Tech/Tool Room

TRANSFER PROGRAMS

The first two years of a student's college education usually consists of general study courses, introductory courses in a major and/or program of study, and selected electives. Refer to page 39 for additional information on transfer and MACRAO. Academic advisors assist students in planning their transfer program. They can also provide transfer guide sheets indicating JCC courses that meet the requirements of various programs of study at four-year colleges. Sample curricula for a few popular transfer programs are included.

- Pre-Architecture
- Engineering

Jackson Community College has published this catalog for information purposes only and its contents do not constitute a contract between this institution and prospective or enrolled students. The information contained in this general College catalog reflects the current curricula, policies and regulations of the College. However, these are subject to change at any time by action of the Board of Trustees or the administration. The information is generally believed to be accurate, but the College disclaims liability for inadvertent errors or omissions.

AUTOMOTIVE COLLISION REPAIR – ASSOCIATE IN APPLIED SCIENCE (ACRE.AAS)

JCC utilizes the Inter-industry Conference on Automotive Collision Repair (I-CAR) Enhanced Delivery Curriculum. Based on the tasks established by I-CAR, this two-year program provides students with skills to restore collision damaged vehicles to industry standards. The importance of certification and training continues to increase in the industry among body shops and insurance companies. In response to this demand, a graduate of the program has the potential to receive 70 I-CAR Gold Points and four ASE certifications. Graduates may also take the Michigan Motor Vehicle License exams for Unitized Body Structural Repair and Collision-Related Mechanical Repair. ASE certifications in body work and painting are also available.

Program graduates are trained in five major body repair groups:

- Collision repair fundamentals
- Non-Structural analysis & damage repair
- Structural analysis & damage repair
- Painting & refinishing
- Mechanical & electrical components repair

Upon completing the program, graduates are qualified for entry-level positions as collision repair technicians or automotive refinish technicians, with the option to pursue careers in management, estimating and sales. Students interested in earning an Associate in Applied Science degree in collision repair technology will take all required automotive collision repair technology courses, plus electives, and general education courses.

Minimum credits	68
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC AUT credits	44
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (17 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly

Program courses meet this requirement

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Choose one of the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Anatomy & Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy & Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics

ECN 232 Microeconomics

HIS 131 Western Civilization to 1555

HIS 132 Western Civilization 1555 to Present

HIS 231 Development of the US through the Civil War

HIS 232 Development of the US from the Civil War

HIS 235 20th Century History

PLS 141 American National Government

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Program courses meet this requirement

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

AUTOMOTIVE COLLISION REPAIR CORE REQUIREMENTS – (48 credits)

Take the following:

AUT 102 Engine Performance I

AUT 103 Engine Performance II

AUT 105 Braking Systems

AUT 106 Steering & Suspension

AUT 108 Air Conditioning & Heating

AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II
 AUT 184 Fundamentals of Collision Repair
 AUT 186 Non-Structural Damage Repair
 AUT 188 Welding & Cutting Steel/Aluminum
 AUT 190 Structural Damage Repair
 AUT 204 Manual Transmissions & Drivelines
 AUT 290 Paint & Refinish I
 AUT 292 Paint & Refinish II
 AUT 210 Internship/Externship

AUTOMOTIVE COLLISION REPAIR ELECTIVES – (3 credits)

Choose from the following:

AUT 118 Diesel Fundamentals
 AUT 160 Alternate Fuels
 AUT 201 Engine Repair
 AUT 202 Automatic Transmissions
 AUT 203 Advanced Engine Performance
 AUT 211 Internship/Externship
 AUT 212 Internship/Externship
 AUT 214 Auto Lab Experience
 AUT 240 Hybrid Technology
 AUT 248 Diesel Engine Performance
 AUT 294 Collision Shop Layout

AUTOMOTIVE COLLISION REPAIR – CERTIFICATE (ACRE.CERT)

In this real-world setting, students use modern equipment such as three electronic measuring systems, body and frame machines, two down-draft spray booths, computerized mixing systems, prep stations, MIG welders and a resistant spot welder. JCC utilizes the Inter-industry Conference on Automotive Collision Repair (I-CAR) Enhanced Delivery Curriculum.

The following sections are sequenced with prerequisites for student success. Those students wishing to further their education can apply these courses directly toward our Associate of Applied Science (AAS) program.

Minimum credits	55
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
Minimum AUT credits	12
MACRAO Agreement	No

AUTOMOTIVE COLLISION REPAIR GENERAL EDUCATION REQUIREMENTS – (7 credits)

Take the following:

ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher

AUTOMOTIVE COLLISION REPAIR CORE REQUIREMENTS – (48 credits)

Take the following:

AUT 102 Engine Performance I
 AUT 103 Engine Performance II
 AUT 105 Braking Systems
 AUT 106 Steering & Suspension
 AUT 108 Air Conditioning & Heating

AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II
 AUT 184 Fundamentals of Collision Repair
 AUT 186 Non-Structural Damage Repair
 AUT 188 Welding & Cutting Steel/Aluminum
 AUT 190 Structural Damage Repair
 AUT 204 Manual Transmissions & Drivelines
 AUT 290 Paint & Refinish I
 AUT 292 Paint & Refinish II
 AUT 210 Internship/Externship

COLLISION MECHANICAL & ELECTRICAL – CONCENTRATION (COME.CON)

Students will be exposed to various automotive processes including electrical systems, mechanical repairs, and general diagnosis. Students will apply learned skills to collision-related repairs. This concentration prepares students for entry-level positions within a collision repair facility.

Minimum credits	24
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (24 credits)

Take the following:

AUT 102 Engine Performance I
 AUT 103 Engine Performance II
 AUT 105 Braking Systems
 AUT 106 Steering & Suspension
 AUT 108 Air Conditioning & Heating
 AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II
 AUT 204 Manual Transmissions & Drivelines

COLLISION BODY TECH – CONCENTRATION (COBT.CON)

This concentration allows students to focus on a career in collision repair with emphasis on structural and non-structural components of the automobile. Through repair of vehicles students will develop and apply skills such as welding, damage analysis and refinishing. This concentration prepares students for employment as a body technician in the auto repair industry.

Minimum credits	16
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (16 credits)

Take the following:

AUT 184 Fundamentals of Collision Repair
 AUT 186 Non-Structural Damage Repair
 AUT 188 Welding & Cutting Steel/Aluminum
 AUT 190 Structural Damage Repair
 AUT 210 Internship/Externship

COLLISION NON-STRUCTURAL TECH – SKILL SET (CONT.SSET)

This foundational skill set is designed to expose students to the automotive collision environment. Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	6
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	6
MACRAO Agreement	No

REQUIRED COURSES – (6 credits)

Take the following:

AUT 184 Fundamentals of Collision Repair

AUT 186 Non-Structural Damage Repair

COLLISION BODY TECH – SKILL SET (COBT.SSET)

Students will focus on a career in collision repair with emphasis on welding techniques and damage analysis. Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	6
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	6
MACRAO Agreement	No

REQUIRED COURSES – (6 credits)

Take the following:

AUT 188 Welding & Cutting Steel/Aluminum

AUT 190 Structural Damage Repair

COLLISION REFINISHING TECH – SKILL SET (CORT.SSET)

This foundational skill set is designed to expose students to collision repair and refinishing. Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	6
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	6
MACRAO Agreement	No

REQUIRED COURSES – (6 credits)

Take the following:

AUT 290 Paint & Refinish I

AUT 292 Paint & Refinish II

AUTOMOTIVE SERVICE TECHNOLOGY– ASSOCIATE IN APPLIED SCIENCE (AUTO.AAS)

Designed for the student preparing for a career in the automotive field. Classroom activities provide students an opportunity to learn theory and test-taking skills to successfully pass the Michigan and/or ASE certification examinations. Shop activities provide students an opportunity to become proficient in testing, diagnosing and servicing the various systems of the automobile. All eight areas of an automotive certification are thoroughly covered, and when combined with general and related courses, lead to an Associate in Applied Science degree.

This provides the background for employment and advancement in various automotive-related occupations such as service technician, service writer, service manager, proving grounds testing technician, shop owner, parts specialist, automotive machinist, alternate fuel vehicle technician, technical sales and motor sports.

As part of the Ford Maintenance and Light Repair network, our Ford corporate-sponsored connection, students have the option to enter into the Ford MLR program. This prepares students to work as a technician in Ford, Lincoln or Mercury dealerships. These students take the same automotive classes as other students with some important differences. Ford MLR students concentrate on electrical systems, climate control, brakes, and suspension and steering. They utilize Ford training materials including service manuals, electrical/vacuum troubleshooting manuals, technical service bulletins, use Ford-approved tools and equipment, work on Ford automobiles/light trucks and use Ford web-based training with exit tests. Upon successful completion of the courses, students are Ford certified with Service Technician Specialty Training credentials. With these credentials students will receive assistance in obtaining Ford, Lincoln or Mercury dealership placement to work in the areas of certification.

Minimum credits	62
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC AUT credits	12
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (17 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly
Program courses meet this requirement

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Choose one of the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Anatomy & Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I
 GEL 160 Introduction to Geology
 NSC 131 Contemporary Science
 PHY 131 Conceptual Physics
 PHY 151 Astronomy
 PHY 231 College Physics I
 PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics
 ECN 232 Microeconomics
 HIS 131 Western Civilization to 1555
 HIS 132 Western Civilization 1555 to Present
 HIS 231 Development of the US through the Civil War
 HIS 232 Development of the US from the Civil War
 HIS 235 20th Century History
 PLS 141 American National Government
 PSY 140 Introduction to Psychology
 SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically
 Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts
 Program courses meet this requirement

ADO 9: Work productively with others, recognizing individual contributions to group success
 Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures
 Program courses meet this requirement

AUTOMOTIVE SERVICE TECHNOLOGY CORE REQUIREMENTS – (42 credits)

Take the following:

AUT 101 General Service
 AUT 102 Engine Performance I
 AUT 103 Engine Performance II
 AUT 105 Automotive Brakes
 AUT 106 Suspension & Steering

AUT 108 Automotive Air Conditioning/Heating
 AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II
 AUT 201 Engine Repair
 AUT 202 Automatic Transmission
 AUT 204 Manual Transmissions & Drivelines
 AUT 210 Internship/Externship
 AUT 234 Undercar Service

AUTOMOTIVE SERVICE TECHNOLOGY ELECTIVES – (3 credits)

Choose from the following:

AUT 118 Diesel Fundamentals
 AUT 160 Alternate Fuels
 AUT 203 Advanced Engine Performance
 AUT 211 Internship/Externship
 AUT 212 Internship/Externship
 AUT 214 Auto Lab Experience
 AUT 240 Hybrid Technology
 AUT 248 Diesel Engine Performance

AUTOMOTIVE SERVICE TECHNOLOGY – CERTIFICATE (AUTO.CERT)

Designed for the student preparing for a career in the automotive field. Classroom activities provide students an opportunity to learn theory and test-taking skills to successfully pass the Michigan and/or ASE certification examinations. Shop activities provide students an opportunity to become proficient in testing, diagnosing and servicing the various systems of the automobile. All eight areas of an automotive certification are thoroughly covered, and when combined with general and related courses, lead to an Associate in Applied Science degree.

Minimum credits	49
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
Minimum AUT credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (7 credits)

Take the following:

ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher

AUTOMOTIVE SERVICE TECHNOLOGY CORE REQUIREMENTS – (42 credits)

Take the following:

AUT 101 General Service
 AUT 102 Engine Performance I
 AUT 103 Engine Performance II
 AUT 105 Automotive Brakes
 AUT 106 Suspension & Steering
 AUT 108 Automotive Air Conditioning/Heating
 AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II
 AUT 201 Engine Repair
 AUT 202 Automatic Transmission
 AUT 204 Manual Transmissions & Drivelines
 AUT 210 Internship/Externship
 AUT 234 Undercar Service

DRIVEABILITY – CONCENTRATION (DRAB.CON)

Students will be exposed to procedures of engine performance and diagnosis of the internal combustion engine. Students will learn how to make a logical diagnosis based on vehicle operation. Focus will be on correct use of specifications, equipment, and interpretation of test results. This concentration prepares students for employment as an auto technician in the auto repair industry.

Minimum credits	21
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (21 credits)

Take the following:

AUT 102 Engine Performance I
 AUT 103 Engine Performance II
 AUT 108 Automotive Air Conditioning/Heating
 AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II
 AUT 210 Internship/Externship

FORD SERVICE – CONCENTRATION (FOSE.CON)

Students will be exposed to the Ford Maintenance and Light Repair program with an emphasis on electrical systems, climate control, brakes, and suspension and steering. MLR students will train on Ford vehicles using Ford-approved tools, training materials, and Ford service manuals. This training prepares students for work in a Ford dealership.

Minimum credits	21
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (21 credits)

Take the following:

AUT 101 General Service
 AUT 105 Brakes
 AUT 106 Steering & Suspension
 AUT 108 Air Conditioning and Heating Systems
 AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II
 AUT 234 Undercar Service
 AUT 240 Hybrid Technology

HIGH SPEED DIESEL SERVICE – CONCENTRATION (HSDS.CON)

In this program, emphasis is on the principles of diesel operation and fuel systems. The focus will be on diesel engine performance, electronic fuel injection, and diesel fundamentals. This concentration prepares students for employment in the transportation industry with a focus on diesel repair.

Minimum credits	17
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (17 credits)

Take the following:

AUT 101 General Service
 AUT 102 Engine Performance I
 AUT 103 Engine Performance II
 AUT 112 Electrical Systems I
 AUT 118 Diesel Fundamentals
 AUT 248 Diesel Engine Performance

HYBRID VEHICLES – CONCENTRATION (HYVE.CON)

Students will be exposed to hybrid electric vehicles. Fundamental information will be reviewed focusing on engine performance, hybrid technology, diagnostics, and maintenance. This concentration prepares students for employment in the auto repair industry.

Minimum credits	16
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (16 credits)

Take the following:

AUT 102 Engine Performance I
 AUT 103 Engine Performance II
 AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II
 AUT 240 Hybrid Technology

MAINTENANCE & LIGHT REPAIR – CONCENTRATION (MALR.CON)

Students will focus on repair and maintenance of the automobile. These skills include suspension and steering systems, electrical systems, heating and cooling systems, and braking systems. This concentration prepares students for employment as an auto technician in the auto repair industry.

Minimum credits	19
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (19 credits)

Take the following:

AUT 105 Brakes
 AUT 106 Suspension & Steering
 AUT 108 Air Conditioning and Heating Systems
 AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II
 AUT 210 Internship/Externship

POWERTRAIN – CONCENTRATION (PWTR.CON)

Students will be exposed to engine repair, automatic transmissions, manual transmissions, and undercar service. This concentration prepares students for employment as an auto technician in the auto repair industry.

Minimum credits	17
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (17 credits)

Take the following:

AUT 201 Engine Repair
 AUT 202 Automatic Transmission
 AUT 204 Manual Transmissions & Drivelines
 AUT 210 Internship/Externship
 AUT 234 Undercar Service

UNDERCAR SERVICES – CONCENTRATION (UCSR.CON)

Students will receive training in general service with emphasis on welding, pipe bending and torch use. An overview of brakes and suspension and steering is included. This concentration prepares students for employment as an auto technician in the auto repair industry.

Minimum credits	17
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (17 credits)

Take the following:

AUT 101 General Service
 AUT 105 Automotive Brakes
 AUT 106 Suspension & Steering
 AUT 108 Auto Air Conditioning/Heating
 AUT 210 Internship/Externship
 AUT 234 Undercar Service

WHEEL SERVICE – CONCENTRATION (WHSR.CON)

Students will receive training in wheel service skills as part of the overall diagnoses of the automobile. Subjects include brakes, suspension and steering, undercar, and electrical systems. This concentration prepares students for employment as an auto technician in the auto repair industry.

Minimum credits	17
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (17 credits)

Take the following:

AUT 101 General Service
 AUT 105 Automotive Brakes
 AUT 106 Suspension & Steering
 AUT 112 Electrical Systems I
 AUT 210 Internship/Externship
 AUT 234 Undercar Service

HIGH SPEED DIESEL SERVICE – SKILL SET (HSDS.SSET)

This foundational skill set is designed to expose students to basic diesel fundamentals. Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	4
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	4
MACRAO Agreement	No

REQUIRED COURSES – (4 credits)

Take the following:

AUT 118 Diesel Fundamentals
 AUT 248 Diesel Engine Performance

HYBRID VEHICLES – SKILL SET (HYVE.SSET)

Students will be exposed to hybrid electric vehicles focusing on engine performance and hybrid technology. Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	9
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	9
MACRAO Agreement	No

REQUIRED COURSES – (9 credits)

Take the following:

AUT 102 Engine Performance I
 AUT 112 Electrical Systems I
 AUT 240 Hybrid Technology

MAINTENANCE & LIGHT REPAIR – SKILL SET (MALR.SSET)

This foundational skill set is designed to expose students to repair and maintenance of the automobile. Fundamental skills will include suspension and steering, electrical systems, heating and cooling systems and brakes. Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	15
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	15
MACRAO Agreement	No

REQUIRED COURSES – (15 credits)

Take the following:

AUT 105 Brakes
 AUT 106 Steering & Suspension
 AUT 108 Air Conditioning and Heating Systems
 AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II

AIR CONDITIONING & HEATING – SKILL SET (ACAH.SSET)

This foundational skill set focuses on heating and cooling systems so that students have the basic understanding and knowledge to diagnose and repair air conditioning and heating systems. Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	9
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	9
MACRAO Agreement	No

REQUIRED COURSES – (9 credits)

Take the following:

AUT 108 Air Conditioning & Heating Systems
 AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II

WHEEL SERVICE – SKILL SET (WHSE.SSET)

The emphasis in this skill set is on wheel service and how this system is impacted by brakes and steering and suspension. It provides a foundation basis for students. Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	6
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	6
MACRAO Agreement	No

REQUIRED COURSES – (6 credits)

Take the following:

AUT 105 Brakes
 AUT 106 Steering & Suspension

UNDERCAR SERVICE – SKILL SET (UCSR.SSET)

The emphasis in this skill set is on pipe bending and welding. Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	8
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	8
MACRAO Agreement	No

REQUIRED COURSES – (8 credits)

Take the following:

AUT 105 Brakes
 AUT 106 Steering & Suspension
 AUT 234 Undercar Service

POWERTRAIN – SKILL SET (PWTR.SSET)

The emphasis in this skill set is on the power developed in the engine and power flow through driveline components. Students will learn the basics of engine repair, automatic transmissions, and manual transmissions.

Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	11
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	11
MACRAO Agreement	No

REQUIRED COURSES – (11 credits)

Take the following:

AUT 201 Engine Repair
 AUT 202 Automatic Transmission
 AUT 204 Manual Transmissions & Drivelines

DRIVEABILITY – SKILL SET (DRAB.SSET)

Students will be exposed to driveability diagnosis with a focus on engine performance. Students may want to further this exposure through additional automotive course work in related concentrations, certificates or an associate degree.

Minimum credits	14
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	14
MACRAO Agreement	No

REQUIRED COURSES – (14 credits)

Take the following:

AUT 102 Engine Performance I
 AUT 103 Engine Performance II
 AUT 112 Electrical Systems I
 AUT 113 Electrical Systems II



ALTERNATIVE ENERGY – ASSOCIATE IN APPLIED SCIENCE (ALEN.AAS)

This program is designed for the student preparing for a career in the emerging field of alternative energy. The economic potential of the clean energy economy has been an increasingly high profile topic in Michigan and across the nation. Many reports and analyses have predicted high job growth within the alternative energy sector. Courses and labs within the program will provide students an opportunity to learn theory and skills required to design, install, operate and maintain alternative energy systems for both residential and small commercial applications. Specific training topics include: energy efficiency, photovoltaic systems, wind turbines, geothermal systems, solar thermal systems, bio-fuels and hydrogen fuel cells. Typical job opportunities may be found with firms that produce parts, components, products and/or services, including installation and distribution of alternative energy systems.

Minimum credits	68
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (23 credits)
ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4credits)

Take the following:

PHY 131 Conceptual Physics

ADO 5: Understand human behavior and social systems, the principles which govern them and their implications for the present and future (3 credits)

Choose one of the following:

ECN 231 Macroeconomics

ECN 232 Microeconomics

HIS 131 Western Civilization to 1555

HIS 132 Western Civilization 1555 to Present

HIS 231 Development of the US through the Civil War

HIS 232 Development of the US from the Civil War

HIS 235 20th Century History

PLS 141 American National Government

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Program courses meet this requirement

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures (3 credits)

Take one of the following:

ANT 131 Cultural Anthropology

ENG 236 Women in Changing Society

ENG 249 African-American Literature

ENG 257 World Literature

FRN 131 French I or higher

GEO 132 World Regions

GER 131 German I or higher

HIS 125 African-American History

HUM 131 Cultural Connections

MUS 130 Music of Non-Western Cultures

PHL 243 World Religions

PLS 262 International Relations

SOC 235 Minority Groups in America

SOC 236 Women in Changing Society

SPN 131 Spanish I or higher

ALTERNATIVE ENERGY RELATED REQUIREMENTS – (24 credits)

Take the following:

CCT 121 Introduction to HVAC

ELT 120 Circuit Analysis I

ELT 125 Circuit Analysis II

ELT 150 Residential Wiring

ELT 151 Commercial Wiring

ELT 250 Electric Motors and Controls

ELT 274 Electricians National Code

STM 101 Introduction to Sustainability

ALTERNATIVE ENERGY CORE REQUIREMENTS – (21 credits)

Take the following:

ALT 200 Principles of Alternative Energy

or ELT 160 Principles of Alternative Energy

ALT 210 Fundamentals of Energy Efficiency

or CCT 160 Fundamentals of Energy Efficiency

ALT 250 Wind Energy

or ELT 163 Wind Energy

ALT 255 Solar Energy

or ELT 163 Solar Energy

ALT 260 Geothermal Energy & Systems
 or ELT 165 Geothermal Energy & Systems
 ALT 265 Solar Thermal Energy & Systems
 or CCT 167 Solar Thermal Energy & Systems
 ALT 270 Alternate Fuels
 or AUT 160 Alternate Fuels

ALTERNATIVE ENERGY ADDITIONAL REQUIREMENTS

EMS 110 Advanced First Aid & American Heart CPR
 or current Adult CPR and First Aid Certification

AVIATION FLIGHT TECHNOLOGY – ASSOCIATE IN APPLIED SCIENCE (AVFT.AAS)

Basic ground school and flight instruction needed to meet the requirements of the Federal Aviation Administration's Commercial Pilot certificate with instrument ratings.* Federal and/or Michigan law may require that enrollees in the aviation program undergo an FBI background check. Contact the director of aviation with questions.

Minimum credits	62
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4 credits)

Take the following:

PHY 231 College Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (4 credits)

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

AVIATION FLIGHT TECHNOLOGY RELATED REQUIREMENTS – (6 credits)

Take the following:

CIS 101 Introduction to Computer Systems

MAT 133 Introduction to Probability & Statistics

AVIATION FLIGHT TECHNOLOGY CORE REQUIREMENTS – (34 credits)

Take the following:

AFT 110 Primary Ground School

AFT 112 Primary Flight I

AFT 114 Primary Flight II

AFT 116 Primary Flight III

AFT 125 Commercial Ground School

AFT 130 Commercial Flight I

AFT 135 Instrumental Ground School

AFT 140 Commercial Flight II

AFT 200 Commercial Flight III

AFT 205 Commercial Flight IV

**All enrollees must be capable of attaining the FAA class II medical certificate.*



**ELECTRICIAN – ASSOCIATE IN APPLIED SCIENCE
(ELEC.AAS)**

Electricians install and maintain electrical systems in residential construction and commercial buildings. They also work in manufacturing settings often servicing highly automated industrial processes. Increasingly electricians will be required to wire computer networks and telecommunications. This program will prepare students to work in each of these applications of electricity.

Minimum credits	63
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)
ADO 1: Write clearly, concisely and intelligibly – (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly – (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Anatomy & Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics

ECN 232 Microeconomics

HIS 131 Western Civilization to 1555

HIS 132 Western Civilization 1555 to Present

HIS 231 Development of the US through the Civil War

HIS 232 Development of the US from the Civil War

HIS 235 20th Century History

PLS 141 American National Government

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

ELECTRICIAN CORE REQUIREMENTS – (43 credits)

Take the following:

ELT 120 Circuit Analysis I

ELT 125 Circuit Analysis II

ELT 130 Electronics I

ELT 140 Introduction to Digital Electronics

ELT 148 Electrical Math I

ELT 149 Electrical Math II

ELT 150 Residential Wiring

ELT 151 Commercial Wiring

ELT 152 Industrial Wiring

ELT 215 Electrical Troubleshooting

ELT 220 Industrial Motion Control

ELT 250 Electrical Motors & Controls

ELT 260 Basic Programmable Controllers

ELT 261 Advanced PLC Programming

ELT 274 Electrician's National Code

ELECTRICIAN ADDITIONAL REQUIREMENTS

EMS 110 Advanced First Aid & American Heart CPR
or current Adult CPR and First Aid Certification

ELECTRICIAN – CERTIFICATE (ELEC.CERT)

Electricians install and maintain electrical systems in residential construction and commercial buildings. They also work in manufacturing settings often servicing highly automated industrial processes. Increasingly electricians will be required to wire computer networks and telecommunications. This program will prepare students to work in each of these applications of electricity.

Minimum credits	47
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (7 credits)**Take the following:**

ENG 131 Writing Experience I
MAT 131 Intermediate Algebra or higher

ELECTRICIAN CORE REQUIREMENTS – (41 credits)**Take the following:**

ELT 120 Circuit Analysis I
ELT 125 Circuit Analysis II
ELT 130 Electronics I
ELT 140 Introduction to Digital Electronics
ELT 148 Electrical Math I
ELT 149 Electrical Math II
ELT 150 Residential Wiring
ELT 151 Commercial Wiring
ELT 152 Industrial Wiring
ELT 215 Electrical Troubleshooting
ELT 220 Industrial Motion Control
ELT 250 Electrical Motors & Controls
ELT 260 Basic Programmable Controllers
ELT 274 Electrician's National Code

ADDITIONAL REQUIREMENTS

EMS 110 Advanced First Aid & American Heart CPR
or current Adult CPR and First Aid Certification

ELECTRICAL BASICS – CONCENTRATION (ELEC.COM)

Completion of this program provides a solid electrical foundation for the person seeking electrical or industrial maintenance mechanic training.

Minimum credits	17
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (17 credits)**Take the following:**

ELT 120 Circuit Analysis I
ELT 125 Circuit Analysis II
ELT 148 Electrical Math I
ELT 150 Residential Wiring
ELT 152 Industrial Wiring
ELT 260 Basic Programmable Controllers

ELECTRONIC TECHNOLOGY/ELT –**ASSOCIATE IN APPLIED SCIENCE (ETGE.AAS)**

Electronic technologists are employed in such fields as digital computer maintenance, voice and data communications, radio and television broadcasting, medical electronic instrumentation, high-tech manufacturing, research and development in laboratory settings. Students may also work to achieve A+ certification for employment as personal computer service professionals. A+ certification is the "journeyman's card" for computer technologists, which is recognized by CompTIA. The non-profit Computing Technology Industry Association (CompTIA) is widely recognized as the standard for qualified computer service professionals.

Minimum credits	65
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (22 credits)**ADO 1: Write clearly, concisely and intelligibly (3 credits)****Take the following:**

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)**Choose one of the following:**

COM 231 Communication Fundamentals
COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)**Take the following:**

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)**Choose one of the following:**

BIO 110 Introductory Biology
BIO 131 General Biology
BIO 132 Human Biology
BIO 155 Human Anatomy & Physiology
BIO 220 Microbiology
BIO 253 Human Anatomy and Physiology I
CEM 131 Fundamentals of Chemistry
CEM 141 General Chemistry I
GEL 160 Introduction to Geology
NSC 131 Contemporary Science
PHY 131 Conceptual Physics
PHY 151 Astronomy
PHY 231 College Physics I
PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)**Choose one of the following:**

ECN 231 Macroeconomics
ECN 232 Microeconomics
HIS 131 Western Civilization to 1555
HIS 132 Western Civilization 1555 to Present
HIS 231 Development of the US through the Civil War
HIS 232 Development of the US from the Civil War
HIS 235 20th Century History

PLS 141 American National Government
 PSY 140 Introduction to Psychology
 SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness
 HPF 186 Weight Training and Wellness
 HPF 277 Stress Management
 HPF 283 Managing Stress and Holistic Health
 PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

ELECTRONIC TECHNOLOGY RELATED REQUIREMENTS – (7 credits)

And choose either Transfer or Non-Transfer:

For Transfer group take the following:

CIS 170 Programming C++
 or CIS 160 Programming in Visual Basic.NET
 MAT 151 Calculus I

For Non-Transfer group take the following:

CIS 170 Programming C++
 or CIS 160 Programming in Visual Basic.NET

Plus up to 4 credits from the following:

Any ELT, CIS or CNS course that best meets your educational goals

ELECTRONIC TECHNOLOGY CORE REQUIREMENTS – (37 credits)

Take the following:

CIS 101 Introduction to Computer Systems
 CIS 174 PC Repair/A+ Hardware Component
 CIS 175 PC Repair/A+ Software Component
 CIS 176 A+ Certification Exam Preparation
 CNS 101 Network+/Networking Fundamentals
 ELT 120 Circuit Analysis I

ELT 125 Circuit Analysis II
 ELT 130 Electronics I
 ELT 140 Introduction to Digital Electronics
 ELT 250 Electric Motors & Controls
 ELT 260 Basic Programmable Controllers

ELECTRONIC TECHNOLOGY/ ELT – CERTIFICATE (ELTE.CERT)

Minimum credits	35
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (7 credits)

Take the following:

ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher

RELATED REQUIREMENTS – (3 credits)

Take one from the following:

CIS 160 Programming in Visual Basic.NET
 ELT 250 Electric Motors & Controls
 ELT 260 Basic Programmable Controllers

ELECTRONIC TECHNICIAN CORE REQUIREMENTS – (25 credits)

Take the following:

CIS 101 Introduction to Computer Systems
 CIS 174 PC Repair/A+ Hardware Component
 CIS 175 PC Repair/A+ Software Component
 CIS 176 A+ Certification Exam Preparation
 ELT 120 Circuit Analysis I
 ELT 125 Circuit Analysis II
 ELT 130 Electronics I
 ELT 140 Introduction to Digital Electronics

ELECTRONIC TECHNOLOGY/MICROCOMPUTER – ASSOCIATE IN APPLIED SCIENCE (ETMS.AAS)

Electronic technologists are employed in such fields as digital computer maintenance, voice and data communications, radio and television broadcasting, medical electronic instrumentation, high-tech manufacturing, research and development in laboratory settings. Students may also work to achieve A+ certification for employment as personal computer service professionals. A+ certification is the "journeyman's card" for computer technologists, which is recognized by CompTIA. The non-profit Computing Technology Industry Association (CompTIA) is widely recognized as the standard for qualified computer service professionals.

Minimum credits	67
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Take the following:

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Human Anatomy & Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics

ECN 232 Microeconomics

HIS 131 Western Civilization to 1555

HIS 132 Western Civilization 1555 to Present

HIS 231 Development of the US through the Civil War

HIS 232 Development of the US from the Civil War

HIS 235 20th Century History

PLS 141 American National Government

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

MICROCOMPUTER RELATED REQUIREMENTS – (7 credits)

Take the following:

CIS 160 Programming in Visual Basic NET

or CIS 170 Programming in C++

And choose 4 credits from the following:

Any ELT, CIS or CNS courses that best meets your educational goals.

MICROCOMPUTER CORE REQUIREMENTS – (39 credits)

Take the following:

BUA 120 Human Relations in Business

CIS 101 Introduction to Computer Systems

CIS 105 Windows® Workshop

CIS 106 Operating Systems: UNIX

CIS 107 Microsoft® DOS® Workshop

CIS 160 Programming in Visual Basic.Net

CIS 174 PC Repair/A+ Hardware Component

CIS 175 PC Repair/A+ Software

CIS 176 A+ Certification Exam Preparation

CIS 179 Network+ Certification Exam Preparation

CNS 101 Network+/Networking Fundamentals

ELT 120 Circuit Analysis I

ELT 125 Circuit Analysis II

ELT 130 Electronics

ELT 140 Introduction to Digital Electronics

**ELECTRONIC TECHNOLOGY/MICROCOMPUTER –
CERTIFICATE (ETMS.CERT)**

Minimum credits 42

Minimum cumulative GPA 2.0

Minimum grade in all courses 2.0

Minimum JCC credits 6

MACRAO Agreement No

GENERAL EDUCATION REQUIREMENTS – (7 credits)

Take the following:

ENG 131 Writing Experience I

MAT 131 Intermediate Algebra or higher

RELATED REQUIREMENTS – (3 credits)

Take one of the following:

CIS 160 Programming in Visual Basic.NET

ELT 250 Electric Motors & Controls

ELT 260 Basic Programmable Controllers

MICROCOMPUTER CORE REQUIREMENTS – (32 credits)

Take the following:

CIS 101 Introduction to Computer Systems
 CIS 105 Windows® Workshop
 CIS 106 Operating Systems: UNIX
 CIS 107 Microsoft® DOS® Workshop
 CIS 174 PC Repair/A+ Hardware Component
 CIS 175 PC Repair/A+ Software Component
 CIS 176 A+ Certification Exam Preparation
 CNS 101 Network+/Networking Fundamentals
 ELT 120 Circuit Analysis I
 ELT 125 Circuit Analysis II
 ELT 130 Electronics
 ELT 140 Introduction to Digital Electronics

MANUFACTURING TECHNOLOGY/MACHINING – ASSOCIATE IN APPLIED SCIENCE (MAMA.AAS)

This Associate in Applied Science degree program is designed to provide the theoretical knowledge and the hands-on experience necessary to be successful in the increasingly technical area of manufacturing and/or production machining. Many of the courses in this curriculum coincide with the Academy for Manufacturing Careers BAT certificate program making this an ideal continuation after completion of your journeyman's certificate.

Minimum credits	64
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals
 COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

CEM 131 Fundamentals of Chemistry
 NSC 131 Contemporary Science
 PHY 131 Conceptual Physics

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics
 ECN 232 Microeconomics
 PSY 140 Introduction to Psychology
 SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Take the following:

HUM 131 Cultural Connections

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness
 HPF 186 Weight Training and Wellness
 HPF 277 Stress Management
 HPF 283 Managing Stress and Holistic Health
 PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

MANUFACTURING TECH/MACHINING RELATED REQUIREMENTS – (26 credits)

Take the following:

CAD 151 AutoCad
 ELT 101 Basic Industrial Electricity
 MFG 105 Blue Print Reading
 MFG 110 Work Life Skills
 MFG 150 Machining Theory & Methods
 MFG 160 Materials/Metallurgy
 MFG 166 Precision Machining Methods
 MFG 170 Hydraulics/Pneumatics
 MFG 185 Maintenance & Troubleshooting
 MFG 200 Basic Gauges & Measurement

MANUFACTURING TECH/MACHINING CORE REQUIREMENTS – (17 credits)

Take the following:

MFG 115 GD & T
 MFG 120 Jig & Fixture Design
 MFG 157 Trigonometry for Manufacturing
 MFG 172 CNC Theory
 MFG 174 CNC Programming
 MFG 180 EDM Theory
 WLD 100 Fundamentals of Welding
 or WLD 110 MIG/TIG Welding

**MANUFACTURING TECHNOLOGY/MAINTENANCE –
ASSOCIATE IN APPLIED SCIENCE (MAMT.AAS)**

This Associate in Applied Science degree program is designed to provide the theoretical knowledge and the hands-on experience necessary to be successful in the increasingly technical area of manufacturing and/or industrial maintenance. Many of the courses in this curriculum coincide with the Academy for Manufacturing Careers BAT certificate program making this an ideal continuation after completion of your journeyman's certificate.

Minimum credits	63
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (22 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

CEM 131 Fundamentals of Chemistry

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics

ECN 232 Microeconomics

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Take the following:

HUM 131 Cultural Connections

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success
Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures
Program courses meet this requirement

**MANUFACTURING TECH/MAINTENANCE RELATED
REQUIREMENTS – (26 credits)**

Take the following:

CAD 151 AutoCad

ELT 101 Basic Industrial Electricity

MFG 105 Blue Print Reading

MFG 110 Work Life Skills

MFG 150 Machining Theory & Methods

MFG 160 Materials/Metallurgy

MFG 166 Precision Machining Methods (inactive)

MFG 170 Hydraulics/Pneumatics

MFG 185 Maintenance & Troubleshooting

MFG 200 Basic Gauges & Measurement

**MANUFACTURING TECH/MAINTENANCE CORE
REQUIREMENTS – (16 credits)**

Take the following:

ELT 152 Industrial Wiring

ELT 215 Electrical Troubleshooting

MFG 156 Geometry for Manufacturing

MFG 190 Drive Components & Bearings

WLD 100 Fundamentals of Welding

WLD 110 MIG/TIG Welding

**MANUFACTURING TECHNOLOGY/TOOL ROOM
– ASSOCIATE IN APPLIED SCIENCE (MATR.AAS)**

This Associate in Applied Science degree program is designed to provide the theoretical knowledge and the hands-on experience necessary to be successful in the increasingly technical area of manufacturing tool room operations. Many of the courses in this curriculum coincide with the Academy for Manufacturing Careers BAT certificate program making this an ideal continuation after completion of your journeyman's certificate.

Minimum credits	70
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

CEM 131 Fundamentals of Chemistry

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Choose one of the following:

ECN 231 Macroeconomics

ECN 232 Microeconomics

PSY 140 Introduction to Psychology

SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Take the following:

HUM 131 Cultural Connections

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

MANUFACTURING/TOOL ROOM RELATED REQUIREMENTS – (26 credits)

Take the following:

CAD 151 AutoCad

ELT 101 Basic Industrial Electricity

MFG 105 Blue Print Reading

MFG 110 Work Life Skills

MFG 150 Machining Theory & Methods

MFG 160 Materials/Metallurgy

MFG 166 Precision Machining Methods

MFG 170 Hydraulics/Pneumatics

MFG 185 Maintenance & Troubleshooting

MFG 200 Basic Gauges & Measurement

MANUFACTURING/TOOL ROOM CORE REQUIREMENTS – (23 credits)

Take the following:

MFG 115 GD & T

MFG 120 Jig & Fixture Design

MFG 125 Die Theory & Design

MFG 157 Trigonometry for Manufacturing

MFG 172 CNC Theory

MFG 174 CNC Programming

MFG 180 EDM Theory

MFG 210 Moldmaking

WLD 100 Fundamentals of Welding

or WLD 110 MIG/TIG Welding

OCCUPATIONAL STUDIES – ASSOCIATE IN APPLIED SCIENCE (OCST.AAS)

This Associate of Applied Science is designed specifically for students who have completed an apprenticeship program and received a certificate of completion from the U.S. Department of Labor/Bureau of Apprenticeship and Training. Apprenticeship occupations accepted are carpenter, cement mason, structural draftsman, machine builder, machine repair and maintenance, millwright, wood model maker, mold maker (plaster and die cast), operating engineer, plumber, pipe fitter, tool and die maker. Other apprenticeship programs would need to be reviewed on a case-by-case for consideration by the lead faculty. The curriculum will provide students with a strong academic foundation and introduce them to new ideas in sustainability, business, and entrepreneurship and computer systems.

Minimum credits	61
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (24 credits)

ADO 1: Write clearly, concisely and intelligibly

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning

Choose one of the following:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Anatomy & Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future

Choose one of the following:

ECN 231 Macroeconomics
 ECN 232 Microeconomics
 HIS 131 Western Civilization to 1555
 HIS 132 Western Civilization 1555 to Present
 HIS 231 Development of the US through the Civil War
 HIS 232 Development of the US from the Civil War
 HIS 235 20th Century History
 PLS 141 American National Government
 PSY 140 Introduction to Psychology
 SOC 231 Principles of Sociology

ADO 6: Understand aesthetic experience and artistic creativity

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Choose one of the following:

HPF 160 Wellness
 HPF 186 Weight Training and Wellness
 HPF 277 Stress Management
 HPF 283 Managing Stress and Holistic Health
 PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Choose one of the following:

ANT 131 Cultural Anthropology
 ENG 236 Women in Changing Society
 ENG 249 African American Literature
 ENG 257 World Literature
 FRN 131 French I or higher
 GEO 132 World Regions
 GER 131 German I or higher
 HIS 125 African-American History
 PHL 243 World Religions
 PLS 262 International Relations
 MUS 130 Music of Non-Western Cultures

SOC 235 Minority Groups in America
 SOC 236 Women in Changing Society
 SOC 246 Marriage and Family
 SPN 131 Spanish I or higher

OCCUPATIONAL STUDIES CORE REQUIREMENTS – (17 credits)

Take the following:

STM 101 Introduction to Sustainability
 ENT 160 Introduction to Entrepreneurship
 CIS 101 Introduction to Computer Systems
 ECM 101 e-Commerce Fundamentals
 BUA 100 Contemporary Business
 ENG 232 Technical and Business Writing

OCCUPATIONAL STUDIES ELECTIVE REQUIREMENTS – (20 credits)

Apprenticeship Certificate of Completion

PROCESS TECHNOLOGY CONCENTRATION (PRTE.COM)

A process technician is a key member of a team responsible for planning, analyzing and controlling production in a variety of process industries. The duties of a process technician including maintaining a safe work environment, controlling, monitoring and troubleshooting equipment, analyzing, evaluating and communicating about data concerning the process. The process technology concentration will prepare the student for entry into the process industry by introducing the knowledge and skill sets necessary for each of the major process functions.

Minimum credits	21
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (22 credits)

Take the following:

PTC 100 PTEC I-Introduction to Process Technology
 PTC 110 PTEC II-Process Technology Equipment
 PTC 120 PTEC III-Process Technology Systems
 PTC 200 PTEC IV-Process Technology Operations
 PTC 210 PTEC V-Safety, Health & Environment
 PTC 220 PTEC VI Quality Systems
 PTC 230 PTEC VII-Instrumentation



APPRENTICESHIP INFORMATION

Apprenticeship programs are available in many trades in cooperation with an employer or a joint apprenticeship committee representing labor and management. The U.S. Department of Labor/Bureau of Apprenticeship and Training registers and monitors the programs to ensure quality in apprenticeship programs nationwide.

Apprenticeship training involves classroom and on-the-job training over a span of usually four years. The process of applying knowledge on the job provides the apprentice with the opportunity to develop the necessary skills for a particular trade.

Upon completion of all employer-specified coursework and the required hours of on-the-job instruction, the employer may recommend that the apprentice receive a completion certificate from the U.S. Department of Labor/Bureau of Apprenticeship and Training.

For more information, call Jackson Area Manufacturing Association (JAMA) 517.782.8268.

TRANSFER PROGRAMS – PRE-ARCHITECTURE

Architects design buildings and other structures. These buildings must be attractive as well as functional, safe and economical, and must suit the needs of the people who use them. Architects take all these things into consideration when they design buildings and other structures.

Architects provide a wide variety of professional services to individuals and organizations planning a construction project. They may be involved in all phases of development, from the initial discussion of general ideas with the client through the entire life of the facility. Their duties require a number of skills – design, engineering, managerial, communication and supervisory.

ENGINEERING

Engineers apply science, mathematics, and professional judgment to solve technical problems in industry and society. Today engineers are expected to contribute more than their technical competence. They are concerned with the impact of their work on society.



HEALTH SCIENCES CAREER PATHWAY

This pathway includes careers related to the promotion of health as well as the treatment of injuries, conditions and diseases. This may include medicine, dentistry, nursing, therapy and rehabilitation, nutrition, fitness and hygiene, and animal health care.

Students in nursing or allied health programs that require clinical rotations at local health facilities may be required to submit to a drug test. If the student tests positive for illicit drugs he/she will be removed from the program. Criminal background checks may also be performed and may prevent admission if failed.

DEGREES/CERTIFICATES – ALLIED HEALTH

- Cardiac Sonography
- Emergency Medical Service, EMT
- General Sonography
- Health Studies
- Health Management
- Medical Assistant
- Medical Insurance Coder/Biller
- Pharmacy Technician
- Radiography
- Respiratory Care
- Vascular Sonography

DEGREES/CERTIFICATES – NURSING

- Nursing
- Nursing (LPN to ADN)
- Practical Nurse

CONCENTRATION

The "concentration" process is a building block approach to completing a trade certificate program. Students can choose to complete the concentration depending upon the level of skill and knowledge desired. Students can apply for a concentration upon completion of the required courses.

TRANSFER PROGRAMS IN HEALTH SCIENCES PATHWAY

The first two years of college education usually consist of general education courses, introductory courses in the major and/or program of study, and selected electives. Refer to page 39 for additional information on transfer and MACRAO. Academic advisors will assist students in planning their transfer program. They can also provide transfer guide sheets indicating JCC courses that meet the requirements of various programs of study at four-year colleges. Sample curricula for a few popular transfer programs are included:

- A joint program agreement between Jackson Community College and Kellogg Community College [AAS]
- Allied Health with Siena Heights University, JCC and University of Michigan [BSN]
- Dental Hygiene
- Medical Sciences [pre-medicine, pre-dentistry, pre-chiropractic]
- Physical Therapy
- Pre-Veterinary Science

Jackson Community College has published this catalog for information purposes only and its contents do not constitute a contract between this institution and prospective or enrolled students. The information contained in this general college catalog reflects the current curricula, policies and regulations of the College. However, these are subject to change at any time by action of the Board of Trustees or the administration. The information is generally believed to be accurate, but the College disclaims liability for inadvertent errors or omissions.

**CARDIAC SONOGRAPHY – ASSOCIATE IN APPLIED SCIENCE (CSON.AAS)**

A cardiac sonographer (echocardiographer) is the allied health professional who, after an extensive and comprehensive educational process, is qualified to perform an echocardiogram (ultrasound of the heart). The primary role of the cardiac sonographer is to obtain diagnostic recordings and measurements from the ultrasound image of the heart, including hemodynamic information. This individual assumes great responsibility for the performance of this exam. The techniques for obtaining the required images and recordings require great skill. A thorough understanding of cardiac anatomy, physiology, hemodynamics, and pathophysiology is required.

The cardiac sonography program is an online program accredited by the Commission for Accreditation of Allied Health Education Programs (CAAHEP) in the United States. It is a program leading to an Associate in Applied Science degree. The curriculum consists of integrated didactic and clinical coursework with a minimum of 1,136 supervised clinical hours with an approved clinical education affiliate. This program is designed to prepare the student for employment as a cardiac sonographer with positions located in hospitals, medical clinics, and other diagnostic imaging facilities.

There are special admission requirements to the sonography programs, and it is the student's responsibility to understand the requirements and adhere to them. Entry into a program is competitive and based on a "point system." Point values are based on grades earned in prerequisite coursework and the interview process.

Applications are processed according to the following:

- Applications must be received by the Allied Health Office by August 31.
- Questionnaires will be mailed to eligible applicants.
- Completed questionnaires must be returned by the stated due date.
- DMS Admission Committee conducts interviews.
- Students are notified by mail of application/interview results.
- Accepted students begin Winter semester.

General education prerequisites and related requirement courses must be completed before admission to the program.

Minimum credits	69
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grade in BIO 132 or BIO 155 or BIO 253/254, HOC 130 and MOA 120	3.0
Minimum JCC credits	33
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-8 credits)

Choose one of the following:

BIO 132 Human Biology

or BIO 155 Human Anatomy & Physiology

or BIO 253 Human Anatomy and Physiology I

and BIO 254 Human Anatomy and Physiology II

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Take the following:

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

CARDIAC SONOGRAPHY RELATED REQUIREMENTS – (15 credits)

Take the following:

CIS 101 Introduction to Computer Systems

or CIS 201 Advanced Computer Technologies

DMS 100 Introduction to Diagnostic Imaging

DMS 104 Introduction to Sonographic Instrumentation

HOC 130 Introduction to Health Occupations

MOA 120 Medical Terminology

CARDIAC SONOGRAPHY CORE REQUIREMENTS – (33 credits)

Take the following:

DMS 140 Sonographic Orientation & Technique

DMS 141 Adult Echo I

DMS 142 Echo Clinical I

DMS 144 Cardiovascular Principles

DMS 148 Echo Clinical II

DMS 206 Sonographic Instrumentation

DMS 240 Adult Echo II

DMS 244 Echo Clinical III

GENERAL SONOGRAPHY – ASSOCIATE IN APPLIED SCIENCE (GSON.AAS)

A sonographer is the allied health professional who, for diagnostic purposes, uses high frequency sound waves to create cross sectional images of the patient's anatomy. Sonographers work in professional harmony with both the radiologist and the clinical physician. Sonographers are required to demonstrate a great deal of independent judgment.

The general sonography program is an online program accredited by the Commission for Accreditation of Allied Health Educational Programs (CAAHEP) in the United States. It is a program leading to an Associate in Applied Science degree. The curriculum consists of integrated educational and clinical course work with a minimum of 1,350 supervised clinical hours in an approved clinical education affiliate.

The program prepares the students for employment in two specialties (abdomen/superficial structures and obstetrics/gynecology) within the field of general sonography; positions are located within hospitals, medical clinics, and other diagnostic imaging institutions. Upon successful completion, students are eligible to apply for the American Registry for Diagnostic Medical Sonography (ARDMS) exams in Physics and Instrumentation, Abdomen and Obstetrics/Gynecology.

There are special admissions requirements to the sonography programs, and it is the student's responsibility to understand the requirements and adhere to them. Entry into a program is competitive and based on a "point system." Point values are based on grades earned in prerequisite coursework and the interview process.

Applications are processed according to the following:

- Applications must be received by the Allied Health Office by January 31.
- Questionnaires will be mailed to eligible applicants.
- Completed questionnaires must be returned by the stated due date.
- DMS Admission Committee conducts interviews.
- Students are notified by mail of application/interview results.
- Accepted students begin Spring semester.

General education prerequisites and related requirement courses must be completed before admission to the program.

Minimum credits	76
Minimum cumulative GPA	2.0
Minimum grade in BIO 132 or BIO 155 or BIO 253/254, HOC 130 and MOA 120	3.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)
ADO 1: Write clearly, concisely and intelligibly (3 credits)
Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)
Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)
Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-8 credits)
Choose one of the following:

BIO 132 Human Biology

or BIO 155 Human Anatomy & Physiology

or BIO 253 Human Anatomy and Physiology I

and BIO 254 Human Anatomy and Physiology II

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)
Take the following:

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)
Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)
Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

GENERAL SONOGRAPHY RELATED REQUIREMENTS – (15 credits)
Take the following:

CIS 101 Introduction to Computer Systems

or CIS 201 Advanced Computer Technology

DMS 100 Introduction to Diagnostic Imaging

DMS 104 Introduction to Sonographic Instrumentation

HOC 130 Introduction to Health Occupations

MOA 120 Medical Terminology

GENERAL SONOGRAPHY CORE REQUIREMENTS – (40 credits)
Take the following:

DMS 101 Sonographic Orientation

DMS 105 Sonographic Techniques

DMS 122 Clinical Experience I

DMS 200 Abdomen and Small Parts Sonography

DMS 201 Obstetric and Gynecologic Sonography

DMS 206 Sonographic Instrumentation

DMS 212 Comprehensive Sonography

DMS 223 Clinical Experience II

DMS 224 Clinical Experience III

VASCULAR SONOGRAPHY – ASSOCIATE IN APPLIED SCIENCE (VSON.AAS)

A vascular sonographer is a highly skilled allied health professional who performs arterial and venous diagnostic procedures using high frequency sound waves. A vascular sonographer operates a variety of complex diagnostic and monitoring equipment, as well as numerous ancillary devices.

The vascular sonographer performs carotid duplex scanning, lower and upper extremity Doppler examinations, venous duplex scans, abdominal vascular exams, evaluates test results, monitors physiological states of the patient, conducts patient education, and maintains accurate records and protocols during and after procedures. A thorough understanding of hemodynamics and pathophysiology is required.

The vascular sonography program is an online program accredited by the Commission for Accreditation of Allied Health Education Programs (CAAHEP) in the United States. It is a program leading to an Associate in Applied Science degree. The curriculum consists of integrated educational and clinical course work with a minimum of 1,040 supervised clinical hours with an approved clinical education affiliate.

The program is designed to prepare the student for employment in the field of vascular sonography. Vascular positions are located within hospitals, medical clinics, and other diagnostic imaging health institutions. Upon successful completion, students are eligible to apply for certification exams through the American Registry for Diagnostic Medical Sonography and, if successful, use the credentials RVT (Registered Vascular Technologist).

There are special admission requirements to the sonography programs, and it is the student's responsibility to understand the requirements and adhere to them. Entry into a program is competitive and based on a "point system." Point values are based on grades earned in prerequisite coursework and the interview process.

Applications are processed according to the following:

- Applications must be received by the Allied Health Office by January 31.
- Questionnaires will be mailed to eligible applicants.

- Completed questionnaires must be returned by the stated due date.
- DMS Admission Committee conducts interviews.
- Students are notified by mail of application/interview results.
- Accepted students begin Spring semester.

General education prerequisites and related requirement courses must be completed before admission to the program.

Minimum credits	70
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grade in BIO 132 or BIO 155 or BIO 253/254, HOC 130 and MOA 120	3.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher level

ADO 4: Demonstrate scientific reasoning (4-8 credits)

Choose one of the following:

BIO 132 Human Biology

or BIO 155 Anatomy & Physiology

or BIO 253 Human Anatomy and Physiology I

and BIO 254 Human Anatomy and Physiology II

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Take the following:

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

ALLIED HEALTH PREREQUISITE REQUIREMENTS – (15 credits)

Take the following:

CIS 101 Introduction to Computer Systems

or CIS 201 Advanced Computer Technologies

DMS 100 Introduction to Diagnostic Imaging

DMS 104 Introduction to Sonographic Instrumentation

HOC 130 Introduction to Health Occupations

MOA 120 Medical Terminology

VASCULAR SONOGRAPHY CORE REQUIREMENTS – (34 credits)

Take the following:

DMS 107 Sonographic Orientation – Vascular

DMS 151 Peripheral Arterial I

DMS 152 Peripheral Arterial II

DMS 155 Peripheral Venous

DMS 161 Vascular Clinical I

DMS 206 Sonographic Instrumentation

DMS 251 Cerebrovascular I

DMS 254 Cerebrovascular II

DMS 265 Vascular Clinical II

DMS 266 Vascular Clinical III



**EMERGENCY MEDICAL TECHNOLOGY –
ASSOCIATE IN APPLIED SCIENCE (EMMT.AAS)**

The emergency medical technology program prepares students for employment as advanced emergency medical care givers. Content areas are covered in lectures; practical skills are developed in laboratory settings; and, clinical applications are divided between ambulances and hospital emergency rooms. A 250-hour, non-paid externship experience with a local ambulance company is the capstone course for completion of the program requirement.

The curriculum meets the requirements of the Michigan Department of Labor and Economic Growth and needs to be taken in sequence. Each course prepares the student for the respective level of the state licensing examination.

Students are evaluated in three areas: content, practical skills and clinical performance. Students achieving an 80 percent or higher will receive a certificate of completion and be eligible for the state licensure. Practical skills are graded on a pass/fail basis, and students must pass all practical exams to successfully complete each course. Clinical performance is evaluated by attendance and feedback from ambulance and hospital personnel along with the clinical facilitator. Attendance policies are regulated by the state. Upon successfully completing all college requirements, a student will qualify for an Associate in Applied Science.

Minimum credits	70
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (25 credits)**ADO 1: Write clearly, concisely and intelligibly (3 credits)**

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Take the following:

COM 231 Communication Fundamentals
or COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (8-9 credits)

Choose one of the following groups:

1. BIO 155 Human Anatomy & Physiology
and CEM 131 Fundamentals of Chemistry
or CEM 137 Chemistry of Life
or CEM 141 General Chemistry I OR
2. BIO 253 Human Anatomy and Physiology I
and BIO 254 Human Anatomy and Physiology II

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (4 credits)

Take the following:

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
ART 112 Art History: Renaissance to Present
ENG 210 Introduction to Film
ENG 246 Short Story & Novel
ENG 247 Poetry & Drama
ENG 252 Shakespeare
ENG 254 Children's Literature
ENG 255 American Literature - 19th Century
ENG 256 American Literature - 20th Century
HUM 131 Cultural Connections
MUS 131 Understanding Music
THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Program courses meet this requirement

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

**EMERGENCY MEDICAL TECHNOLOGY RELATED
REQUIREMENTS – (6 credits)**

Take the following:

MOA 120 Medical Terminology
NUR 121 Pharmacology

**EMERGENCY MEDICAL TECHNOLOGY
REQUIREMENTS – (39 credits)**

Take the following:

EMS 122 EMT Basic Technology
or EMS 150 EMT Intermediate Technology (I-85)
EMS 215 Paramedic Technology I
EMS 225 Paramedic Technology II
EMS 235 Paramedic Technology III

EMERGENCY MEDICAL TECHNOLOGY – CERTIFICATE (EMMT.CERT)

The Emergency Medical Technology program prepares students for employment as advanced emergency medical care givers. Content areas are covered in lectures; practical skills are developed in laboratory settings; and a minimum of 250 hours of clinical applications are divided between ambulances and hospital emergency rooms. An additional 250-hour, non-paid externship experience with a local ambulance company is the capstone course for completion of the program requirement. The curriculum meets the requirements of the Michigan Department of Community Health and needs to be taken in sequence. Each course prepares the student for the respective level of the state licensing examination. Students are evaluated in three areas: content, practical skills, and clinical performance. Students achieving an 80 percent or higher will receive a certificate of completion and be eligible for state licensure. Practical skills are graded on a pass/fail basis, and students must pass all practical exams to successfully complete each course. Clinical performance is evaluated by attendance and feedback from ambulance and hospital personnel along with completing all college requirements. A student will qualify for a medical technician position in an emergency room or for an advanced emergency medical technician for an ambulance service.

Minimum credits	54
Minimum cumulative GPA	2.0
Minimum grade in all course	2.0
Minimum grade in EMS 122, 215, 225, 235	2.5
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS (15 credits)

Choose one of the following groups:

1. BIO 155 Human Anatomy & Physiology
and CEM 131 Fundamentals of Chemistry
or CEM 137 Chemistry of Life
or CEM 141 General Chemistry I OR
 2. BIO 253 Human Anatomy & Physiology I
and BIO 254 Human Anatomy & Physiology II
- ENG 131 Writing Experience I
MAT 131 Intermediate Algebra or higher

EMERGENCY MEDICAL TECHNOLOGY REQUIREMENTS – (39 credits)

Take the following:

- EMS 122 EMT Basic Technology
or EMS 150 EMT-Intermediate Technology (I-85)
EMS 215 Paramedic Technology I
EMS 225 Paramedic Technology II
EMS 235 Paramedic Technology III

EMERGENCY MEDICAL TECHNOLOGY–BASIC – CONCENTRATION (EMMT.CON)

The emergency medical technology – basic prepares students for employment as emergency medical care givers. Content areas are covered in lectures; practical skills are developed in laboratory settings; and clinical applications are divided between ambulances and hospital emergency rooms.

The curriculum meets the requirements of the Michigan Department of Labor and Economic Growth and need to be taken in sequence. This course prepares the student for the respective level of state licensing examination.

Minimum credits	23
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS (11 credits)

Take the following:

ENG 131 Writing Experience I

And choose one of the following groups:

1. BIO 155 Human Anatomy & Physiology
and CEM 131 Fundamentals of Chemistry
or CEM 137 Chemistry of Life
or CEM 141 General Chemistry I OR
2. BIO 253 Human Anatomy and Physiology I
and BIO 254 Human Anatomy and Physiology II

CORE REQUIREMENTS (12 credits)

Take the following:

EMS 122 EMT Basic Technology

EMERGENCY MEDICAL TECHNOLOGY–BASIC – SKILL SET (EMMT.SSET)

The emergency medical technology – basic prepares students for employment as emergency medical care givers. Content areas are covered in lectures; practical skills are developed in laboratory settings; and clinical applications are divided between ambulances and hospital emergency rooms.

The curriculum meets the requirements of the Michigan Department of Labor and Economic Growth and need to be taken in sequence. This course prepares the student for the respective level of state licensing examination.

Minimum credits	15
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (15 credits)

Take the following:

- EMS 122 EMT Basic Technology
EMS 114 EMS Medical Terminology/A & P

EKG TECHNICIAN – SKILL SET (EKTE.SSET)

The EKG Technician skill set prepares students for professional certification and employment in a variety of settings, such as hospital-based cardiology clinics, cardiac rehabilitation centers, doctor's offices, and emergency rooms. This is a great option for the student who would like to have patient contact without being involved in performing invasive procedures. Students may also choose to use this as a building block to enhance the skills that will be learned in another allied health or nursing degrees or to add to an already completed degree.

Minimum credits	11
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	11
MACRAO Agreement	No

REQUIRED COURSES – (11 credits)

MOA 141 Body Structure & Function
 HOC 130 Introduction to Health Occupations
 HOC 135 Electrocardiography Technician

ADDITIONAL REQUIREMENT

EMS 110 Advanced First Aid & American Heart CPR
 or current Healthcare Provider CPR and Basic First Aid certification

HEALTH MANAGEMENT – ASSOCIATE IN APPLIED SCIENCE (HEMA.AAS)

This Associate in Applied Science degree program is designed to prepare students in the field of health management. Health management positions are located within hospitals, medical clinics, as well as other health institutions.

Minimum credits	60
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grade	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (29 credits)
ADO 1: Write clearly, concisely and intelligibly (6 credits)
Take the following:

ENG 131 Writing Experience I
 ENG 232 Technical & Business Writing

ADO 2: Speak clearly, concisely and intelligibly (3 credits)
Take one of the following:

COM 231 Communication Fundamentals
 COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)
Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)
Take one of the following:

BIO 110 Introductory Biology
 BIO 131 General Biology
 BIO 132 Human Biology
 BIO 155 Human Anatomy & Physiology
 BIO 253 Human Anatomy and Physiology I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Take the following:

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)
Choose one of the following:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (3 credits)

Take the following:

HPF 283 Managing Stress and Holistic Health

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures (3 credits)

Take the following:

SOC 235 Minority Groups in America

HEALTH MANAGEMENT RELATED REQUIREMENTS – (3 credits)
Take the following:

STM 101 Introduction to Sustainability

HEALTH MANAGEMENT CORE REQUIREMENTS – (28 credits)
Take the following:

ACC 216 Financial Accounting Concepts
 BUA 120 Human Relations in Business
 BUA 121 Leadership
 BUA 220 Principles of Management
 CIS 101 Introduction to Computer Systems
 or CIS 201 Advanced Computer Technologies
 HOC 130 Introduction to Health Occupations
 HOC 201 Quality Improvement - Health Care
 or BUA 130 Customer Service
 MOA 120 Medical Terminology
 PHL 236 Ethics

**MEDICAL ASSISTANT – ASSOCIATE IN
 APPLIED SCIENCE (MEDA.AAS)**

The medical assistant Associate in Applied Science program prepares the student for an entry-level position as a medical assistant in a medical office, clinic, hospital or other health care facility. Clinical (diagnostic and treatment), administrative (communication and business) skills and transdisciplinary knowledge and skills are included in the course work. A 160-hour non-paid externship experience with a licensed health care practitioner is the capstone course.

The JCC certificate medical assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Medical Assisting Education Review Board (MAERB), Commission on Accreditation of Allied Health Education Programs, 1362 Park Street, Clearwater, FL 33756. Phone: 727.210.2350.

Upon completion, the student becomes eligible for the AAMA Medical Assistant Certification exam to be a Certified Medical Assistant [CMA (AAMA)] The medical assistant certificate program and completion of the general education requirements listed qualifies the student for an Associate in Applied Science–Medical Assistant. Students are welcome to enter this program in any semester, but must meet prerequisite course and grade level requirements to proceed in the program and qualify for MOA 245 Internship/Externship.

Prerequisite requirements: Keyboarding skills of 45 WPM or CIS 110.

Minimum credits	63
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grade required in MOA 114, MOA 116, MOA 120, MOA 214, MOA 216, MOA 245 and 251	2.5
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (20 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Human Anatomy & Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry I

GEL 160 Introduction to Geology

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Take the following:

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Program courses meet this requirement

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

MEDICAL ASSISTANT RELATED REQUIREMENTS – (6 credits)

Take the following:

CIS 101 Introduction to Computer Systems

or CIS 201 Advanced Computer Technologies

LPN 132 Medications

or NUR 121 Pharmacology

MEDICAL ASSISTANT CORE REQUIREMENTS – (37 credits)

Take the following:

MOA 112 Insurance Reports, Law & Ethics

MOA 114 Intro to Clinical Procedures

MOA 116 Physical Examinations & Procedures

MOA 120 Medical Terminology

MOA 141 Body Structure & Function

or LPN 141 Body Structure & Function

or BIO 155 Human Anatomy & Physiology

or BIO 253 Human Anatomy and Physiology I

and BIO 254 Human Anatomy and Physiology II

MOA 145 Nutrition

MOA 214 Specialty Exams and Treatments

MOA 216 Surgical Procedures and Lab Testing

MOA 240 Medical Office Procedures
 MOA 241 Medical Records
 MOA 245 Internship/Externship
 MOA 251 Medical Assistant Capstone

MEDICAL ASSISTANT ADDITIONAL REQUIREMENTS

EMS 110 Advanced First Aid & American Heart CPR
 or current Healthcare Provider CPR and Basic First Aid certification

MEDICAL ASSISTANT – CERTIFICATE (MEDA.CERT)

The medical assistant certificate program prepares the student for an entry-level position as a medical assistant in a medical office, clinic, hospital or other health care facility. Clinical (diagnostic and treatment), administrative (communication and business) skills and transdisciplinary knowledge and skills are included in the course work. A 160-hour non-paid externship experience with a licensed health care practitioner is the capstone course.

Upon successful completion of this program, the student is eligible for a professional credential by passing the American Association of Medical Assistant (AAMA) examination to become a Certified Medical Assistant [CMA (AAMA)]. The JCC certificate medical assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Medical Assisting Education Review Board (MAERB), Commission on Accreditation of Allied Health Education Programs, 1362 Park Street, Clearwater, FL 33756. Phone: 727.210.2350.

Students are welcome to enter this program in any semester, but must meet prerequisite course and grade level requirements to proceed in the program and qualify for MOA 245 Internship/Externship.

Prerequisite requirements: Keyboarding skills of 45 WPM or CIS 110.

Minimum credits	54
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grade in MOA 114, MOA 116, MOA 120, MOA 214, MOA 216, MOA 245 and 251	2.5
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (11 credits)

Take the following:

ENG 131 Writing Experience I
 MAT 131 Intermediate Algebra or higher
 PSY 140 Introduction to Psychology

RELATED REQUIREMENTS – (6 credits)

Take the following:

CIS 101 Introduction to Computer Systems
 or CIS 201 Advanced Computer Technology
 NUR 121 Pharmacology
 or LPN 132 Medications

MEDICAL ASSISTANT CORE REQUIREMENTS – (37 credits)

Take the following:

MOA 112 Insurance Reports, Law & Ethics
 MOA 114 Intro to Clinical Procedures
 MOA 116 Physical Examinations & Procedures
 MOA 120 Medical Terminology
 MOA 141 Body Structure & Function
 or LPN 141 Body Structure & Function

or BIO 155 Human Anatomy & Physiology
 or BIO 253 Human Anatomy and Physiology I
 and BIO 254 Human Anatomy and Physiology II

MOA 145 Nutrition

MOA 214 Specialty Exams and Treatments

MOA 216 Surgical Procedures and Lab Testing

MOA 240 Medical Office Procedures

MOA 241 Medical Records

MOA 245 Internship/Externship

MOA 251 Medical Assistant Capstone

MEDICAL ASSISTANT ADDITIONAL REQUIREMENTS

EMS 110 Advanced First Aid & American Heart CPR
 or current Healthcare Provider CPR and Basic First Aid certification

**MEDICAL INSURANCE CODER/BILLER –
 ASSOCIATE IN APPLIED SCIENCE (MICB.AAS)**

The medical insurance coder/biller associates program prepares the student to work in a medical office, clinic, surgical center, emergency center, or hospital. Emphasis is placed on: interpersonal, written and oral communication; business math; medical terminology; use of computers; medical financial management, disease conditions, diagnostic and procedure coding and billing. On the-job experience is provided in a 150-hour non-paid externship.

Minimum credits	68
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grades in ACC 216, MOA 241, MOA 242, MIC 101, MIC 150, MIC 201, MIC 211 and CIS 101	2.5
Minimum JCC credits	12
MACRAO agreement	No

GENERAL EDUCATION REQUIREMENTS – (24 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals
 or COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4 credits)

Choose one of the following:

BIO 110 Introductory Biology
 BIO 131 General Biology
 BIO 132 Human Biology
 BIO 155 Human Anatomy & Physiology
 BIO 253 Human Anatomy and Physiology I
 BIO 254 Human Anatomy and Physiology II

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the presents and future (4 credits)

Take the following:

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (3 credits)

Take the following:

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

MEDICAL INSURANCE CODER/BILLER RELATED REQUIREMENTS – (13 credits)

Take the following:

CIS 101 Introduction to Computer Systems
 or CIS 201 Advanced Computer Technologies
 LPN 141 Body Structure & Function
 or MOA 141 Body Structure & Function
 MOA120 Medical Terminology
 NUR 121 Pharmacology

MEDICAL INSURANCE CODER/BILLER CORE REQUIREMENTS – (31 credits)

Take the following:

ACC 216 Financial Accounting Concepts
 BUA 120 Human Relations in Business
 MOA 112 Insurance Reports, Law & Ethics
 MOA 241 Medical Records
 MOA 242 Advanced Medical Billing
 MIC 101 Basic Coding
 MIC 150 CPT Coding
 MIC 201 Billing Systems
 MIC 211 Advanced Coding
 MIC 245 Internship/ Externship*

**Program coordinator approval needed to register for MIC 245. Student must validate 2.5 or better in ACC 216, MOA 241, MOA 242, MIC 101, MIC 150 MIC 201, MIC 211 and CIS 101 for entrance into this course.*

MEDICAL INSURANCE CODER/BILLER – CERTIFICATE (MICB.CERT)

The medical insurance coder/biller certificate program prepares the student to work in a medical office, clinic, surgical center, emergency center, or hospital. Emphasis is placed on: interpersonal, written and oral communication; business math; medical terminology; use of computers; medical financial management, disease conditions, diagnostic and procedure coding and billing.

Minimum credits	48
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grades in ACC 216, MOA 241, MOA 242, MIC 101, MIC 150, MIC 201, and CIS 101	2.5
Minimum JCC credits	12
MACRAO agreement	No

GENERAL EDUCATION REQUIREMENTS – (10 credits)

ENG 131 Writing Experience
 COM 231 Communication Fundamentals
 or COM 240 Interpersonal Communication
 MAT 131 Intermediate Algebra or higher

MEDICAL INSURANCE CODER/BILLER RELATED REQUIREMENTS – (13 credits)

Take the following:

CIS 101 Introduction to Computer Systems
 or CIS 201 Advanced Computer Technologies
 LPN 141 Body Structure & Function
 or MOA 141 Body Structure & Function
 MOA 120 Medical Terminology
 NUR 121 Pharmacology

MEDICAL INSURANCE CODER/BILLER CORE REQUIREMENTS – (25 credits)

Take the following:

ACC 216 Financial Accounting Concepts
 BUA 120 Human Relations in Business
 MOA 112 Insurance Reports, Law & Ethics
 MOA 241 Medical Records
 MOA 242 Advanced Medical Billing
 MIC 101 Basic Coding
 MIC 150 CPT Coding
 MIC 201 Billing Systems



PHARMACY TECHNICIAN – ASSOCIATE IN APPLIED SCIENCE (PHTE.AAS)

The Pharmacy Technician Associate in Applied Science program prepares the student for the skills necessary for a pharmacy technician position in a retail pharmacy or hospital. Emphasis is placed on: interpersonal, written and oral communication; health math; medical terminology; use of computers; knowledge and accuracy in dispensing and control of drugs. Upon successful completion, students are prepared to take the Pharmacy Technician Certification Board (PTCB Exam) a National Certification Exam.

Minimum credits	62
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grades in CEM 131, CIS 101 or CIS 201, MOA 120, NUR 121, HOC 140, HOC 202	3.0
Minimum JCC credits	12
MACRAO agreement	No

GENERAL EDUCATION REQUIREMENTS – (29 credits)**ADO 1: Write clearly, concisely and intelligibly (6 credits)**

Take the following:

ENG 131 Writing Experience
ENG 232 Technical Business Writing

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals
or COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

BIO 110 Introductory Biology
BIO 131 General Biology
BIO 132 Human Biology
BIO 155 Human Anatomy & Physiology
BIO 253 Human Anatomy and Physiology I
BIO 254 Human Anatomy and Physiology II

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Take the following:

PYS 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
ART 112 Art History: Renaissance to Present
ENG 210 Introduction to Film
ENG 246 Short Story & Novel
ENG 247 Poetry & Drama
ENG 252 Shakespeare
ENG 254 Children's Literature
ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century
HUM 131 Cultural Connections
MUS 131 Understanding Music
THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (3 credits)

Choose from the following:

HPF 160 Wellness
HPF 186 Weight Training and Wellness
HPF 277 Stress Management
HPF 283 Managing Stress and Holistic Health
PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures (3 credits)

Choose one of the following:

ANT 131 Cultural Anthropology
ENG 236 Women in Changing Society
ENG 249 African-American Literature
ENG 247 World Literature
HIS 125 African-American History
PHL 243 World Religions
SOC 235 Minority Groups in America
SOC 236 Women in Changing Society

PHARMACY TECHNICIAN RELATED REQUIREMENTS – (20 credits)

Take the following:

BUA 130 Customer Service
or HOC 202 Introduction to Health Informatics
CEM 131 Fundamentals of Chemistry
CIS 101 Introduction to Information Technologies
or CIS 201 Advanced Information Technologies
LPN 141 Body Structure & Function
or MOA 141 Body Structure & Function
MOA 120 Medical Terminology
STM 101 Introduction to Sustainability

PHARMACY TECHNICIAN CORE REQUIREMENTS – (13 credits)

Take the following:

HOC 130 Introduction to Health Occupations
HOC 140 Pharm Tech Concepts and Calculations
MOA 145 Normal/Therapeutic Nutrition
NUR 121 Pharmacology

NURSING

Nursing is a dynamic and changing field with broader employment opportunities than ever before. It is expected to have one of the largest number of new job openings in the next decade. Many future nurses will be employed in home health, long-term or ambulatory care, although nursing careers are still available in traditional settings such as hospitals, medical offices and clinics. Program options reflect the variety of career paths available to future nursing professionals.

JCC PROGRAM CHOICES

- Nursing, ADN – Associate in Applied Science
- Nursing, LPN to ADN – Associate in Applied Science
- Practical Nurse – Certificate
- Nursing, JCC and University of Michigan – Bachelor of Science in Nursing (*Program is under revision. Contact the nursing department chair.*)

Note: Students who wish to begin a bachelor's degree in nursing and transfer to a four-year college or university (other than those in the JCC/U of M program) should contact the university where they are planning to transfer.

NURSING – ASSOCIATE IN APPLIED SCIENCE (NURS.AAS)

The Associate in Applied Science, Nursing (ADN) program consists of integrated lectures, labs and clinicals conducted in approved clinical education affiliates. The program prepares students to demonstrate competency in providing nursing care in a variety of health care settings and for employment in the field of registered nursing. Candidates successfully completing the ADN program are eligible to apply for the licensing examination (NCLEX-RN) required for licensure as a registered professional nurse (RN).

Students must apply for admission to the nursing program, and must do so within the application deadlines. Admission to the nursing program is highly competitive and is not guaranteed. There are special admission requirements to the nursing program, and it is the student's responsibility to understand the requirements and adhere to them. Students must meet all admission requirements. Admission into the program is based on a competitive point system, a pre-admission standardized exam and completion of prerequisite courses. The selection process is subject to change. You must work with an academic advisor to plan your prerequisite course sequence and to make application to the nursing program. The advisor will explain the point system on the "ADN Selection Process-Worksheet."

Students are required to take the NCLEX Review Program as part of the curriculum in order to graduate. Multiple standardized exams are also required at various points. Based on State of Michigan Senate Bill 0621 (2005) Public Act 28 of 2006, students applying for admission will be subject to a criminal background check including fingerprinting. Exclusions for convictions can range from one year to permanent exclusion. Questions should be directed to the legal affairs and/or security department.

In addition, all students must pass a drug screen to enter any nursing program at JCC, as well as complete immunizations, meet technical standards, and complete a physical form. Following graduation, applicants for licensure as a nurse are also asked about criminal convictions and substance abuse, and this can impact the individual's ability to become licensed.

Prerequisites are:

- ENG 131 Writing Experience I
- MAT 131 Intermediate Algebra or higher (MAT 133 preferred)
- PSY 140 Introduction to Psychology
- CEM 132 Fundamentals of Organic & Biological Chemistry or CEM 137 Chemistry of Life
- BIO 155 Human Anatomy & Physiology or BIO 253 Human Anatomy and Physiology I and BIO 254 Human Anatomy and Physiology II
- BIO 220 Microbiology

Applications are accepted for Fall or Winter admission. See an academic advisor for application deadlines. It is highly recommended that CEM be taken prior to Human Anatomy & Physiology. All sciences and pharmacology must be taken within the last eight years. Nursing courses **MUST** be taken in sequence, with the exception of pharmacology. Students are required to take and pass the HESI RN Admission Assessment (A²) prior to admission.

Minimum credits	76
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grades in BIO 155 or BIO 253 and BIO 254 and CEM 132 or 137	3.0
Minimum JCC credits	41
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (19 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly

Program courses meet this requirement

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher (MAT 133 preferred)

ADO 4: Demonstrate scientific reasoning (5-8 credits)

Take the following:

BIO 155 Anatomy & Physiology
or BIO 253 Human Anatomy and Physiology I
and BIO 254 Human Anatomy and Physiology II

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (4 credits)

Take the following:

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400
ART 112 Art History: Renaissance to Present
ENG 210 Introduction to Film
ENG 246 Short Story & Novel
ENG 247 Poetry & Drama

ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Program courses meet this requirement

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

NURSING RELATED REQUIREMENTS – (14 credits)

Take the following:

BIO 220 Microbiology
 CEM 132 Fundamentals of Organic & Biological Chemistry
 or CEM 137 Chemistry of Life
 NUR 121 Pharmacology
 PSY 252 Developmental Psychology

NURSING CORE REQUIREMENTS – (43 credits)

Take the following:

NUR 101 Fundamentals of Nursing
 NUR 170 Self-Care
 NUR 245 Health Assessment
 NUR 171 Supportive Educative Nursing
 NUR 172 Pathophysiology
 NUR 176 Family I – Maternal Nursing
 NUR 270 Partially Compensatory
 NUR 272 Mental Health
 NUR 274 Leadership
 NUR 275 Wholly Compensatory
 NUR 276 Family II – Nursing of Children

**PSY 252 may be taken prior to Semester I but must be completed prior to Semester II. This course MUST be completed prior to NUR 176 (Family I – Maternal Nursing) in the nursing sequence, if not taken prior to Semester I.*

**NUR 121 if not completed prior to admission into the program, MUST be taken during Semester I – concurrent with NUR 101.*

***It is highly recommended that general education courses be taken before the nursing course sequence if at all possible.*

NOTE: Nursing courses are assigned various labs and clinicals. Be sure to follow directions. The schedule is subject to change on short notice. Specific clinical sites and times cannot be guaranteed.

The nursing department reserves the right to change the curriculum, policies and program requirements.

The nursing program requirements are highly demanding and time consuming. Following admission, full-time employment is not recommended.

NURSING – LPN TO ADN – ASSOCIATE IN APPLIED SCIENCE (TNUR.AAS)

The Associate in Applied Science, Nursing – LPN to ADN program consists of integrated lectures, labs, and clinicals conducted in approved clinical education affiliate settings. The program is designed to educate students to provide competent nursing care in a variety of health care settings and for employment in the field of registered nursing. Candidates who successfully complete the LPN to ADN programs are eligible to apply for the licensing examination (NCLEX-RN) required for licensure as a registered professional nurse (RN).

There are special admission requirements to the LPN to ADN nursing program and it is the student's responsibility to understand the requirements and adhere to them. Students must apply for the program within published time frames. Students must meet with an academic advisor who will explain the program and admission process. Admission is not guaranteed and spaces are limited. The selection process is subject to change. Students must meet all admission requirements.

Candidates entering the LPN to ADN program must have a valid Michigan unencumbered LPN license and must pass the following competency exams: National League for Nursing (NLN) Foundations of Nursing, HESI RN Admission Assessment (A²), and Pharmacology NLN exam (or take the course). Based on State of Michigan Senate Bill 0621 (2005) Public Act 28 of 2006, students applying for admission will be subject to a criminal background check including fingerprinting. Exclusions for convictions can range from one year to permanent exclusion. Questions should be directed to the legal affairs and/or security department.

In addition, all students must pass a drug screen to enter any nursing program at JCC, as well as complete immunizations, meet technical standards and complete a physical form. Following graduation, applicants for licensure as a nurse are also asked about criminal convictions and substance abuse, and this can impact the individual's ability to become licensed.

Minimum credits	63
Minimum cumulative GPA	2.0
Minimum grades in all courses	2.0
Minimum JCC credits	29
MACRAO Agreement	No

It is highly recommended that CEM be taken prior to Human Anatomy & Physiology (BIO 155 or BIO 253 & 254). All sciences and NUR 121 must be taken within the last eight years. Nursing courses MUST be taken in sequence, with the exception of pharmacology. Students are required to take the NCLEX review course as part of the curriculum in order to graduate. An academic advisor must be consulted to apply to the program. The nursing program requirements are highly demanding and time consuming. Following admission, full-time employment is not recommended.

GENERAL EDUCATION REQUIREMENTS – (19 credits)**ADO 1: Write clearly, concisely and intelligibly (3 credits)**

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly
 Program courses meet this requirement

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher (MAT 133 preferred)

ADO 4: Demonstrate scientific reasoning (5-8 credits)

Take the following:

BIO 155 Anatomy & Physiology

or BIO 253 Human Anatomy and Physiology I

and BIO 254 Human Anatomy and Physiology II

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (4 credits)

Take the following:

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Program courses meet this requirement

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

NURSING (LPN TO ADN) RELATED REQUIREMENTS – (14 credits)

Take the following:

BIO 220 Microbiology

CEM 132 Fundamentals of Organic & Biological Chemistry

or CEM 137 Chemistry of Life

NUR 121 Pharmacology*

PSY 252 Developmental Psychology

NURSING (LPN TO ADN) CORE REQUIREMENTS – (30 credits)

Take the following:

NUR 124 Transitions Bridge & Care of the Family

NUR 170 Self-Care

NUR 172 Pathophysiology

NUR 270 Partially Compensatory

NUR 272 Mental Health

NUR 274 Leadership

NUR 275 Wholly Compensatory

NUR 276 Family II–Nursing of Children

**May take before nursing sequence but must be completed prior to NUR 270, NUR 276, and NUR 272. Students may test out of NUR 121.*

***It is highly recommended that general education courses be taken before the nursing course sequence if at all possible.*

NOTE: Nursing courses are assigned various labs and clinicals. Be sure to follow directions each semester you register. The schedule is subject to change on short notice. Specific clinical sites and times cannot be guaranteed. The nursing department reserves the right to change the curriculum and program requirements.

HEALTH STUDIES – ASSOCIATE IN APPLIED SCIENCE (HEST.AAS)

(Program is under revision. Contact the nursing department chair.)

The Jackson Community College/ University of Michigan Bachelor of Science in Nursing (BSN) transfer program is a collaborative agreement between the Jackson Community College Nursing Department and the University of Michigan School of Nursing. The JCC portion of the program prepares students for a smooth transition into the junior level of the U of M BSN curriculum. While at JCC, admitted students will concentrate on foundational courses in the sciences, general education and nursing. Students will not be eligible to take the National Council State Boards Licensing Exam – Registered Nurse (NCLEX-RN) until completion of the baccalaureate degree at U of M. Students will graduate from JCC with an Associate in Applied Science in Health Studies.

Students must apply for admission to the program and must do so within the application deadline. Admission is competitive and is not guaranteed. There are specific admission criteria and it is the student's responsibility to understand the requirements. Qualifying and accepted students are admitted to JCC in the fall of the academic year with anticipated transfer to the U of M two years later.

Students will be subject to a criminal background check including fingerprinting. Questions about exclusion from a nursing program of study based on a past criminal conviction should be directed to the legal affairs department. All nursing students must pass a drug screen, provide evidence of immunization status, meet technical standards and submit a signed health certificate. Students are required to take and pass the HESI RN Admission Assessment (A²) prior to admission. The program is rigorous and requires that each admitted student carry a full-time load (a minimum of 12 credits) each semester, maintain a minimum overall GPA of a 3.0 and earn a minimum of a 3.0 in all science and nursing courses. Students are required to follow a pre-determined, full-time course sequence. A copy of the course sequence is included in the application packet. For further information and/or to schedule an admission interview, contact the program coordinator at 517.796.8492.

Minimum credits	68
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grade	2.0
Minimum JCC credits	25
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (25 credits)**ADO 1: Write clearly, concisely and intelligibly (3 credits)****Take the following:**

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly

Program courses meet this requirement

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)**Take the following:**

MAT 133 Introduction to Probability & Statistics

ADO 4: Demonstrate scientific reasoning (5 credits)**Take the following:**

BIO 155 Human Anatomy & Physiology

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (4 credits)**Take the following:**

PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)**Choose one of the following:**

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (3 credits)**Take the following:**

HPF 277 Stress Management

HPF 160 Wellness

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures (3 credits)**Take the following:**

SOC 246 Family and Marriage

HEALTH STUDIES RELATED REQUIREMENTS – (15 credits)

BIO 220 Microbiology

CEM 131 Fundamentals of Chemistry

CEM 132 Fundamentals of Organic & Biological Chemistry

PSY 252 Developmental Psychology

HEALTH STUDIES CORE REQUIREMENTS – (25 credits)**Take the following:**

NUR 101 Fundamentals of Nursing

NUR 103 Introduction to Professional Nursing

NUR 121 Pharmacology

NUR 172 Pathophysiology

NUR 207 Nutrition

NUR 245 Physical Assessment

NUR 246 Holistic Health Assessment

HEALTH STUDIES ELECTIVE – (3 credits)**Choose one of the following**

PSY 222 Applied Behavior Analysis

PSY 245 Infancy and Childhood

PSY 251 Abnormal Psychology

PSY 256 Educational Psychology

PSY 290 Human Sexuality

PRACTICAL NURSING – CERTIFICATE (LPNU.CERT)

This program prepares students to provide direct nursing care, under supervision, to individuals in a variety of health care settings. The program consists of integrated lectures, labs and clinical experiences. Students who successfully complete the curriculum receive the certificate in practical nursing and are eligible to take the state licensing examination (NCLEX-PN) required for licensure as a practical nurse (LPN).

Students must apply for admission to the nursing program, and must do so within the application deadlines. Admission to the nursing program is highly competitive and is not guaranteed. There are special admission requirements to the nursing program and it is the student's responsibility to understand the requirements and adhere to them. Students must meet all admission requirements. Admission into the program is based on a competitive point system, a pre-admission standardized exam (HESI RN Admission Assessment (A²)) and completion of prerequisite courses. The selection process is subject to change. Students must work with an academic advisor to plan the prerequisite course sequence and to make application to the nursing program. The advisor will explain the point system on the "Practical Nursing Selection Process-Worksheet."

The three-semester practical nursing program begins in March of each year and concludes the following May. There is a short break from mid-July to late August between Semester I and Semester II. Practical nursing classes are on a different course calendar than other classes. All science classes must be taken within the last eight years. Practical nursing courses must be taken in sequence. Students are required to take a licensure preparation course at JCC as part of their curriculum in order to graduate. Based on State of Michigan Senate Bill 0621 (2005) Public Act 28 of 2006, students applying for admission will be subject to a criminal background check including fingerprinting. Exclusions for convictions can range from one year to permanent exclusion. Questions should be directed to the legal affairs and/or security department.

In addition, all students must pass a drug screen to enter any nursing program at JCC, as well as complete immunizations, meet technical standards and complete a physical form. Following graduation, applicants for licensure as a nurse are also asked about criminal convictions and substance abuse, this can impact the individual's ability to become licensed.

Prerequisites are:

LPN 132 Medications

or NUR 121 Pharmacology

LPN 141 Body Structure & Function

or MOA 141 Body Structure & Function

or BIO 155 Human Anatomy & Physiology

or BIO 253 Human Anatomy and Physiology I

and BIO 254 Human Anatomy and Physiology II

NUR 207 Normal/Therapeutic Nutrition

or MOA 145 Normal/Therapeutic Nutrition

or LPN 145 Normal/Therapeutic Nutrition

Minimum credits 50

Minimum cumulative GPA 2.0

Minimum grades in all prerequisite
and nursing classes* 2.0

Minimum JCC credits 32

MACRAO Agreement No

**HOWEVER – Check “The Point System” on the “PN Selection Process Worksheet” regarding values of points for designated grades. Admission is competitive and based on grades.*

GENERAL EDUCATION REQUIREMENTS – (7 credits)

ENG 131 Writing Experience I

MAT 131 Intermediate Algebra or higher (MAT 133 preferred)

PRACTICAL NURSING RELATED REQUIREMENTS – (13 credits)

Take the following:

LPN 132 Medications

or NUR 121 Pharmacology

LPN 141 Body Structure & Function

or MOA 141 Body Structure & Function

or BIO 155 Human Anatomy & Physiology

or BIO 253 Human Anatomy and Physiology I

and BIO 254 Human Anatomy and Physiology II

NUR 207 Normal/Therapeutic Nutrition

or MOA 145 Normal/Therapeutic Nutrition

or LPN 145 Normal/Therapeutic Nutrition

MOA 120* Medical Terminology

PRACTICAL NURSING CORE REQUIREMENTS – (30 credits)

Take the following:

LPN 131 Foundations of Nursing

LPN 180 Nursing Care of Adults–1A

LPN 181 Nursing Care of Adults–1B

LPN 182 Role of the Practical Nurse

LPN 185 Nursing Care of Adults II

LPN 186 Maternal/Child Concepts

**Preferable to be taken before being admitted to the nursing program. See advisor.*

NOTE: Nursing courses include various labs and clinicals, this must be taken in addition to the lectures. Be sure to follow directions each semester and consult with an academic advisor for guidance. This schedule is subject to change on short notice. Specific clinical sites and times cannot be guaranteed. The nursing department reserves the right to change the curriculum and program requirements as necessary. The nursing program requirements are highly demanding and time consuming. Following admission, full-time employment is not recommended.

**RADIOGRAPHY – ASSOCIATE IN
APPLIED SCIENCE (RADI.AAS)**

A radiographer is the allied health professional who uses ionizing radiation to image patients in hospitals and various health clinical settings. Radiographers perform general x-ray imaging of the body and may also go on to perform advanced imaging procedures such as CT, MRI, mammography and more.

It is a two-year program leading to an Associate in Applied Science degree. The curriculum consists of integrated didactic and clinical course work in an approved clinical education affiliate. The program is designed to prepare the student for employment in the field of diagnostic radiography. Positions are located within hospitals, medical clinics and other diagnostic imaging institutions. Upon successful completion, students are eligible to write the American Registry of Radiological Technologists (ARRT) exams. Satisfactory completion of the ARRT board certifying exams allows the radiographer to use the initials of R.T. (R), Registered Technologist (Radiography).

There are special admission requirements to the radiography programs, and it is the student's responsibility to understand the requirements and adhere to them. Entry into a program is competitive and based on a "point system." Point values are based on grades earned in prerequisite coursework and the interview process.

Applications are processed according to the following:

- Applications must be received by the Allied Health Office by January 31.
- Questionnaires will be mailed to eligible applicants.
- Completed questionnaires must be returned by the stated due date.
- Radiography Admission Committee conducts interviews.
- Students are notified by mail of application/interview results.
- Accepted students begin Spring semester.

BIO 132 or BIO 155 or BIO 253 and BIO 254, DMS 100, HOC 130 and MOA 120 must be successfully completed before applying to the program.

Minimum credits..... 84

Minimum cumulative GPA 2.0

Minimum grade in BIO 132 or BIO 155 or BIO 253/254,
DMS 100, HOC 130 and MOA 120 3.0

Minimum grade in all courses 2.0

Minimum JCC credits 12

MACRAO Agreement No

GENERAL EDUCATION REQUIREMENTS – (22 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-8 credits)

Choose from the following:

- BIO 132 Human Biology
 or BIO 155 Anatomy & Physiology
 or BIO 253 Human Anatomy and Physiology I
 and BIO 254 Human Anatomy and Physiology II

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Take the following:

- PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

- ART 111 Art History: Prehistoric to 1400
 ART 112 Art History: Renaissance to Present
 ENG 210 Introduction to Film
 ENG 246 Short Story & Novel
 ENG 247 Poetry & Drama
 ENG 252 Shakespeare
 ENG 254 Children's Literature
 ENG 255 American Literature – 19th Century
 ENG 256 American Literature – 20th Century
 HUM 131 Cultural Connections
 MUS 131 Understanding Music
 THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (3 credits)

Take the following:

- PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

RADIOGRAPHY RELATED REQUIREMENTS – (12 credits)

Take the following:

- CIS 101 Introduction to Computer Systems
 or CIS 201 Advanced Computer Technologies
 DMS100 Introduction to Diagnostic Imaging
 HOC 130 Introduction to Health Occupations
 MOA120 Medical Terminology

RADIOGRAPHY CORE REQUIREMENTS – (49 credits)

Take the following:

- RAD 120 Radiographic Orientation
 RAD 121 Radiographic Positioning I
 RAD 125 Radiographic Positioning II
 RAD 126 Clinical Practicum I
 RAD 162 Clinical Practicum II
 RAD 211 Clinical Practicum III

- RAD 214 Clinical Practicum IV
 RAD 219 Clinical Practicum V
 RAD 160 Fundamentals of Radiologic Science
 RAD 161 Radiographic Exposure
 RAD 212 Special Radiographic Studies
 RAD 213 Radiobiology
 RAD 218 Radiographic Pathology

RESPIRATORY CARE – ASSOCIATE IN APPLIED SCIENCE (RECA.AAS)

Respiratory care is an allied health profession whose practitioners focus on diagnosis and treatment of cardiopulmonary disorders and diseases. A respiratory care practitioner can be instrumental in assisting a physician in the diagnosis, treatment and prevention of a wide spectrum of disorders affecting the heart and lungs, and specializes in the application of scientific knowledge and theory to practical, clinical problems of respiratory care. A respiratory care practitioner is qualified to assume primary clinical responsibility for all respiratory care modalities, including responsibilities involved in supervision of respiratory technician functions.

This is a two-year program leading to an Associate in Applied Science degree. The curriculum consists of integrated didactic and clinical course work in approved clinical education affiliates. The program is designed to prepare the student for employment in the field of respiratory care. Positions are located within hospitals, long-term care facilities and other outpatient settings.

Upon successful completion, students are eligible to write the national Board for Respiratory Care (NBRC) exams. Satisfactory completion of the NBRC board certifying exams allow the respiratory care practitioner to use the initials of RRT, Registered Respiratory Therapist. Admission to the program is not guaranteed; entry into the program is competitive and based on a "points system." The order of acceptance of qualified applicants will be based on points achieved.

Minimum credits	88
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum grade in BIO 132 or BIO 155 or BIO 253 and BIO 254, ENG 131, HOC 130, MOA 120 and MAT 131	3.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (23 credits)**ADO 1: Write clearly, concisely and intelligibly (6 credits)**

Take the following:

- ENG 131 Writing Experience I
 ENG 132 Writing Experience II

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

- COM 231 Communication Fundamentals
 COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

- MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

- BIO 132 Human Biology
or BIO 155 Human Anatomy & Physiology
or BIO 253 Human Anatomy and Physiology I
and BIO 254 Human Anatomy and Physiology II

ADO 5: Understand human behavior and social systems, the principles which govern them, and their implications for the present and future (3-4 credits)

Take the following:

- PSY 140 Introduction to Psychology

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

- ART 111 Art History: Prehistoric to 1400
ART 112 Art History: Renaissance to Present
ENG 210 Introduction to Film
ENG 246 Short Story & Novel
ENG 247 Poetry & Drama
ENG 252 Shakespeare
ENG 254 Children's Literature
ENG 255 American Literature – 19th Century
ENG 256 American Literature – 20th Century
HUM 131 Cultural Connections
MUS 131 Understanding Music
THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts

Program courses meet this requirement

ADO 9: Working productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

RESPIRATORY CARE RELATED REQUIREMENTS – (10 credits)

Take the following:

- CEM 131 Fundamentals of Chemistry or higher
CIS 101 Introduction to Computer Systems
MOA 120 Medical Terminology

RESPIRATORY CARE CORE REQUIREMENTS – (55 credits)

Take the following:

- RES 100 Respiratory Care Techniques I
RES 104 Cardiopulmonary Assessment I
RES 110 Respiratory Care Techniques II
RES 114 Cardiopulmonary Pathophysiology I
RES 115 Clinical Practice I
RES 120 Respiratory Care Techniques III
RES 124 Respiratory Pharmacology
RES 125 Clinical Practice II
RES 126 Cardiopulmonary Pathophysiology II
RES 203 Diagnostic Theory

RES 205 Clinical Practice III

RES 207 Advanced Cardiopulmonary Anatomy & Physiology

RES 210 Perinatal & Pediatric Respiratory Care

RES 220 Respiratory Seminar

RES 225 Clinical Practice IV

TRANSFER PROGRAMS

MEDICAL LABORATORY TECHNOLOGY

Medical laboratory technicians search for clues about the presence, extent and causes of disease. They use their knowledge of how diseases affect test results to provide an accurate and complete picture of a patient's condition. MLTs analyze blood and body fluids for a wide variety of chemical changes, using the latest biomedical instruments. They culture and identify bacteria that cause disease and examine blood to detect anemias, leukemias and infections, ensuring that donor blood is safe for transfusion.

Kellogg Community College and JCC jointly offer an Associate of Applied Science degree program in medical laboratory technology. This program allows students to take the specified general education courses identified in this agreement at JCC and complete their program by taking the occupational specific courses at Kellogg Community College. These courses may be taken concurrently provided students are formally admitted to the program at Kellogg Community College and all prerequisite course requirements are adhered to. Consult an academic advisor for more information.

The Bachelor of Applied Science in Allied Health option with Siena Heights University offers a unique degree program for JCC students with training and/or experience in diagnostic medical sonography, emergency medical services, medical assistant, nursing and related fields. This career-oriented degree for graduates of the JCC two-year programs is structured on an inverted major concept. All the courses needed to earn a bachelor's degree is available on JCC's main campus through the Siena Heights University degree completion center.

JCC/U OF M BACHELOR OF SCIENCE IN NURSING PROGRAM

(Program is under revision. Contact the nursing department chair.)

A Bachelor of Science in Nursing (BSN) degree prepares students for a critically important, well-paid and secure career. It also allows broader advancement opportunities since some positions are open only to nurses with a minimum of a bachelor's degree. Careers may include advancement to positions in management or clinical education. Students must meet the admission requirements to JCC and the U of M School of Nursing, which requires a 3.0 cumulative GPA in all prior college experience. The program is competitive with a limited number of spaces available annually. The JCC/U of M Bachelor of Science in nursing program allows students to enroll and complete the first two years of the baccalaureate nursing program at JCC and then transfer with junior status directly to the University of Michigan. Students will be awarded an associate in health studies upon completing the required courses at JCC. Students are eligible to sit for the nursing licensure exam (NCLEX-RN) at the completion of the BSN degree at U of M. For more information contact: Office of Nursing Admissions at 517.796.8424.

DENTAL HYGIENE

Dental hygienists work under the direction or supervision of a licensed dentist, and must be licensed by the state in which they practice. Clinical responsibilities of the dental hygienist in Michigan includes oral examination; scaling and polishing teeth; exposing, processing, mounting and interpreting x-rays; taking impressions and preparing diagnostic models; and other activities related to the oral health of the patient. JCC offers only prerequisite and general education courses

that can be transferred to a dental hygiene program. Five colleges/universities offer a dental hygienist program. Some offer an associate degree and others a bachelor's degree. Consult an academic advisor for more information on transfer options available.

MEDICAL SCIENCES (PRE-MEDICINE, PRE-DENTAL, PRE-PHARMACY)

The medical sciences major is designed for pre-professional students who are interested in graduate training in human medicine. Students have a variety of areas of specialization within the field of medicine available to them at the postgraduate level. They may pursue medical, osteopathic or dental school, graduate level pharmacy programs and physicians assistant or pathology assistant programs.

SUGGESTED COURSE SEQUENCE

First Year, Fall Semester

BIO 131, CEM 141, ENG 131, MAT 141 or MAT 151

First Year, Winter Semester

BIO 232, CEM 142, ENG 132, PSY 140

First Year, Spring Semester

PSY 252, MACRAO humanities course

Second Year, Fall Semester

CEM 241, PHL 236, PHY 231, MACRAO social science course

Second Year, Winter Semester

CEM 242, PHY 232, MACRAO humanities course, program-specific course requirement

PHYSICAL THERAPY

Physical therapists provide clients, infants through elderly adults, with services at the preventive, acute and rehabilitative stages directed toward achieving increased functional independence and decreased functional impairment. Physical therapists interact and practice in collaboration with a variety of health professionals.

SUGGESTED COURSE SEQUENCE

First Year, Fall Semester*

BIO 131, CEM 141, ENG 131, MAT 141

First Year, Winter Semester

CEM 142, ENG 132, PHL 236, PSY 140

Second Year, Fall Semester

BIO 253, MAT 133, PHY 231, MACRAO humanities course

Second Year, Winter Semester

BIO 254, PHY 232, PSY 252, MACRAO humanities course

PRE-VETERINARY

Veterinarians play a major role in the health care of pets, livestock, and zoo, sporting, and laboratory animals. Veterinarians also use their skills to protect humans against diseases carried by animals, and conduct clinical research on human and animal health problems.

SUGGESTED COURSE SEQUENCE

First Year, Fall Semester

BIO 131, CEM 141, ENG 131, MAT 141 or MAT 151

First Year, Winter Semester

BIO 232, CEM 142, ENG 132, MACRAO social science course

Second Year, Fall Semester

CEM 241, PHY 231, MACRAO humanities & social science courses

Second Year, Winter Semester

BIO 220, CEM 242, PHY 232, MACRAO humanities course



HUMAN SERVICES CAREER PATHWAY

This career pathway includes careers related to economic, political and social systems including education, government, law and law enforcement, early childhood development and education, civil service, education, leisure and recreation, military, religion, personal services and social services. These may include law and legal studies, law enforcement, public administration and child and family services.

DEGREES/CERTIFICATES

- Corrections
- Law Enforcement

CONCENTRATION

The "concentration" process is a building block approach to completing a trade certificate program. Students can choose to complete the concentration depending upon the level of skill and knowledge desired. Students can apply for a concentration upon completion of the required courses.

TRANSFER PROGRAMS IN HUMAN SERVICES PATHWAY

The first two years of college education usually consist of general education courses, introductory courses in a major and/or program of study, and selected electives. Refer to page 39 for additional information on transfer and MACRAO. Academic advisors assist in planning transfer programs, and provide transfer guide sheets indicating courses that meet the requirements of various programs of study at four-year colleges. Sample curricula for a few popular transfer programs are included.

- Criminal Justice/Corrections or Law Enforcement to Siena Heights University
- Psychology
- Social Work
- Pre-Law
- Education

Jackson Community College has published this catalog for information purposes only and its contents do not constitute a contract between this institution and prospective or enrolled students. The information contained in this general college catalog reflects the current curricula, policies and regulations of the College. However, these are subject to change at any time by action of the Board of Trustees or the administration. The information is generally believed to be accurate, but the College disclaims liability for inadvertent errors or omissions.

**CORRECTIONS – ASSOCIATE IN
APPLIED SCIENCE (CORR.AAS)**

Corrections officers are charged with safekeeping any person who has been arrested, is awaiting trial or is in a correctional institution. Officers maintain order within the institution, enforce rules and regulations and often supplement counseling that inmates received from mental health professionals. In addition to being prison/jail guards, corrections officers can work in other related positions, such as juvenile facilities.

Minimum credits	61
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (21 credits)

ADO 1: Write clearly, concisely and intelligibly (3 credits)

Take the following:

ENG 131 Writing Experience I

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

COM 231 Communication Fundamentals

COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4 credits)

Choose one of the following:

BIO 110 Introductory Biology

BIO 131 General Biology

BIO 132 Human Biology

BIO 155 Human Anatomy & Physiology

BIO 220 Microbiology

BIO 253 Human Anatomy and Physiology I

CEM 131 Fundamentals of Chemistry

CEM 141 General Chemistry

GEL 160 Introduction to Geology

NSC 131 Contemporary Science

PHY 131 Conceptual Physics

PHY 151 Astronomy

PHY 231 College Physics I

PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them and their implications for the present and future (3 credits)

Take the following:

PLS 141 American National Government

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

ART 111 Art History: Prehistoric to 1400

ART 112 Art History: Renaissance to Present

ENG 210 Introduction to Film

ENG 246 Short Story & Novel

ENG 247 Poetry & Drama

ENG 252 Shakespeare

ENG 254 Children's Literature

ENG 255 American Literature – 19th Century

ENG 256 American Literature – 20th Century

HUM 131 Cultural Connections

MUS 131 Understanding Music

THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

HPF 160 Wellness

HPF 186 Weight Training and Wellness

HPF 277 Stress Management

HPF 283 Managing Stress and Holistic Health

PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

CORRECTIONS RELATED REQUIREMENTS – (16 credits)

Take the following:

CIS 101 Introduction to Computer Systems

ENG 232 Technical & Business Writing

PSY 140 Introduction to Psychology

PSY 251 Abnormal Psychology

SOC 231 Principles of Sociology

CORRECTIONS CORE REQUIREMENTS – (15 credits)

Take the following:

CRJ 119* Client Growth & Development

CRJ 120* Human Relations for Corrections

CRJ 121* Introduction to Corrections

CRJ 124* Institution Populations

CRJ 127* Corrections Law

CORRECTIONS ELECTIVES – (9 credits)

Choose nine credits from the following:

CRJ 101 Criminal Law

CRJ 104 Criminal Justice Psychology

CRJ 108 Criminal Justice Fieldwork – Security

CRJ 111 Introduction to Criminal Justice

CRJ 112 Crime & Delinquency

CRJ 117 Criminology

SOC 117 Criminology

CRJ 125 Parole & Probation

CRJ 203 Field Studies

**Recommended for prospective State of Michigan correctional officers. Each corrections course must be completed with a 2.0 to meet the requirement of the Michigan Correctional Officers Training Council "Desired" background for students to be successful in particular courses (this is for courses that do not have specific*

prerequisites, but desired experience or knowledge) includes a willingness to help others, good interpersonal communication, and critical thinking skills. Students cannot start the program during Winter semester and still complete in nine semesters due to prerequisites.

CORRECTIONS – CERTIFICATE (CORR.CERT)

Offers an opportunity to pursue initial study in the student's area of interest. Credits earned may apply toward an associate degree.

Minimum credits	35
Minimum cumulative GPA	2.0
Minimum grade in each course	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (20 credits)

Take the following:

COM 231	Communication Fundamentals
ENG 131	Writing Experience I
ENG 232	Technical & Business Writing
MAT 131	Intermediate Algebra or higher
PLS 141	American National Government
PSY 140	Introduction to Psychology

CORRECTIONS CORE REQUIREMENTS – (15 credits)

CRJ 119*	Client Growth & Development
CRJ 120*	Human Relations for Corrections
CRJ 121*	Introduction to Corrections
CRJ 124*	Institution Populations
CRJ 127*	Corrections Law

**Recommended for prospective State of Michigan correctional officers. Each corrections course must be completed with a 2.0 to meet the requirement of the Michigan Correctional Officers Training Council.*

CORRECTIONS OFFICER – SKILL SET (CORR.SSET)

Minimum credits	15
Minimum GPA	2.0
Minimum grade in each course	2.0
Minimum JCC credits	12
MACRAO Agreement	No

REQUIRED COURSES – (15 credits)

Take the following:

CRJ 119	Client Growth & Development
CRJ 120	Human Relations for Corrections
CRJ 121	Introduction to Corrections
CRJ 124	Institution Populations
CRJ 127	Corrections Law

Students need an ACT of 18 in mathematics, reading and English to be exempt from course placement assessment. Students who complete course placement and who do not receive a minimum of ENG 080 in reading and place into ENG 131 are not eligible to enroll in more than three CRJ courses in one semester. Students who successfully pass the Civil Service Exam may waive course placement assessment and complete required coursework for corrections officers.

CORRECTIONS OFFICER – (STATE OF MICHIGAN)

The information set forth summarizes the requirements of the Michigan Department of Corrections for prospective corrections officers. These requirements, effective October 2000, are for informational purposes only and are subject to change by the Michigan Department of Corrections. Students should contact the Michigan Department of Corrections or the Michigan Department of Civil Service for information regarding its current requirements for correctional officers 517.334.7569 or 1.888.820.7129.

QUALIFICATIONS FOR CORRECTIONAL OFFICERS

- Minimum requirements: Possession of a high school diploma or GED and a minimum 18 years of age.
- To be eligible for consideration as a corrections officer, certain education and exam requirements must be satisfied. Most applicants must pass a written Civil Service Exam and have an educational background that includes at least 15 semester (or 23 term) college credit hours in corrections, criminal justice, psychology, sociology, family relations, guidance and counseling, pastoral counseling, social work or law enforcement. These credits must be earned prior to submitting an application.
- Possession of 30 semester (or 45 term) college credit hours in any academic or degree prerequisite area meets the educational requirements, however passing the Civil Service exam is also required. These credits must be earned prior to submitting an application.
- Exam will be waived if you have an honorable discharge from active duty or National Guard duty or are currently a member in good standing in the National Guard.
- Any bachelor's degree or two years of satisfactory corrections officer employment at the state or federal prison level fulfills the education requirements and the exam is waived. Before being hired, an applicant must pass a physical fitness test given by the Michigan Department of Corrections which consists of:
 - completing 13 sit-ups in 30 seconds
 - 17 push-ups in 60 seconds, and
 - walking up and down steps, ranging up to 11 3/4 inches, for six minutes.

In addition, an applicant must have acceptable vision, hearing, and general good physical health, and pass a drug screen*.

An individual who has been convicted of a felony or domestic violence cannot be hired. Consideration cannot be given to an applicant who is on misdemeanor probation, has outstanding warrants, or has a controlled substance (drug) related conviction in any jurisdiction, including drug-related military discharges. In addition, an applicant who has been convicted of any other misdemeanor shall not be eligible for employment until one year after satisfactory completion of any sentence imposed, including probation.

How to apply: Applications are available at www.michigan.gov/mdcs.

For further information, please call 517.636.0780 or 1.888.820.7129.

LAW ENFORCEMENT – ASSOCIATE IN APPLIED SCIENCE (LAEN.AAS)

Careers in law enforcement, including police officers and deputy sheriffs, are ever changing. Police officers help prevent crimes, investigate crimes and control traffic. Detectives and special agents gather facts and evidence for criminal cases. In Michigan, students must complete police academy training to be eligible for employment as a police officer. In many cases, police agencies require a minimum of an associate degree for new employees.

Minimum credits	61
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (24 credits)

ADO 1: Write clearly, concisely and intelligibly (6 credits)

Take the following:

- ENG 131 Writing Experience I
- ENG 132 Writing Experience II

ADO 2: Speak clearly, concisely and intelligibly (3 credits)

Choose one of the following:

- COM 231 Communication Fundamentals
- COM 240 Interpersonal Communication

ADO 3: Demonstrate computational skills and mathematical reasoning (4 credits)

Take the following:

- MAT 131 Intermediate Algebra or higher

ADO 4: Demonstrate scientific reasoning (4-5 credits)

Choose one of the following:

- BIO 110 Introductory Biology
- BIO 131 General Biology
- BIO 132 Human Biology
- BIO 155 Human Anatomy & Physiology
- BIO 220 Microbiology
- BIO 253 Human Anatomy and Physiology I
- CEM 131 Fundamentals of Chemistry
- CEM 141 General Chemistry
- GEL 160 Introduction to Geology
- NSC 131 Contemporary Science
- PHY 131 Conceptual Physics
- PHY 151 Astronomy
- PHY 231 College Physics I
- PHY 251 Modern University Physics I

ADO 5: Understand human behavior and social systems, the principles which govern them and their implications for the present and future. (3 credits)

Take the following:

- PLS 141 American National Government

ADO 6: Understand aesthetic experience and artistic creativity (3 credits)

Choose one of the following:

- ART 111 Art History: Prehistoric to 1400
- ART 112 Art History: Renaissance to Present
- ENG 210 Introduction to Film

- ENG 246 Short Story & Novel
- ENG 247 Poetry & Drama
- ENG 252 Shakespeare
- ENG 255 American Literature – 19th Century
- ENG 256 American Literature – 20th Century
- HUM 131 Cultural Connections
- MUS 131 Understanding Music
- THR 116 Introduction to Theatre

ADO 7: Think critically

Program courses meet this requirement

ADO 8: Make responsible decisions in personal and professional contexts (1-3 credits)

Choose one of the following:

- HPF 160 Wellness
- HPF 186 Weight Training and Wellness
- HPF 277 Stress Management
- HPF 283 Managing Stress & Holistic Health
- PHL 236 Ethics

ADO 9: Work productively with others, recognizing individual contributions to group success

Program courses meet this requirement

ADO 10: Understand and respect the diversity and interdependence of the world's peoples and cultures

Program courses meet this requirement

LAW ENFORCEMENT RELATED REQUIREMENTS – (16 credits)

Take the following:

- CIS 101 Introduction to Computer Systems
- ENG 232 Technical & Business Writing
- PSY 140 Introduction to Psychology
- PSY 251 Abnormal Psychology
- SOC 231 Principles of Sociology

LAW ENFORCEMENT CORE REQUIREMENTS – (12 credits)

Take the following:

- CRJ 101 Criminal Law
- CRJ 111 Introduction to Criminal Justice
- CRJ 114 Police Administration & Operations
- CRJ 117 Criminology
- or SOC 117 Criminology

LAW ENFORCEMENT ELECTIVES – (9 credits)

Choose 9 credits from the following:

- CRJ 102 Criminal Investigation
- CRJ 104 Criminal Justice Psychology
- CRJ 108 Criminal Justice Fieldwork – Security
- CRJ 112 Crime & Delinquency
- CRJ 113 Introduction to Criminalistics
- CRJ 116 Fire Investigation I
- CRJ 121 Introduction to Corrections
- CRJ 203 Field Studies

LAW ENFORCEMENT– CERTIFICATE (LAEN.CERT)

A certificate in law enforcement offers individuals an opportunity to pursue initial study in their areas of interest. Credits earned may be applied toward an associate degree.

Minimum credits	35
Minimum cumulative GPA	2.0
Minimum grade in all courses	2.0
Minimum JCC credits	12
MACRAO Agreement	No

GENERAL EDUCATION REQUIREMENTS – (17 credits)

Take the following:

ENG 131 Writing Experience I
 ENG 232 Technical & Business Writing
 MAT 131 Intermediate Algebra or higher
 PLS 141 American National Government
 PSY 140 Introduction to Psychology

LAW ENFORCEMENT CORE REQUIREMENTS – (18 credits)

Take the following:

CRJ 101 Criminal Law
 CRJ 102 Criminal Investigation
 CRJ 111 Introduction to Criminal Justice
 CRJ 112 Crime & Delinquency
 CRJ 114 Police Administration & Operations
 CRJ 117 Criminology
 or SOC 117 Criminology

TRANSFER PROGRAMS**CRIMINAL JUSTICE/CORRECTIONS OR LAW ENFORCEMENT**

Students may choose to begin their coursework at JCC and then transfer to earn a bachelor's degree in criminal justice. These students may manage prison systems, serve in law enforcement departments at the state and federal level or become parole and probation officers.

SUGGESTED COURSE SEQUENCE**First Year, Fall Semester**

BIO 131, CRJ 111, ENG 131, MAT 131 or MAT 141*

First Year, Winter Semester

CEM 131, CRJ 112, ENG 132, PSY 140

Second Year, Fall Semester

CRJ 101 or 114, MAT 133**, PSY 251, PLS 141, PHL 231

Second Year, Winter Semester

CRJ 117 or SOC 117, SOC 235, MACRAO humanities courses

**Check mathematics requirements of transfer institution.*

***MSU transfer students register for PSY 144*

CRIMINAL JUSTICE – BACHELOR'S DEGREE OPTION WITH SIENA HEIGHTS UNIVERSITY

Students can work with staff from JCC and Siena Heights University to earn a Bachelor of Arts degree in criminal justice. Tailored to build on the JCC associate degrees in law enforcement or corrections, students can transfer up to 90 credits from JCC and complete at least 30 hours credit from Siena with a minimum of 18 hours of criminal justice classes. All the courses for the bachelor's degree in criminal justice are available at the JCC main campus through the Siena Heights University degree completion center.

PSYCHOLOGY

Psychology covers a broad range of topics. Psychologists specialize in such areas as clinical psychology, counseling psychology, developmental psychology, physiological psychology, neuropsychology, educational psychology, experimental psychology, cognitive psychology, social psychology and cross-cultural psychology. Specialization begins after transferring and continues through graduate work. The first two years of coursework are similar regardless of the specialization.

SUGGESTED COURSE SEQUENCE**First Year, Fall Semester**

BIO 131, ENG 131, MAT 141, PSY 140

First Year, Winter Semester

CEM 131, ENG 132, PSY 144, PSY 152, SOC 231

First Year, Spring Semester

COM 231, HIS 232

Second Year, Fall Semester

CIS 101, PLS 141, PSY 252, SOC 235, MACRAO humanities course

Second Year, Winter Semester

ANT 131, ECN 231, PSY 251, PHL 231, PSY elective

SOCIAL WORK

Students planning a career in social work will learn to identify problems affecting individuals and their environment, become more aware and sensitive to issues of race, ethnicity, religion and gender and use their knowledge, skills and values to enhance the quality and delivery of services in the community. To prepare to become a social worker students obtain either a bachelor's or master's degree. Students need to investigate the programs at their intended transfer institution to be sure they offer the desired program. All social work programs are competitive.

SUGGESTED COURSE SEQUENCE**First Year, Fall Semester**

CIS 101, ENG 131, MAT 131 or MAT 141*, NSC 131

First Year, Winter Semester

BIO 131, ENG 132, MAT 133, PSY 140

First Year, Spring Semester

HIS 232, SOC 231

Second Year, Fall Semester

ECN 231, HUM 131, PLS 141, PSY 251, SOC 235

Second Year, Winter Semester

COM 231, PHL 231, PSY elective, SOC elective

**Check mathematics requirements at transfer institution.*

PRE-LAW

Pre-law is a major often selected by students interested in pursuing careers in government or law. For many students, a bachelor's degree in political science is the first step toward their ultimate goal of an advanced degree in programs such as public administration, law or urban planning, to name a few.

SUGGESTED COURSE SEQUENCE FOR PRE-LAW**First Year, Fall Semester**

ENG 131, HIS 231, MAT 141, PLS 141, MACRAO science course

First Year, Winter Semester

ENG 132, MAT 133, PHL 231, MACRAO science course

Second Year, Fall Semester

COM 231, ECN 231, HIS 232, PSY 140, elective

Second Year, Winter Semester

ECN 232, PHL 232, SOC 231, electives

EARLY CHILDHOOD and TEACHER EDUCATION

The field of education changes rapidly and aspiring teachers must be motivated and dedicated to academic excellence and willing to face the challenges presented in the real world of students, teachers, classrooms and schools in our 21st century. Students pursuing either an elementary, special education or secondary teaching certificate need to major and/or minor in subject disciplines they plan to teach. All students pursuing teacher certification should plan to take the Michigan Test for Teacher Certification: Basic Skills (reading, writing and mathematics) during the second semester of their freshman year or after completion of 15-30 freshman college credit hours. All colleges require successful completion of this test before acceptance into their departments of education. For information on test dates, registration and cost, contact the Student Center, the teacher education academic advisor, the education coordinator, or the JCC Teacher Education website at: www.jccmi.edu/academics/teachereducation.

Each four-year institution has additional requirements for admission into their college/school of education. Students must investigate specific requirements in the teacher education program offered by their intended transfer institution, including information pertaining to certification major and minor areas. Each four-year institution offers teacher certification in particular subject areas. Early in the second semester of the freshman year, students should contact their intended transfer institution for up-to-date transfer information.

Students must first be admitted to the four-year institution and then follow the specific institution's procedure for admittance into that institution's college/school of education. Acceptance into a four-year college is not an automatic acceptance into their college/school of education. To become a state certified teacher in Michigan, a student must earn a bachelor's degree in education and pass the Michigan Basic Skills Test as well as the content test in their major and minor(s).

EARLY CHILDHOOD AND ELEMENTARY EDUCATION

The curriculum for students planning to become early childhood or elementary teachers varies considerably depending on teaching major and/or minors chosen and intended transfer institutions. Please see an advisor for additional information for the full-time early childhood and elementary education student program at JCC. Additional math and science requirements are part of the updated elementary certification.

SECONDARY EDUCATION AND SPECIAL EDUCATION

Students planning to become a secondary education teacher or a special education teacher must follow the recommended course of study provided by the transfer institution. Consult the transfer institution of choice for requirements as early as possible for course selection recommendations.

JCC TEACHER EDUCATION FEATURES

JCC's program for education majors benefits the student by:

- A specially designed booklet for Early Childhood and Teacher Education advising available from the teacher education advisor or the program coordinator.

- Partnerships with and transfer facilitation to four-year institutions.
- Focusing on education issues and perspectives through:
 - EDU focused general education curriculum courses (ex. Chemistry 131 – special section with education focus).
 - Student forums and events where subject matter relative to education and the teaching profession is presented, discussed and clarified.
 - Newsletters and web site information www.jccmi.edu/academics/teachereducation/.
 - The ability to earn an associate degree while preparing to transfer to a four-year institution.

JCC recommends by the end of the freshman year each student:

- Investigate and decide a major/minor subject to teach.
- Investigate and decide on a transfer four-year institution.
- Complete application for the Michigan Test for Teacher Certification (MTTC-Basic Skills).
- Contact desired transfer institution for information regarding accepted courses or follow that institution's transfer guidelines.

ADDITIONAL TEACHER EDUCATION COURSES OFFERED AT JCC INCLUDE:

ART 131 Art Education (3 credits)

ENG 254 Children's Literature (3 credits)

MAT 210 Foundations in Math I (3 credits)

MAT 211 Foundations in Math II (3 credits)

MUS133 Music Education (3 credits)

**Several EDU focus courses are available each semester. Check the teacher education web site at www.jccmi.edu/programs/teachereducation/. See respective areas for course descriptions. Always check your transfer institution for transferability.*





NATURAL RESOURCES & AGRISCIENCE CAREER PATHWAY

Careers in this pathway are related to agriculture, the environment and natural resources. These include agricultural sciences, earth sciences, environmental sciences, fisheries, forestry, horticulture and wildlife.

TRANSFER PROGRAMS

The first two years of college education usually consists of general education courses, introductory courses in a major and/or program of study, and selected electives. Refer to page 39 for additional information on transfer and MACRAO. Academic advisors assist in planning a student's transfer program. They can also provide transfer guide sheets indicating courses that meet the requirements of various programs of study at four-year colleges. Sample curricula for a few popular transfer programs are included.

- Biology
- Mathematics

BIOLOGY

Biology, the study of living organisms, is an exciting, dynamic field that offers the opportunity to study and explore animals, plants and bacteria under a wide range of conditions in the laboratory and outdoors. Biologists work in such widely varying areas as medicine, crop improvement, wildlife management, forensics, toxic waste management, environmental preservation and education.

SUGGESTED COURSE SEQUENCE FOR BIOLOGY MAJORS

First Year, Fall Semester

BIO 131, CEM 141, ENG 131, MAT 141

First Year, Winter Semester

BIO 232, CEM 142, ENG 132, MAT 151*

First Year, Spring Semester

MACRAO social science and humanities courses

Second Year, Fall Semester

BIO 231, CEM 241, CPS 175*, PHY 231

Second Year, Winter Semester

CEM 242, PHY 232, MACRAO social science and humanities courses

**Not required by all transfer institutions.*

MATHEMATICS

Students interested in the field of mathematics may major in mathematics or statistics. Mathematics majors find careers in applied mathematics and education. Statistics majors work in such areas as computer science, management and accounting.

SUGGESTED COURSE SEQUENCE FOR MATHEMATICS

First Year, Fall Semester

CPS 175*, ENG 131, MAT 151, PSY 140

First Year, Winter Semester

CPS 177, ECN 231, ENG 132, MAT 154, MAT 133**

Second Year, Fall Semester

MAT 251, PHY 251, PHL 231, MACRAO social science course

Second Year, Winter Semester

MAT 254, PHY 252, MACRAO humanities courses

**Not required but recommended to prepare for CPS 177*

***MSU students should register for PSY 144*

MILITARY SCIENCE (ROTC)

Jackson Community College (JCC) students may participate in Reserve Officer Training Corps (ROTC) during their tenure at JCC. Students may complete their first two years of the four-year program while students at JCC. Students transferring to a four-year institution and completing the ROTC program requirements will receive an officer commission upon graduation.

Students must take all of the following courses unless granted advanced placement while at JCC:

MSL 101 Foundations of Officership (2 credits)

MSL 102 Basic Leadership (2 credits)

MSL 201 Individual Leadership Studies (2 credits)

MSL 202 Leadership and Teamwork (2 credits)

Students wishing further information about the ROTC programs by contacting:

Department of Military Science
 Eastern Michigan University
 18 Roosevelt Hall
 Ypsilanti, MI 48197
 734.487.1020

serious possibilities



Chapter 7 • Course Descriptions



Catalog 2011-2012



serious possibilities

COURSE DESCRIPTIONS

Internships, independent study, special topics and work experience are special options offered in each discipline. See their activity descriptions. Students seeking any of these options should meet and discuss the choice with the respective faculty.

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

ACCOUNTING (ACC)

ACC 115 Payroll Accounting (2 CR)

Accurate payroll records and timely payroll tax reporting are critical elements for all successful businesses. Learn to apply payroll accounting rules and procedures to support business operations. Learn employment and tax laws that affect payroll preparation. Learn the skills, procedures, and concepts necessary to compute a company's payroll. Topics include hiring, gross pay, FICA taxes, income taxes, employee deductions and benefits, payroll accounting, earnings records, tax deposits, unemployment taxes, recording payroll transactions, Form 940EZ, Form 941, reporting employee earnings and special situations.

Prerequisites: ENG 085* and ENG 090*

ACC 122 Volunteer Income Tax Project (3 CR)

Students will provide free tax service too low to mid income, elderly and disabled tax clients. Working with both the Community Action Agency and the Internal Revenue Service, students will train and test to become VITA (Volunteer Income Tax Assistor) tax preparers. Training will begin during January, field work will take place through April 15 and coursework will wrap up during the remainder of April. Previous computer experience is strongly recommended.

Prerequisites: ENG 085*, CIS 101* and MAT 020* or higher

ACC 130 QuickBooks Pro (2 CR)

Today nearly all businesses rely on computer software to facilitate the accounting process. Learn to use the many features of this popular and sophisticated small business computerized accounting system. Topics include customizing the system to your business, invoicing, statements, collections, bill paying, general ledger, budgeting, and tax reports.

Prerequisites: ACC 216 or higher and CIS 101*

ACC 214 Income Tax Accounting (3 CR)

Federal income tax for personal and business use is explored. Concepts covered include taxable income, deductions, exclusions, exemptions and credits against the tax. Proprietorship tax returns including account and depreciation methods, self-employment taxes, self-employed retirement plans, capital gains and losses, disposition of property (both personal and business) and estimated tax declaration.

Prerequisite: MAT 020* or higher

ACC 216 Financial Accounting Concepts (4 CR)

This course is designed for the non-accounting supervisor/manager who must have an understanding of financial and managerial accounting as it is used in decision making. Learn about annual reports, financial statements, balance sheet accounts and accounting transactions.

Focus on how accounting information is used in decision making and not on the mechanics behind that accounting information. This is an introductory accounting course required for some BUA, CIS and HOC

programs. Students should consider their academic program and select either ACC 216 or ACC 231 for their introductory accounting course.

Prerequisites: ENG 085*, ENG 090* and MAT 020* or higher

ACC 231 Principles of Accounting I (4 CR)

This course is designed for business and accounting majors or the transfer student. Learn the theory and practice of recording accounting data and preparation of financial statements in accordance with Generally Accepted Accounting Principles (GAAP) with an emphasis on sole proprietorships. Current software will be utilized and previous computer experience is strongly recommended. This is an introductory accounting course required for some BUA and all ACC majors. Students should consider their academic program and select either ACC 216 or ACC 231 as their required introductory accounting course. Success in this class depends upon strong analytical problem solving skills, basic computer skills and your dedication. **Prerequisites:** ENG 085*, ENG 090*, MAT 031* or higher and CIS 101 or CIS 121

ACC 232 Principles of Accounting II (4 CR)

This course is designed for business majors, accounting majors, and transfer students. Learn the aspects of accounting unique to corporations followed by an introduction to managerial decision making and uses of accounting data utilizing current software. Topics include stocks, bonds, cash flow, cost accounting, break-even analysis, differential analysis, financial statements and budgeting.

Prerequisite: ACC 231

ACC 234 Managerial Accounting (4 CR)

Management level professionals from all disciplines will be faced with complex situations and decisions. Appropriate managerial accounting reports and critical thinking skills are crucial to a proactive management process. Learn about financial statement analysis, cash flow forecasting, job order costing in manufacturing, process costing in manufacturing, activity based costing in manufacturing, cost-volume analysis, cost behavior analysis, budgeting, responsibility accounting, case study analysis, critical thinking and decision making skills.

Prerequisite: ACC 232

ACC 240 Intermediate Accounting (4 CR)

Professional accountants must have a solid background in GAAP financial accounting concepts. Review and expand your knowledge of accounting theory and processes, nature and content of the balance sheet and income statement, present value tables and their application, currently applicable General Accepted Accounting Principles (GAAP) and recent Financial Accounting Standards Board (FASB) pronouncements. **Prerequisite:** ACC 232

ACC 245 Internship/Externship (3 CR)

Gain valuable work experience in an accounting position. The position must be obtained by the student in coordination with a faculty member and approved by the department before the semester begins.

AVIATION FLIGHT TECHNOLOGY (AFT)

AFT 110 Primary Ground School (3 CR)

Preparation for the FAA Private Pilot written examination by classroom work on federal aviation regulations, air space, meteorology, navigation, communication and aerodynamics.

AFT 112 Primary Flight I (3 CR)

Course includes 20/25 hours of flight. This course prepares the student for solo flight with 15/20 hours of dual instruction and five hours of solo flight. Includes preflight, start-up, radio communication, taxiing, basic flight maneuvers, takeoffs, landings, etc. Must be able to obtain a 3rd Class Medical Certificate.

AFT 114 Primary Flight II (3 CR)

Course includes 15/20 hours of flight. This course prepares the student for solo navigation and solo cross-country flight to meet the requirements for the Private Pilot Practical test. Includes basic instrument training. **Prerequisite:** AFT 112

AFT 116 Primary Flight III (3 CR)

Course includes 20/25 hours of flight and prepares the student for Private Pilot Certification including night flight and proficiency in the required FAA maneuvers. **Prerequisite:** AFT 114

AFT 125 Commercial Ground School (3 CR)

Prepares the student for the FAA Commercial Pilot written examination. In-depth study of meteorology, Federal Aviation regulations, aircraft systems, airspace, aerodynamics, etc.

AFT 130 Commercial Flight I (4 CR)

Initial flight training leading to the Commercial Pilot Certificate with instrument rating. Advanced flight training includes chandelles, lazy 8s, pylons 8s, along with basic instrument techniques.

Prerequisite: AFT 120

AFT 135 Instrument Ground School (3 CR)

Prepares the student for the FAA Instrument Pilot written examination through study of federal aviation regulations, A/C systems, meteorology, IFR departure, en route and arrival procedures.

Prerequisite: AFT 120

AFT 140 Commercial Flight II (4 CR)

Continuation of advanced and instrument flight training including night, basic instrument procedures, navigation, and cross-country flight. Also includes introduction to complex aircraft. **Prerequisite:** AFT 130

AFT 200 Commercial Flight III (4 CR)

Continuation of advanced and instrument flight procedures with emphasis on high-performance maneuvers, solo cross-country and dual instrument en route and approach procedures. **Prerequisite:** AFT 140

AFT 205 Commercial Flight IV (4 CR)

Culmination of the commercial/instrument curriculum with requirements completed for Commercial Pilot Certificate with Instrument Rating in the complex aircraft. **Prerequisite:** AFT 200

AFT 210 Instrument Flight (4 CR)

Designed for the non-commercial pilot, includes all phases of instrument flight including basic instrument, departure, en route and arrival procedures. **Prerequisite:** AFT 135

AFT 215 Flight Instructor Theory (3 CR)

Preparation for completion of the two FAA written examinations for Flight Instructor-Airplane. Covers theory of instruction and analysis of flight maneuvers from the perspective of the instructor.

Prerequisite: AFT 205

AFT 220 Flight Instructor Flight (3 CR)

Preparation for the Flight Instructor-Airplane Certificate through effective techniques of lesson planning, teaching methods, and analysis of maneuvers. **Prerequisite:** AFT 205

AFT 230 Instrument Flight Instructor Flight (3 CR)

Preparation of materials and teaching methods, analysis of maneuvers and instruction in flight instructor responsibilities. **Prerequisite:** AFT 215

AFT 235 Flight Transition (2 CR)

Provides the licensed pilot with the opportunity to develop the knowledge, experience, and flight skills needed for transition to the complex single engine aircraft.

AFT 240 Biennial Flight Review Clinic (1 CR)

Provides the flight review necessary for FAA biennial requirements. Includes ground and flight review appropriate to the certificate or rating held by the student.

AFT 250 IFR Recurrency (1 CR)

Designed for the instrument pilot in need of recurrent training. Satisfies FAR Part 61 requirement for recent IFR experience. Student may utilize simulator, aircraft or both.

AFT 275 Maintenance for Pilots (2 CR)

Pilot-owner oriented procedures for legal self maintenance of aircraft. Considerable hands-on experience detailing preventative maintenance, inspection and repair of aircraft. Contains a review of federal aviation regulations, documents and standard practices pertaining to pilot-owner maintenance.

ALTERNATIVE ENERGY (ALT)
ALT 200 Principles of Alternative Energy (3 CR)

(SAME AS ELT 160)

This course will introduce students to alternative energy systems and their design and applications. The course will focus primarily on wind turbines, solar systems, and hydrogen fuel cells. A basic understanding of electricity is highly recommended.

Prerequisites: ENG 085* and MAT 020* or higher

ALT 210 Fundamentals of Energy Efficiency (2 CR)

(SAME AS CCT 160)

This course will explore the fundamentals of designing and maintaining an energy efficient building to reduce a homeowner or business's cost of utilities. Students will learn techniques to identify wasted energy and the methods needed to modernize an energy inefficient home.

Prerequisites: ENG 085* and MAT 020* or higher

ALT 215 Energy Audit Techniques (3 CR)

(SAME AS CCT 162)

This course will explore the necessary knowledge and skills to conduct a building energy audit. The class will learn how to operate the latest building science technology and equipment to identify heating, cooling, base load, and air leakage problems in a building.

Prerequisites: CCT 160 and MAT 031* or higher

ALT 250 Wind Energy (3 CR)

(SAME AS ELT 163)

In this course students are exposed to many of the skills necessary to install a residential wind turbine system. Topics include siting wind turbines, turbine components, estimating turbine electricity output,

loading, battery, inverters and off-grid/grid-connected systems. Labs include hands-on activities with turbines and electrical equipment. Prior electrical skills and knowledge are required to be successful in this course. **Prerequisites:** ELT 120, ELT 150 and ELT 151

ALT 255 Solar Energy (3 CR)
(SAME AS ELT 166)

This course explores the design, installation and maintenance of photovoltaic (PV) systems. Topics include site survey and assessment, estimating solar array electricity output, inverters, battery systems and off-grid/grid-connected systems. Labs include hands-on activities with solar panels and electrical equipment. Prior electrical skills and knowledge are required to be successful in this course.

Prerequisites: ELT 120, ELT 150 and ELT 151

ALT 260 Geothermal Energy & Systems (2 CR)
(SAME AS CCT 165)

This course will explore the basics of geothermal energy production, theory and technology. Residential system installation, maintenance, and problem diagnosis will also be covered.

Prerequisites: CCT 121 and CCT 131 or ELT 120

ALT 265 Solar Thermal Energy & Systems (2 CR)
(SAME AS CCT 167)

This course will explore the basics of solar thermal energy technology and application. The class will also cover system installation, maintenance and problem diagnosis.

Prerequisites: CCT 121 and CCT 131 or ELT 120

ALT 270 Alternative Fuels (3 CR)
(SAME AS AUT 160)

This course is an overview of alternative fuels used in automobiles and light trucks. Students learn about various alternate fuels, their effect on exhaust emissions, their effect on the environment, the economic impact of alternate fuels and how they contribute to the reduction of importing foreign oil. Topics include hydrogen, fuel cells, natural gas (CNG & LNG), propane (LP gas), ethanol, methanol, and biodiesel.

Prerequisite: ALT 200 or ELT 160

ANTHROPOLOGY (ANT)

ANT 131 Cultural Anthropology (3 CR)

This course is an introduction to anthropology. It presents cultures from all continents, highlighting major lifestyles and illustrating human adaptation to environment from the beginnings of the human species to the present. The course focuses on the thesis that every society is based on an integrated culture, which satisfies human needs and facilitates survival. **Prerequisite:** ENG 085*

ART

ART 101 Two-Dimensional Design (3 CR)

Students will learn the principles and elements of 2-D design and practice their application in a variety of hands-on studio projects. Critical thinking skills such as problem solving, understanding the creative process (from idea to finished product), and addressing visual and conceptual themes are essential parts of the course. These skills are reflected in studio projects.

ART 103 Drawing I: Foundations (3 CR)

This course introduces basic drawing principles and techniques in a studio setting. Students explore contour and tonal drawing using various subjects and media in both observational and conceptual drawings. Projects will incorporate a variety of ability levels, as well as traditional and non-traditional media (including digital images). Students will draw from a nude model. Critical thinking skills such as problem solving, understanding the creative process (from idea to finished product), and addressing visual and conceptual themes are essential parts of the course, reflected in the studio projects. An end of semester portfolio represents students' growth and artistic development.

ART 111 Art History: Prehistoric to 1400 (3 CR)

This course is a survey of art history and aesthetics covering art and architecture from prehistoric times to 1400. **Prerequisite:** ENG 085*

ART 112 Art History: Renaissance to Present (3 CR)

This course is a survey of art history and aesthetics covering art from the Renaissance through the 20th century. **Prerequisite:** ENG 085*

ART 121 Ceramics I: Foundations (3 CR)

A general overview of ceramics that focuses on a variety of hand building techniques as well as wheelwork and finishes.

ART 122 Ceramics II: Wheel & Ceramic Sculpture (3 CR)

This course allows the advanced students an opportunity for further work on wheel-produced production pieces, as well as exploring the possibilities of sculpture created with ceramic materials. Advanced finishing and firing techniques will also be considered.

Prerequisite: ART 121

ART 131 Visual Arts Education (3 CR)

Students explore theories and philosophies of art education with an emphasis on elementary school children's artistic development and hands-on studio art projects. Students study the history of art, aesthetics and art production with a focus on student diversity and multicultural connections and its incorporation in the classroom. Service learning and other fieldwork opportunities are key parts of the course. No prior art experience necessary.

ART 137 Digital Photography I (3 CR)

(SAME AS CIS 137)

This course provides the necessary information and assistance in using a digital camera to capture, edit and manipulate top quality images for both the Internet and printing. Includes techniques on layout, composition, message and color. Students supply their own camera.

ART 152 Painting I: Design & Color (3 CR)

The elements and principles of design and color are introduced to create basic painting composition in a studio setting. Emphasis is given to techniques using acrylics and/or watercolor media. Critical thinking skills such as problem solving, understanding the creative process (from idea to finished product), and addressing visual and conceptual themes are essential parts of the course, reflected in the studio projects. Students will paint from a nude model. Gallery trips, as well as other field experiences, are key aspects of this course. Students work with the instructor to mount an end of semester exhibition, showcasing their artistic growth and development. **Prerequisite:** ART 103

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

ART 201 Three-Dimensional Design: Shapes & Space (3 CR)

Students learn the principles and elements of three-dimensional design and study how to apply them in a variety of studio projects. Students understand and demonstrate the different construction methods needed to create sculpture with a diverse array of media. Critical thinking skills such as problem solving, understanding the creative process (from idea to finished product), and addressing visual and conceptual themes are essential parts of the course. These skills are reflected in studio projects.

ART 205 Drawing II: Figure & Composition (3 CR)

Students learn the elements and principles of drawing from life, with the emphasis on basic anatomy and advanced compositional elements. Projects incorporate advanced techniques and nontraditional media in a studio setting. Students will draw from a nude model. Critical thinking skills such as problem solving, understanding the creative process (from idea to finished product), and addressing visual and conceptual themes are essential parts of the course. These skills are reflected in studio projects. **Prerequisite:** ART 103

ART 237 Digital Photography II (3 CR)

(SAME AS CIS 237)

This course provides the opportunity to refine and extend the skills of photographic seeing. Personal skills in digital photography will be used to explore a complete body of work. Students will be using Photoshop® CS5 to edit and explore their creative outlets further. Students' individual personal goals will be set and executed during the semester. **Prerequisite:** ART 137 or CIS 137

ART 240 Printmaking (3 CR)

The elements and principles of design and color are introduced to create prints in a studio setting. Emphasis is given to techniques using a variety of media and technologies. Critical thinking skills such as problem solving, understanding the creative process (from idea to finished product), and addressing visual and conceptual themes are essential parts of the course, reflected in the studio projects. Gallery trips, as well as other field experiences are key aspects of this course. Students work with the instructor to mount an end of semester exhibition, showcasing their artistic growth and development. **Prerequisite:** ART 101 or ART 103

ART 252 Painting II: The Figure (3 CR)

Student work will primarily involve paintings from a nude model in a studio setting. Students extend previous learning by solving problems dealing with complex compositional and color painting in a variety of situations. The development of a personal style and a culminating portfolio of work are emphasized. **Prerequisite:** ART 152

AUTOMOTIVE SERVICE TECHNOLOGY (AUT)

AUT 101 General Service (2 CR)

This course is designed for those who wish to explore the automotive service technician occupation. Introductory exposure to the various service areas is provided, along with student participation of various service tasks.

AUT 102 Engine Performance I (4 CR)

A comprehensive study including hands-on repair of the automobile's ignition and emission systems. Service procedures include scope analysis, compression testing, cylinder leak-down testing, component

testing with digital multimeters and lab scopes, tune-up, and troubleshooting of the various systems. The combination of AUT 102 & 103 prepares the student with job skills for entry into the workforce and the knowledge for successfully completing the Michigan or ASE certification examinations required for mechanic licensing.

Prerequisites: ENG 085* and MAT 020*

AUT 103 Engine Performance II (4 CR)

A comprehensive study including hands-on repair of the automobile's fuel and computerized engine control systems. Service procedures include fuel pressure testing, fuel injector testing, exhaust gas analysis, scan tool usage, component testing with digital multimeters and lab scopes, and troubleshooting of the various systems. The combination of AUT 102 & 103 prepares the student with job skills for entry into the workforce and the knowledge for successfully completing the Michigan or ASE certification examinations required for mechanic licensing. Students are required to take the Michigan certification test as an integral part of the course. **Prerequisite:** AUT 102

AUT 105 Automotive Brakes (3 CR)

A comprehensive study including hands-on repair of the automobile's braking systems. Service procedures include drum brake service, disc brake service, machining drums and rotors, parking brake service, hydraulic system repair, anti-lock brake system service, and troubleshooting the various systems. This course prepares the student with job skills for entry into the workforce and the knowledge for successfully completing the Michigan or ASE certification examinations required for mechanic licensing. Students are required to take the Michigan certification test as an integral part of the course.

Prerequisites: AUT 101, AUT 234, ENG 085* and MAT 020*

AUT 106 Suspension & Steering (3 CR)

A comprehensive study including hands-on repair of the automobile's steering and suspension systems. Service procedures include pre-alignment inspections, four-wheel alignment, conventional suspension & steering systems, McPherson strut service, rack & pinion steering service, component replacement, and troubleshooting the various systems. This course prepares the student with job skills for entry into the workforce and the knowledge for successfully completing the Michigan or ASE certification examination required for mechanic licensing. Students are required to take the Michigan certification examination as an integral part of the course.

Prerequisites: AUT 101, AUT 234, ENG 085* and MAT 020*

AUT 108 Automotive Air Conditioning & Heating (3 CR)

A comprehensive study including hands-on repair of the automobile's air conditioning and heating systems. Service procedures include cooling system service, refrigeration system service, control system repair, heater service, component testing, environmental issues (the ASE Refrigerant and Recovery Certification test is included and required), and troubleshooting the various systems. This course prepares the student with job skills for entry into the workforce and the knowledge for successfully completing the Michigan or ASE certification examination required for mechanic licensing. Students are required to take the Michigan certification test as an integral part of the course. **Prerequisites:** ENG 085* and MAT 020*

AUT 112 Electrical Systems I (3 CR)

A comprehensive study including hands-on repair of the automobile's electrical system. Service procedures include basic electrical testing using test lights and multimeters, reading basic electrical schematics, battery service, starter service, alternator service, and troubleshooting the various systems. The combination of AUT 112 and 113 prepares the student with job skills for entry into the workforce and the knowledge for successfully completing the Michigan or ASE certification examination required for mechanic licensing.

Prerequisites: ENG 085* and MAT 020*

AUT 113 Electrical Systems II (3 CR)

A comprehensive study including hands-on repair of the automobile's electrical system. Service procedures include basic electronics testing using digital multimeters, advanced electrical schematics, chassis wiring, lighting, circuits, instrumentation, power seats, power windows, wiper systems, air bag systems, electrical accessories, and troubleshooting the various systems. The combination of AUT 112 and 113 prepares the student with job skills for entry into the workforce and the knowledge for successfully completing the Michigan or ASE certification examination required for mechanic licensing. Students are required to take the Michigan certification test as an integral part of the course. **Prerequisite:** AUT 112 and ENG 090*

AUT 118 Diesel Fundamentals (2 CR)

This course is designed for those who wish to explore modern automotive and light truck diesel engines. This will include a study of diesel operating principles, fuel systems, engine construction, sub-systems, diesel maintenance and diagnosis. Shop time will include disassembly, exploration and reassembly of compact diesel engines.

Prerequisites: ENG 085* and MAT 020*

AUT 160 Alternate Fuels (3 CR)

(SAME AS ALT 270)

This course is an overview of alternative fuels used in automobiles and light trucks. Students learn about various alternate fuels, their effect on exhaust emissions, their effect on the environment, the economic impact of alternate fuels and how they contribute to the reduction of importing foreign oil. Topics include hydrogen, fuel cells, natural gas (CNG & LNG), propane (LP gas), ethanol, methanol, and biodiesel.

Prerequisite: ALT 200 or ELT 160

AUT 184 Fundamentals of Collision Repair (3 CR)

This course is a study of the fundamentals of collision repair, vehicle identification, estimating systems, terminology, frontal impact analysis, mechanical systems analysis, steering & suspension damage analysis, restraints, interior, glass, side & rear impact analysis, hazardous materials, personal safety, refinishing safety, and corrosion protection. The class includes classroom discussion and hands-on activities in the shop to develop the skills necessary to repair damaged cars. This course prepares the student with job skills for entry into the workforce and the knowledge to successfully complete the Michigan or ASE certification examination required for mechanic licensing.

AUT 186 Non-Structural Damage Repair (3 CR)

This course is a study of trim & hardware, automotive foams, cosmetic straightening of steel, bolted-on replacement panels, moveable glass, plastic welding, plastic adhesive repair, adhesive bonding, squeeze-type resistance spot welding, welded & adhesively bonded panel

replacement, wind-noise & water leaks, cosmetic straightening of aluminum, and replacing aluminum exterior panels. The class includes classroom discussion and hands-on activities in the shop to develop the skills necessary to repair damaged cars. This course prepares the student with job skills for entry into the workforce and the knowledge to successfully complete the Michigan or ASE certification examination required for mechanic licensing.

Prerequisites: AUT 184, ENG 085* and MAT 020* or higher

AUT 188 Welding & Cutting Steel/Aluminum (3 CR)

This course is a study of oxyacetylene cutting, plasma arc cutting, steel MIG welding, aluminum TIG welding, aluminum MIG welding. The class includes classroom discussion and hands-on activities in the shop to develop the skills necessary to repair damaged cars. This course prepares the student with job skills for entry into the workforce and the knowledge to successfully complete the I-CAR welding qualifications tests for steel and aluminum. **Prerequisites:** AUT 186 and ENG 090*

AUT 190 Structural Damage Repair (3 CR)

This course is a study of stationary glass, measuring, structural straightening of steel, steel unibody construction, unibody structure repair, steel full frame construction, steel full frame repair, structural straightening of aluminum, structural aluminum design, and structural aluminum repair. The class includes classroom discussion and hands-on activities in the shop to develop the skills necessary to repair damaged cars. This course prepares the student with job skills for entry into the workforce and the knowledge to successfully complete the Michigan or ASE certification examinations required for mechanic licensing.

Prerequisite: AUT 188

AUT 201 Engine Repair (4 CR)

A comprehensive study including hands-on repair of the automobile engine. Service procedures include cooling system repair, lubrication system repair, intake systems repair, exhaust repair, engine testing, engine replacement, engine disassembly, cleaning and measurement, cylinder head reconditioning, block reconditioning, machining operations, assembly techniques, and troubleshooting the various systems. This course prepares the student with job skills for entry into the workforce and the knowledge for successfully completing the Michigan or ASE certification examination required for mechanic licensing. Students are required to take the Michigan certification test as an integral part of the course.

Prerequisites: ENG 085* and MAT 020* or higher

AUT 202 Automatic Transmission (4 CR)

A comprehensive study including hands-on repair of automatic transmissions and transaxles. Service procedures include basic transmission service, transmission pressure testing, scan tool testing, transmission assembly replacement, transmission disassembly, inspection of parts, transmission reassembly, and troubleshooting the various systems. This course prepares the student with job skills for entry into the workforce and the knowledge to successfully complete the Michigan or ASE certification examination required for mechanic licensing. Students are required to take the Michigan certification test as an integral part of the course.

Prerequisites: AUT 101, AUT 234, ENG 085* and MAT 020* or higher

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

AUT 203 Advanced Engine Performance (2 CR)

Covers general power train diagnosis, computerized power train diagnosis (including OBD II), ignition system diagnosis (including scope analysis), fuel and air induction diagnosis (including 5-gas analysis), emission control systems diagnosis, and I/M failure diagnosis.

Students who successfully complete this course will be ready to take the ASE L-1, Auto Advanced Engine Performance Specialist Exam.

Prerequisites: AUT 102, AUT 103 and CIS 116

AUT 204 Manual Transmissions & Drivelines (3 CR)

A comprehensive study including hands-on repair of manual transmissions, manual transaxles, and drivelines. Service procedures include transmission service, clutch overhaul, half-shaft repair, driveshaft repair, differential service, axle repair, and troubleshooting the various systems. This course prepares the student with job skills for entry into the workforce and the knowledge to successfully complete the Michigan or ASE certification examination required for mechanic licensing. Students are required to take the Michigan certification test as an integral part of the course.

Prerequisites: AUT 101, AUT 234, ENG 085* and MAT 020* or higher

AUT 210 Internship/Externship (4 CR)

This co-op experience is paid on-the-job training. It prepares the student to acquire hands-on job skills and work habits in conjunction with the student's employment site. The student will work at a sponsoring repair shop or dealership approximately three days a week (or to be arranged with instructor's approval) performing a variety of automotive repairs. Visits by the school supervisor provide the basis for evaluation. Students are required to complete a total of one co-op experience in the associate degree program.

Prerequisite: Instructor Permission Required

AUT 211 Internship/Externship (4 CR)

This co-op experience is paid on-the-job training. It prepares the student to acquire hands-on job skills and work habits in conjunction with the student's employment site. The student will work at a sponsoring repair shop or dealership approximately three days a week (or to be arranged with instructor's approval) performing a variety of automotive repairs. Visits by the school supervisor provide the basis for evaluation. Students are required to complete a total of one co-op experience in the associate degree program.

Prerequisite: Instructor Permission Required

AUT 212 Internship/Externship (4 CR)

This co-op experience is paid on-the-job training. It prepares the student to acquire hands-on job skills and work habits in conjunction with the student's employment site. The student will work at a sponsoring repair shop or dealership approximately three days a week (or to be arranged with instructor's approval) performing a variety of automotive repairs. Visits by the school supervisor provide the basis for evaluation. Students are required to complete a total of one co-op experience in the associate degree program.

Prerequisite: Instructor Permission Required

AUT 214 Auto Lab Experience (4 CR)

Structured lab time to work on auto repair projects in which students have completed coursework and want to expand their knowledge and skills in specific areas previously not covered. May be used as an internal co-op. **Prerequisites:** Choose one of the following - AUT 102, AUT 103, AUT 105, AUT 106, AUT 108, AUT 112, AUT 113, AUT 201, AUT 202 or AUT 204

AUT 234 Undercar Service (2 CR)

This course will provide training in MIG welding, exhaust pipe bending and oxyacetylene cutting procedures. This class is designed to prepare the students to pass the ASE XI Specialist Test: Exhaust Systems.

AUT 240 Hybrid Technology (2 CR)

This course will introduce students to hybrid technology through a combination of classroom and lab experiences. Topics include safety procedures when working on the high voltage systems, understanding the various warning lights, understanding normal operation and diagnosis of the various high voltage systems. Lab will include hands-on activities on a hybrid vehicle. **Prerequisites:** AUT 102 and AUT 112

AUT 248 Diesel Engine Performance (2 CR)

This course is designed to provide an in-depth study of the compact diesel fuel and emission systems. This will include the study of diesel fuel, diesel fuel supply systems, high pressure mechanical and electronic fuel injection systems, computerized engine controls, exhaust gas recirculation valves, exhaust emissions, and soot particle reduction. Shop time will include using diesel fuel systems simulators, scan tool usage for diagnosis of fuel and emission system problems, and work on a diesel powered pick-up truck. **Prerequisite:** AUT 118

AUT 290 Paint & Refinish I (3 CR)

This course is a study of detailing, refinishing equipment, VOC regulations, surface preparation, and masking. The class includes classroom discussion and hands-on activities in the shop to develop the skills necessary to refinish cars. This course prepares the student with job skills for entry into the workforce and the knowledge to successfully complete the Michigan or ASE certification examinations required for mechanic licensing.

Prerequisites: AUT 184, ENG 085* and MAT 020* or higher

AUT 292 Paint & Refinish II (3 CR)

This course is a study of color theory, color application, tinting, blending, refinishing of plastics, and the application of basecoat/clearcoat and tri-coat paint systems. The class includes classroom discussion and hands-on activities in the shop to develop the skills necessary to refinish cars. This course prepares the student with job skills for entry into the workforce and the knowledge to successfully complete the Michigan or ASE certification examinations required for mechanic licensing. **Prerequisites:** ENG 090* and AUT 290

AUT 294 Collision Shop Layout (2 CR)

This course introduces students to planning the equipment requirements of a collision repair shop. Topics include compressed air systems, vehicle lifts, and other capital equipment investments needed to efficiently operate a successful collision repair shop. The class includes classroom discussion and hands-on activities to develop the skills necessary to successfully layout a body shop operation.

Prerequisites: AUT 105, AUT 106, AUT 184, AUT 190 and AUT 290

BIOLOGY (BIO)

BIO 110 Introductory Biology (4 CR)

Students will investigate the nature of science and apply principles of evolution, ecology, molecular and cellular biology to analyze scientific data and current biological issues. This course is designed for non-science majors. This course includes a laboratory component.

Prerequisites: ENG 085*, ENG 090* and MAT 020* or higher

BIO 131 General Biology (4 CR)

This course covers the chemical basis of life, cell structure and function, photosynthesis and cellular respiration, molecular and Mendelian genetics, environmental and evolutionary influences on organisms. This course is intended primarily for science and pre-professional science majors. It provides the foundation for upper level biology courses. Course includes a laboratory component.

Prerequisites: ENG 085*, ENG 090* and MAT 020* or higher

BIO 132 Human Biology (4 CR)

Students focus on the structure and function of the human body, the unity and diversity of life, the nature of scientific inquiry, and the principles and processes of evolution as well as contemporary issues that relate to biology. Course includes a laboratory component which focuses on human anatomy.

Prerequisite: ENG 085* and MAT 020* or higher

BIO 155 Human Anatomy & Physiology (5 CR)

A lecture and laboratory course in the anatomy and physiology of the human body. Study begins with introductions to basic terminology and cell structure, then extends to a survey of the organ systems. Laboratory study enhanced via microscopic study of tissues, the examination of preserved specimens and anatomic models, the use of interactive anatomy and physiology computer models, cat dissection and examination of plastinated human specimen(s). A strong biology background, Biology 132, Medical Terminology or Body Structure and Function is recommended.

Prerequisites: ENG 085*, MAT 020* or higher and CEM 131 or CEM 137 or CEM 141

BIO 158 Environmental Science (4 CR)

This course serves as a foundation for environmental science majors. It is also suitable for non-majors interested in environmental topics. Emphasis is placed on laboratory experience, environmental surveys, and class discussions to reinforce scientific principles. Environmental case studies are covered in detail. In laboratory, the students will learn how to analyze quantitative environmental data through application. This class has a laboratory component.

Prerequisites: ENG 085*, ENG 090* and MAT 020* or higher

BIO 220 Microbiology (4 CR)

Basic structure and function of microorganisms with special emphasis on recent advances in microbiology, pathogens, disease, control and immunity. Strong biology background recommended. Course includes a laboratory component.

Prerequisites: ENG 085* and MAT 020* or higher

BIO 231 General Botany (4 CR)

(FORMERLY BIO 151)

Emphasizes the development, anatomy, physiology and evolution of angiosperms. A survey of the plant kingdom with representative life cycles stresses relationships among plant groups. Course includes a laboratory component. **Prerequisite:** BIO 131

BIO 232 General Zoology (4 CR)

(FORMERLY BIO 152)

A comparative study of the anatomical and evolutionary relationships of the major animal phyla with emphasis on development, structure and function of vertebrate systems. Course includes a laboratory component. **Prerequisite:** BIO 131

BIO 253 Human Anatomy and Physiology I (4 CR)

This is the first course of a two-semester course sequence in which students study the anatomy and physiology of the human body. The course includes introductions to basic chemistry, biology and histology and extends to the survey of the integumentary, skeletal, muscular and nervous systems. This course includes a laboratory component in which students are responsible for performing dissections and making original observations on dissected material. The laboratory experience culminates with the use of a plastinated human specimen for observation. A strong background in biology and/or chemistry is highly recommended.

Prerequisites: ENG 085* and MAT 020* or higher

BIO 254 Human Anatomy and Physiology II (4 CR)

This is the second course of a two-semester course sequence in which students study the anatomy and physiology of the human body. The course includes the autonomic nervous system, sensory, motor, and integrative systems, special senses, endocrine system, cardiovascular systems, lymphatic system and immunity, respiratory systems, digestive system, metabolism and nutrition, urinary system and reproductive systems. This course includes a laboratory component in which students are responsible for performing dissections and making original observations on dissected material. The laboratory experience culminates with the use of a plastinated human specimen for observation. A strong background in biology and/or chemistry is highly recommended. **Prerequisite:** BIO 253

BUSINESS (BUA)**BUA 100 Contemporary Business (3 CR)**

(FORMERLY BUS 131)

As business speeds into the 21st century, new techniques, population shifts, and shrinking global barriers are altering the world at a frantic pace. Learn about the range of business careers available and the daily decisions, tasks and challenges that they face. Emphasis is placed upon developing a vocabulary of business terminology, teamwork, quality, social responsibility and cultural diversity. Understand how management, marketing, accounting, and human resource management work together to provide ethical competitive advantages for firms. This knowledge can help you enhance your career potential.

Prerequisites: ENG 085* and ENG 090*

BUA 110 Introduction to Wall Street (1 CR)

Designed to help existing or potential investors keep abreast of investment opportunities in today's changing financial world. Students are taught the mechanics of investing, how to analyze risk and return, and strategies to making sound investment decisions related to the stock market. The organization and function of the stock market, brokerage firms, and financial information on the Internet are examined.

Prerequisite: ENG 085*

BUA 111 Personal Finance (3 CR)

Provides a fundamental knowledge of financial concerns including financial services, stocks, bonds, budgeting, insurance, real estate, estate and tax planning, buying on credit, borrowing, saving, investing intelligently, and retirement. Analysis of personal objectives to financial planning will be discussed and put into practice.

Prerequisites: ENG 085* and ENG 090*

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

BUA 120 Human Relations in Business (3 CR)

Effective human relations are an indispensable tool in developing a successful professional presence in today's world. Topics include self-understanding, as well as the understanding of others, motivation, productivity, morale, conflict and change, stress, ethics, diversity, goal setting, the power of positive reinforcement, image building, emotional control, assertiveness, effective communication and different leadership styles. **Prerequisites:** ENG 085*and ENG 090*

BUA 121 Leadership (3 CR)

Both knowledge and behavior contribute to effective leadership skills needed to enhance the contribution of your team. Students explore topics including shared vision and values, team building, and decision making. You will study leadership theory in ways that encourage development of your leadership skills, including effective use of power and influence, motivational tools, personality assessment, team communication, role modeling, and performance appraisals.

Prerequisites: ENG 085*and ENG 090*

BUA 122 Successful Small Business (3 CR)

Do you have what it takes to own your own business? Discover that, as well as sources of financing, forms of legal ownership, niche marketing, and most importantly, how to avoid business failure.

Prerequisites: ENG 085*and ENG 090*

BUA 130 Customer Service (3 CR)

In the face of change, an uncertain economy, and intensive competition, the student will learn how to create an unexpected, highly evolving experience, to create customer loyalty and compelling word of mouth customers. The core element of service quality will be applied to both people-centered and technology-centered businesses, industries and organizations. The ultimate goal of this course is to help improve students' abilities to communicate effectively with internal and external customers. **Prerequisites:** ENG 085*and ENG 090*

BUA 131 Effective Selling (3 CR)

This class covers the basic fundamentals of selling, adaptable to any product or potential customer. Skills learned include satisfying customer needs, recognizing individual motives for purchase, sales psychology, business etiquette and developing a long-term consultative relationship with customers. Persuasive sales presentations are developed and delivered using the steps of the selling process.

Prerequisites: ENG 085*and ENG 090*

BUA 220 Principles of Management (3 CR)

This management course exposes students to the dynamics of the changing world. Topics such as management functions/processes, quality, leadership styles, power, global issues, and the challenges and opportunities of diversity are included. Emphasis is placed on ethics, decision making, effective communication, evaluating employees, motivational tools, organizational design, environmental scanning, supervising groups, controlling quality, productivity improvement, managing change and conflict, labor relations and time management.

Prerequisites: ENG 085*and ENG 090*

BUA 221 Human Resources Management (3 CR)

Create and maintain a desirable and productive work place by applying management skills with emphasis on improving performance and

career development. Topics include: employment law, recruitment and selection, placement techniques, interview methods, job analysis, staffing, training and development, performance appraisals, team building, benefit administration, government regulation, compensation systems, health and safety, and labor-management issues.

Prerequisites: ENG 085*and ENG 090*

BUA 230 Principles of Marketing (3 CR)

Students analyze the marketplace to identify customer wants and needs and develop effective strategies to satisfy them. Emphasis is placed on research, marketing environments, strategic planning, buyer behavior, evaluating key competitors, and the marketing functions of product or service planning, pricing, promotion and distribution.

Prerequisites: ENG 085*and ENG 090*

BUA 231 Advertising, Promotion & Public Relations (3 CR)

Students study the principles and practices of numerous promotional tools used in marketing communications. Topics include creation of advertising, media strategies, message appeals, plus the use of specialty advertising, sales promotion and public relations to help sell goods, services and ideas. **Prerequisites:** ENG 085*and ENG 090*

BUA 245 Internship/Externship (3 CR)

Students will have meaningful work experience with an appropriate company. The company and job must be approved by the supervising faculty member.

BUA 250 Business Law I (3 CR)

This course offers an introduction to law and the legal system, dispute resolution and courts, business ethics, torts, contracts, sales and leases of goods, and negotiable instruments.

Prerequisites: ENG 085*and ENG 090*

BUA 251 Business Law II (3 CR)

The student will learn the law governing the forms of business organization, including agency, partnerships, corporations, and real and personal property. **Prerequisite:** BUA 250

CLIMATE CONTROL TECHNOLOGY (CCT)
CCT 121 Introduction to HVAC (3 CR)

The course will introduce the student to a variety of professions and work opportunities in the HVAC field. Students will also review the tools of the trade, safety practices, a basic introduction to components of heating and air conditioning equipment, heat transfer, psychometrics and air quality. **Prerequisite:** ENG 085*

CCT 160 Fundamentals of Energy Efficiency (2 CR)

(SAME AS ALT 210)

This course will explore the fundamentals of designing and maintaining an energy efficient building to reduce a homeowner or business's cost of utilities. Students will learn techniques to identify wasted energy and the methods needed to modernize an energy inefficient home.

Prerequisites: ENG 085* and MAT 020* or higher

CCT 162 Energy Audit Techniques (3 CR)

(SAME AS ALT 215)

This course will explore the necessary knowledge and skills to conduct a building energy audit. The class will learn how to operate the latest

building science technology and equipment to identify heating, cooling, base load, and air leakage problems in a building.

Prerequisites: CCT 160 and MAT 031* or higher

CCT 165 Geothermal Energy & Systems (2 CR)
(*SAME AS ALT 260*)

This course will explore the basics of geothermal energy production, theory, and technology. Residential system installation, maintenance, and problem diagnosis will also be covered.

Prerequisites: CCT 121 and CCT 131 or ELT 120

CCT 167 Solar Thermal Energy & Systems (2 CR)
(*SAME AS ALT 265*)

This course will explore the basics of solar thermal energy technology and application. The class will also cover system installation, maintenance and problem diagnosis.

Prerequisites: CCT 121 and CCT 131 or ELT 120

CHEMISTRY (CEM)

CEM 131 Fundamentals of Chemistry (4 CR)

Fills requirement for some non-science majors. Provides background for CEM 141 for those with no recent high school chemistry. Fundamental principles of chemistry such as states of matter, simple atomic and molecular structure, and the periodic classification of elements. The study of water emphasizes the properties of solutions and acid-base relations. Course includes a laboratory component.

Prerequisites: ENG 085* and MAT 031* or higher

CEM 132 Fundamentals of Organic & Biological Chemistry (4 CR)

This course is an extension of material covered in CEM 131. It is required in many bachelor's degree programs, including nursing. Organic topics include the structure, physical properties and chemical behavior of the major classes of organic compounds. The structure, function, formation and reactions of carbohydrates, fats, proteins, and nucleic acids are covered, including enzymes, chemical messengers, and biochemical energy production. Course includes a laboratory component. **Prerequisite:** CEM 131 or CEM 137 or CEM 141

CEM 137 Chemistry of Life (4 CR)
(*FORMERLY CEM 121*)

This course is designed to meet the chemistry requirement for the ADN nursing program. It introduces the fundamental principles of general chemistry (structure of atoms and compounds, states, energy, equations, radioactivity, solutions and acids/bases), organic (structure and properties of major classes), and biochemistry (carbohydrates, proteins, lipids and metabolism). Course includes a laboratory component. Students who have not had a previous chemistry course are strongly advised to take CEM 131 prior to this course.

Prerequisites: ENG 085* and MAT 031* or higher

CEM 141 General Chemistry I (5 CR)

This course is required for most sciences, engineering, and pre-professional health majors. Students who are required to take organic chemistry for their major should enroll in CEM 141 during their first semester. Topics include atomic and molecular structure, periodicity, chemical bonding, states of matter, kinetic molecular theory and stoichiometry. Course includes a laboratory component.

Prerequisites: CIS 095*, ENG 085*, ENG 090* and MAT 131* or higher

CEM 142 General Chemistry II (5 CR)

This course is the second semester of general chemistry and extends material covered in CEM 141. Covered concepts include chemical thermodynamics, electrochemical reactions, reaction kinetics, acid-base theories, nuclear chemistry, and aqueous solutions with emphasis on equilibrium. Experiments include quantitative methods, stoichiometry, colorimetry, and gravimetric analysis. Course includes a laboratory component. **Prerequisite:** CEM 141

CEM 241 Organic Chemistry I (5 CR)

Comprehensive study of the major classes of organic compounds, their structures and reactions. The stereo-chemical properties and spectra (IR and NMR) of molecules and their mechanisms of reactions are stressed. The laboratory experiments demonstrate techniques used in organic reactions, syntheses illustrating types of reactions, analysis of major classes of compounds, and kinetic studies. **Prerequisite:** CEM 142

CEM 242 Organic Chemistry II (5 CR)

A continuation of CEM 241. Course includes a laboratory component. **Prerequisite:** CEM 241

COMPUTER INFORMATION SYSTEMS (CIS)

CIS 090 Computer Basics (2 CR)

This course introduces basic computer concepts and components. Topics include beginning computer concepts, identifying hardware, understanding software, using Windows® operating system, learning the keyboard, understanding the World Wide Web and conducting Internet searches, and introduction to e-mail communications. Students will apply concepts to real-life scenarios through active-learning strategies.

CIS 095 Computer Literacy (2 CR)

This course covers computer concepts, storage media, file management, word processing, online learning systems, e-mailing with attachments, and keyboarding. Students will apply concepts to real-life scenarios through active-learning strategies. **Prerequisites:** CIS 090*

CIS 101 Introduction to Computer Systems (3 CR)

Enhance computer knowledge. Course covers computer system concepts with an emphasis on several software applications. Typing ability necessary to be successful in this class.

Prerequisites: CIS 095*, ENG 085*, ENG 090* and MAT 020* or higher

CIS 103 Learning the Keyboard (1 CR)
(*FORMERLY CIS 010*)

Learn keyboard fundamentals for success in computer related programs. The students learn proper finger placement and key locations on a microcomputer.

CIS 104 Keyboard Speed/Accuracy (1 CR)
(*FORMERLY CIS 011*)

At course entry your keyboarding speed and accuracy is measured. A diagnosis of your specific keyboarding problem is made. Your skill improvement goals will be established and appropriate practice lessons selected. Periodic program check timings will be administered to measure your progress.

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

CIS 105 Microsoft® Windows® Workshop (1 CR)
(FORMERLY CIS 012)

This course provides a basic introduction to Microsoft® Windows®. The fundamentals of Microsoft Windows will be covered which include the start menu, desktop, launching an application program and using help and support. File and folder management, control panel and using the taskbar will be introduced.

CIS 106 Operating System: UNIX (1 CR)
(FORMERLY CIS 013)

This course is an overview of the UNIX operating system, commands, batch files and other basic topics. Typing ability is necessary to be successful in this course.

CIS 107 Microsoft® DOS® Workshop (1 CR)
(FORMERLY CIS 016)

Learn the IBM® (or equivalent) personal computer and its components. This course covers the operating systems background, Disk Operating System (DOS®) commands, tree structure, EDLIN, Microsoft® - DOS®.

CIS 110 Keyboarding/Document Processing (3 CR)

Students are introduced to the computer keyboard and are given instruction in proper typing technique. Student are also introduced to basic Microsoft® Word® operations to create business letters and envelopes, business and academic reports, tables and other business and academic related documents

CIS 111 Intermediate Keyboard/Typing (3 CR)

Learn production typing including tables, letters, manuscripts, reports, and business forms. Students learn on microcomputer using word processing software. Advanced word processing functions are included.
Prerequisite: CIS 110

CIS 112 Microsoft® Office® Professional Introduction (3 CR)
 Introduction and skill development in the four applications of Microsoft® Office® (Microsoft® Word®, Excel®, Access®, PowerPoint®), plus the full integration of all four packages.

CIS 114 Microsoft® Word Workshop-Windows® (1 CR)
(Formerly CIS 020)

Learn to process documents using Microsoft® Word®, including letters, memos and reports. Typing ability is necessary to be successful in this course.

CIS 115 Microsoft® Excel® Workshop-Windows® (1 CR)
(Formerly CIS 021)

Create business applications using the Excel® spreadsheet within the Windows® graphical user interface (GUI). This course covers basic commands, cell ranges, formulas, and mathematical, financial and statistical functions.

CIS 116 Microsoft® Access® Workshop - Windows® (1 CR)
(FORMERLY CIS 022)

Learn how to create, query, maintain present data as reports and forms, include graphs, tables and clip art in printouts, and use macros to create application systems for databases.

CIS 117 Microsoft® Outlook® Workshop (1 CR)
(FORMERLY CIS 024)

Learn to use Outlook® components to create and use the calendar feature to schedule meetings and multiple day events, establish a "contacts" database, keep journals, notes and use the task manager for prioritizing jobs. This is an optional component of the Microsoft® Office® User Specialist Expert certification tests. Typing ability necessary to be successful in this course.

CIS 118 Microsoft® Publisher® Windows® (2 CR)

This course presents design techniques and the proper procedures necessary to create electronic documents in Microsoft® Publisher®. Students explore the use of Publisher's® extensive design templates to create documents such as flyers, brochures and newsletters. Publications are also created from scratch. An emphasis is placed on good design principles and the creative aspects of desktop publishing.
Prerequisites: ENG 085* and ENG 090*

CIS 119 Microsoft® PowerPoint® - Windows® (2 CR)

Students will learn how to create electronic presentations using design templates, slide layouts, the outline tab, clip art, from other programs such as Microsoft® Word® and how to enhance slideshows with visual elements in presentation formats. Student will also learn how to create presentations for the web, self-running presentations, presentations containing interactive documents and how to collaborate work groups. Keyboarding skills are essential.
Prerequisites: ENG 085* and ENG 090*

CIS 120 Microsoft® Word® Comprehensive - Windows® (3 CR)

Produce, store and revise letters, memos, tables and reports using Microsoft® Word®. Headers, footers, mail merge, document assembly, grammar and spell checker, thesaurus, and outlining are covered. Keyboarding skills are essential.
Prerequisites: ENG 085* and ENG 090*

CIS 121 Microsoft® Excel® Comprehensive - Windows® (3 CR)

Learn Excel® components: charts, creating workbooks, using drawing tools, formatting and auditing worksheets, functions, Internet and intranet documents, modifying and printing workbooks, ranges, database queries, importing and exporting data, macros, working with multiple workbooks, working with existing and creating new templates, and advanced workgroup functions. Keyboarding skills are essential.
Prerequisites: ENG 085,* ENG 090* and MAT 020* or higher

CIS 122 Microsoft® Access® Comprehensive - Windows® (3 CR)

Planning, creating and displaying databases, sorting and report preparation, data entry screens, data validation and selection, and multiple file operations. Keyboarding skills are essential.
Prerequisites: ENG 085,* ENG 090* and MAT 020* or higher

CIS 125 Microsoft® Expression® Web (1 CR)

This course will show how to create web sites with the Microsoft® Expression® Web program. Topics will include how to create a web site, managing and publishing a web site, and how to use views, table and frames. Previous keyboarding experience necessary to be successful in this course.

CIS 128 Typography & Layout (3 CR)

Learn principles of type identification, selection and use in the professional rendering of comprehensive layouts. Utilization of tools, materials, and techniques of rendering emphasized.

CIS 132 Graphic Illustration (Adobe® Illustrator®) (3 CR)

Learn how to create professional looking illustrations using Adobe® Illustrator®. This course introduces student to techniques used by professional designers and illustrators.

CIS 134 Graphic Imaging (Adobe® PhotoShop®) (3 CR)

Learn the intricacies of scanning and editing images for producing practical and expressive images on a computer using Adobe® PhotoShop® software.

CIS 135 Open Source Web Design (1 CR)

This course will explore several open source web design software programs available, their risks and advantages in the web development arena. Students will create an eCommerce web-site, learn to manage the site using open source utilities available and discover strategies for security of website information and eCommerce transactions.

CIS 136 Integrated Design I (Adobe® InDesign®) (3 CR)

Learn the basics of desktop publishing using Adobe® InDesign®. Students use computers and laser printers to create professional-looking publications that incorporate illustrations and bitmap graphics.

CIS 137 Digital Photography I (3 CR)

(SAME AS ART 137)

This course provides the necessary information and assistance in using a digital camera to capture, edit and manipulate top quality images for both the Internet and printing. Includes techniques on layout, composition, message and color. Students supply their own camera.

CIS 143 HTML (2 CR)

Create web pages using HTML. Students will learn techniques and strategies to build and promote successful web pages. Features such as columns, frames, image maps and META tags will be covered in this course.

CIS 147 Web Page Design I (Dreamweaver®) (3 CR)

(Formerly CIS 045)

This course covers the fundamental concepts of web page design using Adobe® Dreamweaver®. This course will instruct students in all the basic functions of Adobe® Dreamweaver® in regards to understanding how to get a web site up and running.

CIS 158 Programming Logic (3 CR)

Students explore the development of the logic and theory for writing business programs that control the operation of a computer. Course covers the development of both structured design and object-oriented design. Topics include control structures, arrays, data validation, testing and debugging. **Prerequisite:** CIS 101

CIS 160 Programming in Visual Basic.NET (3 CR)

This course introduces students to principles and concepts of programming in a Windows® environment using the Visual Basic.NET programming language. Students learn to develop business applications by designing and creating a user interface and writing the necessary procedures using both structured and object oriented design. Topics covered include objects, variables, menus, arrays, file input/output, OLE methods, and debugging. Recommended computer programming majors take CIS 158 prior to this course.

CIS 165 JAVA Programming (3 CR)

Students use procedural and object-oriented programming capabilities to design, develop, and test computer programs. Topics covered include control structures, methods, object-oriented programming, classes, applets, and user interfaces.

CIS 170 Programming in C++ (3 CR)

(SAME AS CPS 177)

Students study digital computing systems and how they are used to solve problems. Students use procedural and object-oriented programming capabilities to design, develop, and test computer programs. Topics covered include program development, functions, control structures, text file operations, classes, recursion, arrays and pointers.

CIS 171 3D Modeling I (4 CR)

Students will begin learning the basic low polygon modeling techniques in a high-end animation program called MAYA. Special emphasis on character design and environmental modeling will be the key to this class along with a flow into topics of human topology. This course is perfect for an artist or a technical-minded individual.

CIS 172 Lighting and Texturing (4 CR)

Students will learn how to set up 3D environments, dynamic and static lighting and be able to use mappings to manipulate that light on a 3D surface. Material and surface terminology will also be taught. Students will be introduced to 2D matte painting techniques for environmental backdrops. **Prerequisite:** CIS 171

CIS 173 Animation I (4 CR)

This core class of animation introduces students to moving and animation 3D characters. Using industry standard software, students will translate muscle and bone structure. Various character rigs will be introduced so that the 3D characters will move in both forward and inverse kinematics. **Prerequisite:** CIS 171

CIS 174 PC Repair/A+ Hardware Component (3 CR)

Course covers basic computer theory, logic, technological evolution, fundamental PC components, I/O peripheral identification, implementation, functionality, and printer fundamentals/types/diagnostics/troubleshooting/basic repair.

CIS 175 PC Repair/A+ Software Component (3 CR)

Students gain familiarization with basic DOS functionality and manipulation for diagnostics, troubleshooting and repair with WIN O/S. Installation, configuration, troubleshooting, diagnostics, upgrade familiarity with necessary MS product for A+ certification.

Prerequisite: CIS 174

CIS 176 A+ Certification Exam Preparation (1 CR)

Focus on A+ core exam module component essentials/fundamentals, includes real-time test environment and materials. **Prerequisite:** CIS 175

CIS 179 Network+ Certification Exam Preparation (1 CR)

Focus on Network+ core exam module component essentials/fundamentals to include real-time test environment and materials.

Prerequisite: CNS 101

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

CIS 201 Advanced Information Technologies (3 CR) (SAME AS ECM 201)

This course enhances electronic communication skills and computer concepts essential to using current advanced information technologies. Topics include web collaboration, web conferencing, web 2.0 applications, social media, mobile computing, file conversions and cross-platform compatibility.
Prerequisites: ENG 085*, ENG 090* and CIS 101*

CIS 203 Introduction to Probability & Statistics (4 CR) (SAME AS MAT 133 AND PSY 144)

This course is an introduction to experimental design, data representation, basic descriptive statistics, probability theorems, frequency distributions and functions, binomial and normal probability distributions and functions, probability density functions, hypothesis testing, statistical inference, Chi-square analysis, linear regression, correlation and application of the above in making informed, data driven decisions in real-world contests. Both graphing calculators and computer-based statistical software (Microsoft® Excel®) will be used. If the prerequisite is more than two years old, then the mathematics department recommends the course placement exam be taken or the prerequisite be retaken to ensure the success of the student.
Prerequisite: MAT 033* or MAT 131* or higher

CIS 210 Office Administration Systems (4 CR)

Develop and integrate administrative support skills in communication, information technologies, administrative procedures and problem solving. Topics include: records management, information/communication systems, including electronic, space management and ergonomics, quality and productivity improvement techniques, meeting/travel planning, records preparation/presentation and employment skills. Keyboarding skills are essential. **Prerequisite:** CIS 101

CIS 230 Practicum in Printing (4 CR)

Students receive hands-on introduction on how screen and offset printing works. The class will be project-oriented. **Prerequisite:** CIS 101

CIS 232 Integrated Design II (Adobe® InDesign®) (3 CR)

Students will design creative publications via Adobe® InDesign® while integrating designs from Adobe® PhotoShop® and Illustrator®. Topics in this class include: page layouts, styles, layers, color separation and interactive PDFs. **Prerequisites:** CIS 128 and CIS 132 or CIS 136

CIS 234 Graphic Technology Applications (3 CR)

Students prepare for career opportunities by defining areas of employment and identifying prospective employers in the graphic design profession. Students also create a professional portfolio to be used for employment interview purposes.
Prerequisites: CIS 128 and CIS 132

CIS 237 Digital Photography II (3 CR) (SAME AS ART 237)

This course provides the opportunity to refine and extend the skills of photographic seeing. Personal skills in digital photography will be used to explore a complete body of work. Students will be using Photoshop® CS5 to edit and explore their creative outlets further. Students' individual personal goals will be set and executed during the semester.
Prerequisite: Art 137 or CIS 137

CIS 243 Web Animation (3 CR)

Design fully interactive sites using Adobe® Flash®. Students will draw vector graphics, use key tools to produce animations, and create an activity that drives dynamic web sites. Students will also produce multimedia presentations. **Prerequisites:** CIS 101 and CIS 143

CIS 244 Web Programming (3 CR)

Students will learn to design and maintain interactive and dynamic web applications within a server-based scripting environment.
Prerequisites: CIS 101 and CIS 143

CIS 245 Internship/Externship (3 CR)

Cooperative work experience conducted through conferences. The position must be obtained by the student and approved by the department before registration is permitted.
Prerequisite: Instructor's consent required.

CIS 246 Web Integration with Databases (3 CR)

Students will experience different approaches for creating web pages that interact with databases. This course will define how web sites are being used to support electronic commerce applications.
Prerequisites: CIS 101, CIS 122 and CIS 244

CIS 247 Web Page Design II (Dreamweaver®) (3 CR) (FORMERLY CIS 145)

This course covers advanced concepts of Web page design using Dreamweaver®. This course will teach students advanced design techniques to add efficiency, interactivity, and visual interest to their Internet Web site. **Prerequisites:** CIS 147

CIS 260 Advanced Visual Basic.NET (3 CR)

Further study of Visual Basic.NET. Students learn the advanced features of Visual Basic including writing relational database programs, web services, data structures and user controls. **Prerequisite:** CIS 160

CIS 270 Advanced C++ Programming (3 CR)

Hands-on programming course using the Visual C++ language. Object-oriented programming concepts, input handling, the Microsoft® Foundation Class, and using the Windows® programming interface with Visual C++ tools are some of the topics discussed. **Prerequisite:** CIS 170

CIS 271 3D Modeling II (4 CR)

This course builds from the previous 3D modeling course. Students will design characters with even greater detail and polygon levels that reach over a million. Topics of human anatomy, muscle structure and topology will be introduced. **Prerequisite:** CIS 171

CIS 272 Computer Gaming Fundamentals (3 CR)

Game engine fundamental workflows will be introduced from a design perspective. Using a pre-made game engine, students will import static and animated props into an environment to create maps and levels.
Prerequisite: CIS 172, CIS 173 and CIS 271

CIS 273 Systems Concepts and Design (3 CR)

Students will design a system, prepare the related documentation and required programs, using an existing business as a model. Course covers flow charting a system, defining problems, and preparing new forms. Students determine a desirable file structure.

CIS 290 Systems Administration SQL Server (3 CR)

This course provides students with the knowledge and skills required to install, configure, administer, set up security, and troubleshoot Microsoft® SQL server. **Prerequisite:** CIS 282

COMPUTER AIDED DRAFTING (CAD)**CAD 151 AutoCad I (3 CR)**

Course on the applications in which the phases of computer graphics are involved. A general introduction for drafting applications will be presented. Recommended: Windows® and blueprint reading.

Prerequisite: ENG 085*

COMMUNICATIONS (COM)**COM 231 Communication Fundamentals (3 CR)**

(FORMERLY SPH 231)

Students will learn the basic principles of speech communication including speech development and delivery, interpersonal message, non-verbal messages, and small group dynamics. The course is designed to prepare students to be effective communicators in a diverse global society. Student speeches will be evaluated for effectiveness.

Prerequisites: ENG 085* and ENG 090*

COM 233 Argumentation & Debate (3 CR)

Students are provided theory and practice in debate, emphasizing principles of research, logical reasoning, and oral presentation of reasoned discourse in group situations. **Prerequisite:** COM 231

COM 234 Public Address (3 CR)

(FORMERLY SPH 234)

Explore the role of the speaker, audience, occasion and the message. Offers opportunities for participation in all general purposes of speech plus some special occasion speeches. Delivery methods are impromptu, extemporaneous, manuscript and memorized. Outlining, organization, delivery technique and other theories of public address stressed.

Prerequisites: ENG 085* and ENG 090*

COM 240 Interpersonal Communication (3 CR)

(FORMERLY SPH 240)

Students will learn to improve communication in one-on-one and small group situations. In this course, students will examine basic verbal and non-verbal elements affecting communication between individuals in family, peer group and work contexts. Specific units of discussion include intrapersonal perspective, conflict resolution, self-disclosure, message generation, intercultural messages and non-verbal communication. **Prerequisites:** ENG 085* and ENG 090*

COMPUTER NETWORKING AND SECURITY (CNS)**CNS 101 Network Fundamentals/Network+ (4 CR)**

This course introduces students to fundamental networking concepts and technologies. It is the first of four courses that help prepare students for the Cisco CCNA certification exam. The course materials will assist in developing the skills necessary to plan and implement small networks across a range of applications. It also helps prepare the student for the CompTIA Network+ certification exam.

CNS 102 Routing Protocols & Concepts (3 CR)

This course is the second of four courses that help prepare students for the Cisco CCNA certification exam. It covers the routing concepts introduced in CNS 101. The goal is to develop an understanding of how a router learns about remote networks and determines the best path to

those networks. This course includes both static routing and dynamic routing protocols. **Prerequisite:** CNS 101

CNS 103 LAN Switching & Wireless (3 CR)

This course is the third of four courses that help prepare students for the Cisco CCNA certification exam. It covers the switching and wireless concepts introduced in CNS 101 in more depth. The goal is to develop an understanding of how switches are interconnected and configured to provide network access to LAN users. This course also teaches how to integrate wireless devices into a LAN. **Prerequisite:** CNS 101

CNS 104 Accessing the WAN (3 CR)

This course is the fourth of four courses that help prepare students for the Cisco CCNA certification exam. It covers the WAN concepts introduced in the CNS 101 in more depth. The goal is to develop an understanding of various WAN technologies to connect small to medium business networks. It focuses on WAN technologies including PPP, Frame Relay and broadband links. **Prerequisite:** CNS 101

CNS 121 Microsoft® Networking Client I (3 CR)

This course will help students gain the knowledge and skills required to configure Windows® Vista® for optimal performance on the desktop. This course focuses on installing the client software, migrating from previous versions of the Microsoft® Windows® client, and configuring systems settings, security features, network connectivity, communications and media applications, and mobile devices.

CNS 122 Microsoft® Networking Client II (3 CR)

This course covers how Windows® Vista® is used in a medium to large enterprise. It focuses on the various technologies used to deploy and manage the operating system, including Windows® Image Manager, Windows PE, Group Policy, User Account Control and Encrypted File System. **Prerequisite:** CNS 121

CNS 123 Microsoft® Networking Server I (3 CR)

This course covers installing Windows® Server 2008, configuring remote access, Network Access Protection (NAP), network authentication, IPv4 and IPv6 addressing and Domain Name System (DNS) replication: capturing and deploying Microsoft® Windows® Deployment Services images; creating virtual machines; and installing server core.

CNS 124 Microsoft® Networking Server II (3 CR)

This course covers planning Windows® Server 2008 roles; maintain server security; planning data storage, network load balancing, and server backups; managing software deployment and versions; monitoring IPv6, server performance and capacity, and AD replication; scheduling server deployments; and designing a rollback contingency plan. **Prerequisite:** CNS 123

CNS 125 Microsoft® Directory Services (3 CR)

This course covers configuring, managing and supporting user and computer accounts, groups, Domain Name System zones and clients settings; group policy objects; the new Active Directory® Lightweight Directory Service and Active Directory Rights Management Service; backup and recovery; and communication security.

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

CNS 131 Linux Administration I (3 CR)

This course introduces Linux to experienced computer users and to those with a basic knowledge of computers. Students will install and configure a distribution of Linux. They will learn to use a command line shell and a GUI to manage the file system, create user and group accounts, and manage file permissions. This course will cover how to set up a Linux system on a TCP/IP network, bash shell concepts, printing and installing programs Linux.

CNS 132 Linux Administration II (3 CR)

In this course, the student will learn how to implement, configure and troubleshoot Linux, particularly as a network server. The student will configure Linux to provide DNS, DHCP, as a firewall and basic routing functions. The student will set up and secure the Apache web service and set up Linux to provide e-mail service. They will also set up Linux to interoperate within a Microsoft® Active Directory environment.

Prerequisite: CNS 131

CNS 141 Wireless Networking (3 CR)

This course introduces the basic concepts of wireless networking. Students will work with various types of equipment needed to set up and maintain local wireless networks of various sizes. Considerable emphasis will be placed on how to secure access to and the information that travels across wireless networks. **Prerequisite:** CNS 101

CNS 201 Network Security/Security+ (3 CR)

The student will be introduced to computer network vulnerabilities and threats and how to safeguard computer networks from those vulnerabilities and threats. This course will expose the student to network security planning, network security technology, network security organization and the legal and ethical issues associated with network security. In this course, students will learn the skills necessary for Security+ certification. **Prerequisite:** CNS 102

CNS 211 Scalable Cisco Networks (3 CR)

In this course, students will learn how to create an efficient and expandable enterprise network. Students will also learn how to install, configure, monitor, and troubleshoot network infrastructure equipment. Topics include configuration of EIGRP, OSPF, IS-IS, and BGP routing protocols, and how to manipulate and optimize routing updates between these protocols. Other topics include multicast routing, IPv6, and DHCP configuration. **Prerequisite:** CNS 104

CNS 212 Secure Converged WANs (3 CR)

Students are introduced to secure enterprise-class network services for teleworkers and branch sites. Students will learn how to secure and expand the reach of an enterprise network with a focus on VPN configuration and securing network access. Topics include teleworker configuration and access, frame-mode MPLS, site-to-site IPSEC VPN, Cisco EZVPN, strategies used to mitigate network attacks, Cisco device hardening, and IOS firewall features. **Prerequisite:** CNS 104

CNS 213 Multilayer Switch Networks (3 CR)

This course covers the deployment of state-of-the-art campus LANs. The primary focus is on the selection and implementation of the appropriate Cisco IOS services to build reliable, scalable, multilayer-switched LANs. Focus areas of the course include VLANs, Spanning Tree Protocol, wireless client access, minimizing service loss, and minimizing data theft in a campus network. **Prerequisite:** CNS 104

CNS 214 Optimizing Converged Networks (3 CR)

Optimizing Converged Networks introduces students to effective QoS techniques for optimization in converged networks with voice, wireless, and security applications. Topics include implementing a VoIP network, specific mechanisms for implementing the DiffServ QoS model, AutoQoS, wireless security, and basic wireless management.

Prerequisite: CNS 104

CNS 221 Securing Microsoft® Networks (3 CR)

This course will cover how to protect your Windows-based clients, server roles, networks, and Internet services. Students learn how to plan and implement comprehensive security with special emphasis on new Windows® security tools, security objects, security services, user authentication and access control, network security, application security, Windows® Firewall, Active Directory® security, group policy, auditing and patch management. **Prerequisite:** CNS 125

CNS 231 Firewall Intrusion Detection (3 CR)

This course will cover how to install, configure and manage network and host-based firewalls. It will cover how to set up and configure popular network-based firewalls and host-based firewalls with various operating systems. It will instruct the students how to set up both network- and host- based intrusion detection systems to determine if and when a network or system has been breached. **Prerequisite:** CNS 201

CNS 232 Computer Forensics I (3 CR)

This course deals with the preservation, identification, extraction, documentation and interpretation of computer data. Topics covered include evidence handling, chain of custody, collection, preservation, identification and recovery of computer data. **Prerequisite:** CNS 201

CNS 234 Ethical Hacking (3 CR)

This course introduces the concept of ethical hacking and how to perform penetration tests of computer networks. In hands-on labs an emphasis will be placed on how to use tools to discover weaknesses in computer networks and how to improve the defenses of those networks against malicious attacks. **Prerequisite:** CNS 201

COMPUTER SCIENCE (CPS)
CPS 177 Programming in C++ (3 CR)

(SAME AS CIS 170)

Students study digital computing systems and how they are used to solve problems. Students use procedural and object-oriented programming capabilities to design, develop and test computer programs. Topics covered include program development, functions, control structures, text file operations, classes, recursion, arrays and pointers.

CPS 217 Computer Science II (3 CR)

This course is a continuation of CPS 177. Students are introduced to major data structures used for data storage and processing. These include arrays, lists, stacks, queries and trees. Algorithms for searching, sorting and updating structures are developed and analyzed. **Prerequisite:** CPS 177

CRIMINAL JUSTICE (CRJ)
CRJ 101 Criminal Law (3 CR)

This course covers both substantive and procedural law at local, state and federal levels. Special emphasis given to the Michigan Penal Code and landmark court decisions. **Prerequisite:** ENG 085*

CRJ 102 Criminal Investigation (3 CR)

This course covers the fundamentals of criminal investigation, theory and practice, from crime scene to courtroom, with emphasis on techniques appropriate to specific crimes. **Prerequisite:** ENG 085*

CRJ 104 Criminal Justice Psychology (3 CR)

This course is an overview of criminal behavior from a psych-social perspective. Contemporary research, theory and practice concerning the psychology of crime are reviewed. **Prerequisite:** ENG 085*

CRJ 108 Criminal Justice Fieldwork-Security (3 CR)

This course is an introduction to security internship at Jackson Community College. Course includes, but is not limited to, training in AED/CPR, chemical irritants, courtroom demeanor and testimony. Also includes a minimum of 14 hours per week of job training. Instructor permission is required for this course.

CRJ 109 Advanced Security Training (2 CR)

This course provides students with advanced security training as a safety security officer at Jackson Community College. Instructor permission is required for this course. **Prerequisite:** CRJ 108

CRJ 111 Introduction to Criminal Justice (3 CR)

This course covers the history, evolution and philosophy of the American criminal justice system. Emphasis on the interrelationship of system components: police, attorneys, courts and corrections. **Prerequisites:** ENG 085* and ENG 090*

CRJ 112 Crime & Delinquency (3 CR)

Introduction to deviant behavior and current criminological theories with emphasis on synthesis and police applications to juveniles; diversion and status offenses considered. **Prerequisites:** ENG 085* and ENG 090*

CRJ 113 Introduction to Criminalistics (3 CR)

Scientific methods applied to the collection, identification, preservation and transportation of physical evidence and taught in a laboratory setting. **Prerequisite:** ENG 085*

CRJ 114 Police Administration & Operations (3 CR)

Administration and operation of a police department including line/staff activities are explored. **Prerequisites:** ENG 085* and ENG 090*

CRJ 116 Fire Investigation I (3 CR)

Reviews arson and fire laws and their application. Investigative methods unique to the fire scene will also be covered. Particular value to criminal justice students and fire fighting personnel. **Prerequisite:** ENG 085*

CRJ 117 Criminology (3 CR)

(SAME AS SOC 117)

Provides an understanding of the cultural nature, origin and development of criminal behavior with attention given to the psychological and sociological factors involved.

Prerequisites: ENG 085* and ENG 090*

CRJ 119 Client Growth & Development (3 CR)

A corrections-oriented course involving the study of normal versus criminal behavior, human development and criminal pattern. Also involves the study of specific problems including substance abuse, sexual and medical problems and disorders.

Prerequisites: ENG 085* and ENG 090*

CRJ 120 Human Relations for Corrections (3 CR)

A study of the meaning and function of culture and the social and psychological implications of discrimination. Also involves a survey

of minorities in Michigan, attitude formation and professional responsiveness. **Prerequisites:** ENG 085* and ENG 090*

CRJ 121 Introduction to Corrections (3 CR)

A survey of the American corrections system as a component of the criminal justice system. **Prerequisites:** ENG 085* and ENG 090*

CRJ 124 Institution Populations (3 CR)

The nature, composition and dynamics of the prison population as a separate society are central topics in this course.

Prerequisites: ENG 085* and ENG 090*

CRJ 125 Parole & Probation (3 CR)

Pre- and post-institutional treatment and alternatives are presented. Consideration also given to diversion and community-based correctional programs. **Prerequisites:** ENG 085* and ENG 090*

CRJ 127 Corrections Law (3 CR)

Deals with the law as it applies to the correctional system. Applicable court cases and legislation will be considered. Topics will include sentencing, prisoners' rights and responsibilities; loss of rights, prisoner remedies; community corrections and restoration of rights of offenders. **Prerequisites:** ENG 085* and ENG 090*

CRJ 203 Field Studies (3 CR)

(SAME AS SOC 203)

This course provides an opportunity for students to work for one semester in a law enforcement or corrections agency. Only open to students who have reached sophomore level (26 or more credit hours), minimum 2.5 GPA and permission of the instructor.

CULINARY ARTS (CUL)**CUL 100 Introduction to Hospitality (3 CR)**

Students are exposed to the social, economic and environmental context within which the hospitality industry operates. Student will study the structure, nature and operating characteristics of the different sectors of the hospitality industry including food service, lodging and tourism. Students are also exposed to the various functions of management, their interrelationships with marketing, finance and human resource management. Students study the role of managers in the hospitality industry and highlight their principal responsibilities.

Prerequisites: ENG 085* and ENG 090*

CUL 111 Food Handling and Alcohol Service (3 CR)

Students study food safety risks encountered in the food service industry to ensure that food is safely served. Students learn about the microorganisms that cause food borne illness and other contaminants that can make food hazardous. Concepts and skills are presented to reduce the risk of foodborne illness and prepare the student to pass the National Restaurant Association ServSafe Food Protection Manager Certification Examination. ServSafe Alcohol training will provide students the understanding of alcohol law and their responsibility, how to recognize and prevent intoxication, how to properly check identification, and handling difficult situations related to alcohol use. Concepts and skills learned will prepare the student to pass the national Restaurant Associate on ServSafe Alcohol Certification Examination.

Prerequisite: ENG 085*

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

CUL 114 Baking (3 CR)

Students are introduced to basic theory, practices and production techniques required to produce quality baked good items such as yeast raised breads, cookies, pies and cakes. Emphasis is placed on time management, safe food handling, storage and proper utilization of ingredients and equipment. Students are required to demonstrate managerial and organizational skills.

Prerequisites: CUL 111, ENG 085* and MAT 020*or higher

CUL 115 Baking & Pastry (3 CR)

In this course students will produce classic and modern cakes, cookies, custards, chocolates, candies, hot and frozen desserts, classical plated desserts and centerpieces using several different mediums. Emphasis is on organization, sanitation, speed and presentation.

Prerequisites: CUL 114, ENG 085* and MAT 020*or higher

CUL 118 Nutrition for Food Service and Culinary (3 CR)

This course studies nutrients including functions, food sources, digestion, absorption and metabolism with application to normal and preventive nutrition needs, including nutrient intake analysis, energy expenditure evaluation and diet planning. Students recall and classify nutrient categories, their functions, digestion, absorption and metabolism; recommendations and nutrient categories; conduct personalized computerized nutrient analysis and calculate personalized energy needs; and plan a personalized diet according to the principles of the Exchange List System and the USDA Food Pyramid.

Prerequisites: CUL 100, CUL 111, ENG 085* and MAT 020*or higher

CUL 120 Culinary Skills (3 CR)

Students are introduced to the principles of quantity food production, fabricating techniques, recipe conversions, costing, product identification and classical culinary skills. Students learn to operate and care for equipment, along with maintaining a safe and sanitary environment.

Prerequisites: CUL 111, ENG 085*, ENG 090* and MAT 020*or higher

CUL 121 Introduction to Food Production Techniques (3 CR)

This course will serve as an introduction to the basic concepts, techniques, terminology and methods involved in the preparation, presentation and portioning of various food and menu items. Students will rotate through the stations of a commercial kitchen gaining experience in knife skills, food production, food preparation, recipe understanding and the overall operation of a restaurant kitchen. This course will focus on à la carte, cooked to order foods as well as some quantity food production. Emphasis will be placed on the cookery process, food desserts, vegetables, salads, starches and entree preparations and also developing the proper techniques of plating and preparing desserts, vegetables, salads, starches and entree preparations.

Prerequisites: CUL 111, CUL 120, ENG 085* and MAT 020*or higher

CUL 150 Food Service Management (3 CR)

Students are introduced to trends, organization and operations within the hospitality industry including tourism, lodging, restaurant, recreation and leisure, gaming, managed services, meeting/convention/exhibition, cruise, spa and resort segments.

Prerequisites: ENG 085*, ENG 090* and MAT 020*or higher

CUL 175 International Cuisine (3 CR)

The development of world cuisine is a direct result of topography, location, climate and cultural influence. This hands-on course offers the student practical exposure and historical insight to the varied world cuisines of Europe, Asia and the Mediterranean, working from the roots of these civilizations to present day. As the particular aspects of regional ingredients and traditional cooking techniques are discovered, a rich source of inspiration is cultivated in future culinary professionals.

Prerequisites: CUL 114, CUL 121, ENG 085*, ENG 090* and MAT 020*or higher

CUL 210 Garde Manger (3 CR)

Students study garde manger, both as a style of cuisine and as a tool to enhance the efficiency and value of cookery. Emphasizing techniques of cooking over specific recipes, it covers a broad range of dishes from cold sauces to plated appetizers to hors d'oeuvres. Focus on creativity, the principles of plate presentation, buffet design, food art and sculpted centerpieces. Designed for the contemporary kitchen, it prepares students for a variety of situations, from à la carte menus to theme-based events, buffets and brunches.

Prerequisites: CUL 114, CUL 121, ENG 085*, ENG 090* and MAT 020*or higher

CUL 224 Food and Beverage Cost Control (3 CR)

Students are introduced to concepts of food, beverage and labor cost control systems to students preparing for careers in the food, beverage and hospitality industry. Students analyze costs related to food and beverage, labor and supplies used in the industry as well as exercises that are related to purchasing and receiving.

Prerequisites: ENG 085* and MAT 020*or higher

CUL 227 Contemporary Cuisine (3 CR)

This course emphasizes supervision and management concepts, knowledge and skills of contemporary cuisine including menu selection, layout and design, on/off premise catering, entrepreneurship, small business management and nutrition. Laboratory demonstrations and student experimentation parallel class work.

Prerequisites: CUL 115, CUL 121, CUL 210, CUL 231, ENG 085*, ENG 090* and MAT 020*or higher

CUL 228 Food Service Layout and Design (3 CR)

Students are introduced to the design and layout of food service facilities. Course covers preliminary planning, the roles and responsibilities of members of the project team, the design sequence, principles of design, space analysis, equipment layout, fabricated and manufactured equipment and engineering and architecture for food service facilities. **Prerequisites:** CUL 120, CUL 150, ENG 085*, ENG 090* and MAT 020* or higher

CUL 230 Quantity Food Production (3 CR)

Students advance their culinary skills, creativity in food presentation, time management, planning and composing catering functions, as well as participation in Post Secondary Skill Competitions. Emphasis will be placed on innovative and practical thinking to cope with last minute and short notice events. At the end of this course a student could acquire the skills and knowledge to enter a culinary ACF approved food show and take an active role in Skills USA competitions.

Prerequisites: CUL 114, CUL 121, ENG 085*, ENG 090* and MAT 020*or higher

CUL 231 À la Carte Kitchen (3 CR)

The focus is on modern, contemporary and classical cuisine for service in restaurants. Correct applications and fundamentals of culinary skills, quantity food production and organization, mise en place, cooking methods, improved knife skills, plate presentation and the use of standardized recipes will be stressed. Students prepare à la carte salads, dressings, marinades, vegetables, starches and entrees. Students hone their skills to be both creative in preparation and food presentation approaches. **Prerequisites:** CUL 230, ENG 085*, ENG 090* and MAT 020* or higher

CUL 250 Principles of Beverage Service (3 CR)

This course focuses on the study of the beverage service in the hospitality industry which includes spirits, wines, beers and non-alcoholic beverages. Topics include purchasing, resource control, legislation, marketing, physical plant requirements, staffing, service and the selection of wines to enhance foods. Students complete the ServSafe Alcohol training and national examination. **Prerequisites:** CUL 111, ENG 085*, ENG 090* and MAT 020* or higher

DANCE (DAN)**DAN 121 Jazz Techniques (3 CR)**
(SAME AS HPF 221)

Beginner to intermediate level class exploring contemporary jazz and modern dance techniques. Includes an introduction to the fundamentals of choreography, exploration of the elements of dance, and history of dance.

DAN 122 Jazz Techniques II (3 CR)

An advanced approach to jazz dance with emphasis upon combining jazz pieces into complete choreographies. **Prerequisite:** DAN 121 or HPF 221

DIAGNOSTIC MEDICAL SONOGRAPHY (DMS)**DMS 100 Introduction to Diagnostic Imaging (3 CR)**

In this course students are introduced to the radiologic sciences. Modalities discussed include X-rays, nuclear medicine, ultrasound, computerized axial tomography (CAT), magnetic resonance imaging (MRI) and photon emission tomography (PET). Students learn indications for a variety of diagnostic studies, how they are evaluated and interpreted, correlations of multiple studies, and how to prepare the patient for the study.

DMS 101 Sonographic Orientation (3 CR)

This course prepares sonography students for their clinical work-site experiences. Students will explore interpersonal relationship skills, ethical decision making, and a review of clinical technical skills as they relate to the on-site work experience. Students will learn basic cross-sectional anatomy as related to beginning sonographic scanning of the abdomen. **Prerequisite:** Acceptance into DMS program

DMS 104 Introduction to Sonographic Instrumentation (3 CR)

In this course students will learn the history and basic principles of static and real-time ultrasound machines. The instrumentation of A-mode and its conversion into the real time B-mode scanners will be explored. Laboratory assignments reinforce learning activities. **Prerequisites:** BIO 132 or BIO 155 or BIO 254, ENG 085* and MAT 131* or higher, plus signed DMS fact sheet (EQV-DMSFS)

DMS 105 Sonographic Techniques (3 CR)

This course instructs the DMS student in scan planes, anatomical positioning, scan protocols, scan preparations, scan scheduling, appropriate history recording, correlations with other diagnostic procedures, and the techniques required for initiating and completing diagnostic sonographic procedures of the abdominal, obstetrical and gynecological patients. **Prerequisites:** DMS 101 and DMS 104

DMS 107 Sonographic Orientation-Vascular (3 CR)

This course prepares sonography students for their clinical work-site experiences. Students will explore interpersonal relationship skills, ethical decision making, and a review of clinical technical skills as they relate to the on-site work experience. Students will learn basic cross-sectional anatomy as related to beginning sonographic scanning of the arterial and venous systems, of the extremities, neck and abdomen.

DMS 122 Clinical Experience I (6 CR)

In this course, students receive supervised clinical work experience in an approved clinical education center. This course provides basic scanning opportunities, patient interviewing techniques, professional attitudes and ethics, and other basic patient/professional situations under the direct supervision of a registered diagnostic medical sonographer (RDMS). Completion of professional and technical scanning proficiencies are required. A minimum of 515 hours are required to complete this course. **Prerequisite:** DMS 101

DMS 140 Sonographic Orientation & Technique (3 CR)

In this course students learn the principles of application of ultrasound as it pertains to echocardiographic exam. Topics of study include: windows and views, anatomy and physiology of the heart and great vessels, Doppler techniques, nomenclature of cardiac structures per ASE guidelines, LV assessment and function, as well as clinical indications for the echo. These studies are for preparation of applying correct techniques in the acquisition of sonographic cardiac images.

DMS 141 Adult Echo I (4 CR)

In this course students learn fundamentals of cardiac pressures, cardiac cycle, and the cardiac conduction system. Studies include: cardiac valves – normal and abnormal conditions, flow abnormalities, and physiological complications from these conditions. These studies are for preparation of applying correct techniques in the acquisition of sonographic cardiac images.

DMS 142 Echo Clinical I (2 CR)

In this course students receive 168 hours of supervised clinical experience in an approved clinical education center. This course provides hands-on experience in basic cardiac imaging, patient care, and application of knowledge and skills acquired in DMS 140 and DMS 141. Successful completion of professional and technical scanning proficiencies is required to remain in the program. This course is the first in a series of three clinical courses that prepare the student for the final objective of performing and evaluating the adult echocardiogram.

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

DMS 144 Cardiovascular Principles (3 CR)

This course is a study of cardiac physiology, cardiac hemodynamics, principles of Doppler, and ECG interpretation. Problem solving, evaluation, and echo interpretation will be emphasized in this course. This course contains materials and instruction that will prepare the student in meeting the program's final objective of independent performance and evaluation of the complete adult echocardiogram.
Prerequisites: DMS 140 and DMS 141

DMS 148 Echo Clinical II (7 CR)

In this course students receive 512 hours of supervised clinical experience in an approved clinical education center. This course provides hands-on experience in intermediate level cardiac imaging and use of cardiovascular equations. Successful completion of scanning proficiencies is required to remain in the program. This course is the second in a series of three clinical courses that has the final objective of independent performance and evaluation of the adult echocardiogram.

DMS 151 Peripheral Arterial I (3 CR)

This course facilitates student learning of diagnostic testing methods for the peripheral arterial systems of the upper and lower extremities. Testing methods covered will include segmental pressures, color Doppler imaging (CDI) and duplex sonography.
Prerequisite: BIO 132 or BIO 155 or BIO 253

DMS 152 Peripheral Arterial II (3 CR)

This course, a continuation of DMS 151, facilitates student learning of diagnostic testing methods for the peripheral arterial systems of the upper and lower extremities. Testing methods covered will include segmental pressures, color Doppler imaging (CDI) and duplex sonography. Abdominal vascular testing techniques will be included.
Prerequisite: DMS 151

DMS 155 Peripheral Venous (3 CR)

This course facilitates student learning of diagnostic testing methods for the peripheral venous systems of the upper and lower extremities. Venous hemodynamics and testing methods covered include all areas of color Doppler imaging (CDI), air and photo plethysmography.
Prerequisite: BIO 132 or BIO 155 or BIO 253

DMS 161 Vascular Clinical I (4 CR)

In this course students receive 300-plus hours of supervised clinical experience in an approved vascular laboratory. This course provides hands-on experiences in basic color Doppler imaging (CDI), hemodynamics, segmental pressures and duplex sonography. Students are instructed and supervised by registered vascular technologists. Completion of clinical competencies is required to complete this course.

DMS 196 Introduction to Cardiac Clinical (5 CR)

This course prepares cardiac sonography students for their clinical externship. Students will study and practice the technical as well as personal skills as they relate and are required for the on-site work experience. Students will demonstrate sonographic scanning of their discipline with the expected outcome of a basic level competency.
Admission to the cardiac sonography program required to register for this course.

DMS 197 Introduction to Clinical (5 CR)

This course will allow students to gain basic knowledge and practical skills that are necessary to begin a clinical externship in sonography.

Students will study and practice: 1) communication skills as they are applied to the student-to patient/sonographer/physician relationship, 2) patient assessment, and 3) scanning techniques that will be a part of their daily routine in their clinical practice. **Admission to the sonography program required to register for this course.**

DMS 198 Introduction to Vascular Clinical (5 CR)

This course prepares sonography students for their clinical work-site experiences. Students will review clinical technical skills as they relate to the on-site work experience. Students will learn sonographic scanning of their program discipline with the outcome of a basic level competency. **Admission to the vascular sonography program required to register for this course.**

DMS 200 Abdomen and Small Parts Sonography (4 CR)

In this course students learn in-depth, cross-sectional anatomy and pathology as related to sonographic scanning of the abdomen and small parts in the adult and pediatric patient. The class gives attention to physiologic and pathological changes of specific, non-specific diseases, and trauma as they relate to sonographic interpretation of the abdomen and small parts. Mastery level achievement is encouraged and expected.

DMS 201 Obstetric and Gynecologic Sonography (4 CR)

Students learn in-depth, cross-sectional anatomy and pathology as related to sonographic scanning of the pelvis in the adult and pediatric patient, and the gravid uterus. The class gives attention to physiologic and pathological changes of specific, non-specific diseases, and trauma as they relate to sonographic interpretation of the pelvis and gravid uterus. Mastery level achievement is encouraged and expected.

DMS 206 Sonographic Instrumentation (4 CR)

Students explore the mechanics of A-mode, B-mode, M-mode, Doppler, and real time equipment. Accessory equipment such as cameras, transducers, phased, annular and linear arrays, and all types of hard copy documentation instruments are investigated. Multiple methods of preventative maintenance and quality control are presented. Laboratory reinforces learning activities.

DMS 212 Comprehensive Sonography (4 CR)

This course includes advanced scanning practices with introduction to cardiac, peripheral vascular, neurosonography, breast, prostate, and musculoskeletal scanning. Invasive procedures and intra-operative scanning protocols and techniques will be enhanced upon. Opportunity and aid is given for ARDMS board applications. Extensive review of all facets of sonography is included in preparation for the ARDMS board exams. **Prerequisites:** DMS 200 and DMS 201

DMS 223 Clinical Experience II (6 CR)

This course includes supervised clinical experience in an approved clinical education center, advanced scanning techniques to demonstrate cross-sectional anatomy and pathology of specific and non-specific disease and traumatic changes. Specific attention is given to fetal development, fetal anomalies, abnormal prenatal and maternal conditions as they relate to sonographic scanning and interpreting of images. Although the student is still under the supervision of a RDMS professional, the student is expected to perform sonographic procedures independently as a regular portion of this course. The completion of professional and technical scanning proficiencies are required. A minimum of 515 clinical hours are required for successful completion of this course. **Prerequisites:** DMS 122 and DMS 200

DMS 224 Clinical Experience III (6 CR)

This course includes supervised clinical experience in an approved clinical education center. Advanced scanning procedures, methods and experience are provided in this course. Students experience advanced scanning modalities via M-mode, Doppler, 3D, real-time and invasive procedures. Comparative interpretations of sonographic imaging with other diagnostic imaging modalities are provided. Students are expected to initiate, perform, and complete all sonographic procedures with direct supervision by a RDMS. The successful completion of professional and technical scanning proficiencies are required. A minimum of 320 clinical hours are required to successfully complete this course. **Prerequisites:** DMS 201 and DMS 223

DMS 240 Adult Echo II (4 CR)

In this course students will focus on the abnormal heart. Valvular disease, coronary artery disease, diseases of the myocardium, cardiac masses and tumors, pericardial disease and diseases of the aorta are some of the topics to be covered. Students will also learn the various appearances of congenital heart disease in the adult heart. This advanced course contains materials and instruction that will assist the student in meeting the final objective of independent performance and evaluation of the complete adult echocardiogram.

Prerequisites: DMS 140, DMS 141 and DMS 144

DMS 244 Echo Clinical II (6 CR)

In this course students receive 464 hours of supervised clinical experience in an echo lab at an approved medical facility. This course provides hands-on experience at an advanced level of cardiac imaging and use of cardiovascular equations. Interpretation skills will apply. Successful completion of scanning proficiencies is required to graduate from the program. This clinical course is the final course in a sequence of three, and the final objective to be met is successful, independent performance and evaluation of the complete adult echocardiogram.

Prerequisites: DMS 142 and DMS 148

DMS 251 Cerebrovascular I (3 CR)

This course facilitates student learning of diagnostic testing methods and hemodynamics of the extracranial vessels of the head and neck. Testing methods covered include color Doppler imaging (CDI) and duplex sonography. **Prerequisite:** BIO 132 or BIO 155 or BIO 253

DMS 253 Cerebrovascular II (1 CR)

This course is a continuation of DMS 251. Facilitates student learning of diagnostic testing methods and hemodynamics of the intracranial vessels. Testing methods covered include color Doppler imaging (CDI) and duplex sonography. **Prerequisite:** DMS 251

DMS 265 Vascular Clinical II (4 CR)

This course is a continuation of DMS 161. Students receive 300+ hours of supervised clinical experience in an approved vascular laboratory. It also provides hands-on experiences in basic and advanced color Doppler imaging (CDI), hemodynamics, segmental pressures and duplex sonography. Students are instructed and supervised by registered vascular technologists. Completion of clinical competencies required to complete this course.

DMS 266 Vascular Clinical III (4 CR)

This course is a continuation of DMS 265. Students receive 300 hours of supervised clinical experience in an approved vascular laboratory. It also provides hands-on experiences in advanced color Doppler imaging (CDI), hemodynamics, segmental pressures and duplex sonography. Students are instructed and supervised by registered

vascular technologists. Completion of clinical competencies is required to complete this course.

eCOMMERCE (ECM)**ECM 101 eCommerce Fundamentals (3 CR)**

The course introduces revenue models for conducting business transactions globally with customers over the Internet. Topics include integrating eBusiness strategies with traditional store-front objectives, procuring hardware and software resources, optimizing web marketing opportunities, and complying with legal, ethical and regulatory restrictions. Student will apply concepts to real-life scenarios through active-learning strategies. **Prerequisites:** ENG 085*, ENG 090* and MAT 020* or higher

ECM 201 Advanced Information Technologies (3 CR)

(SAME AS CIS 201)

This course enhances electronic communication skills and computer concepts essential to using current advanced information technologies. Topics include web collaboration, web conferencing, web 2.0 applications, social media, mobile computing, file conversions and cross-platform compatibility.

Prerequisites: CIS 101*, ENG 085*, ENG 090*

ECM 220 eBusiness II: SEO/Management (3CR)

This course covers search engine optimization, analyzing web marketing efficiencies and evaluating content management systems. Topics include competitive comparison, keyword analysis, effective link building, blogs and eCommunities setup. Specific eBusiness components, such as Google Analytics, social networking sites and pay-per-click advertising campaigns are emphasized to increase the efficiency of eCommerce site operations.

Prerequisite: CIS 095*

ECONOMICS (ECN)**ECN 231 Macroeconomics (3 CR)**

This course covers macroeconomics and explains the operation of free markets, the role of government in the economy, measurement of the national product, inflation and unemployment, monetary and fiscal policy, and economic growth.

Prerequisites: ENG 085* and MAT 020* or higher

ECN 232 Microeconomics (3 CR)

This course covers microeconomics: the market structure of firms operating in competition and monopoly, labor markets and unions, how income is distributed, current economic problems, international economics, and alternative economic systems.

Prerequisites: ENG 085* and MAT 020* or higher

EDUCATION (EDU)**EDU 100 Pre-teaching Pathway (3 CR)**

A career track introduction to the teaching profession designed for students with basic skill levels in reading, writing and math/science. Experiences in the course will include an introduction to: professional portfolio, teaching professionalism and technology. Students will begin the professional career path with grades pre-K to 12 field experiences and professional pathway planning, as well as investigating opportunities in the field of teacher education.

Prerequisite: ENG 085*

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

EDU 221 Exploring Teaching (3 CR)

"What are the things prospective teachers beginning their formal study of teacher education should know?" Students will gain knowledge of the role of a professional teacher and education topics: schools, diverse students and their needs, historical and current education issues and trends, as well as philosophical and legal foundations in American education. Students will explore and experience key concepts and skills through reading, research, presentation of a lesson, development of a professional portfolio and a teaching philosophy, documented technology and education site-based field experiences. Minimum of 16 hours field experience is included. **Prerequisites:** EDU 100 and ENG 131

EDU 232 The Exceptional Child (3 CR)

This survey course introduces the learner to exceptional children from pre-kindergarten through adolescence. Characteristics, educational considerations and implications for educators and parents are a sample of the topics addressed. Developmental factors and the role of families in education and intervention, appropriate practices, culturally competent professional behavior, and collaborative interpersonal and inter-professional actions are included. The course includes historical and organizational factors, laws, and implications of all areas of exceptionality that govern special education. A minimum of five hours of approved literacy field service is required.

Prerequisites: ENG 085* and ENG 131

EDU 263 Child Growth & Development (3CR)

This course surveys learning development from prenatal stages through adolescence. Students study normal and exceptional development of the physical, cognitive, emotional and social domains of children in the contexts of home, school and group settings. Students study developmental theories and best practice methods. A minimum of 20 hours of approved field service including a group diversity project is required.

EDU 290 Instructional Skills Workshop (2 CR)

Instructional skills workshop course brings together best practices in education and a proven process that fosters personal growth and reflections about the teaching/learning process. The course includes: best practices in teaching/learning, lesson development and delivery, lesson assessment skills, and feedback skills. In addition, best practices in teaching techniques are explored and include: cooperative learning, multiple intelligences, assessment techniques, curriculum alignment, etc. This course is intended for anyone interested or employed in the teaching profession.

ELECTRONIC TECHNOLOGY (ELT)

ELT 101 Basic Industrial Electricity (2 CR)

This course reviews basic arithmetic as required for manufacturing applications: addition, subtraction, multiplication and division of fractions and decimals. Student will work with problems involving percentages, ratios, proportions, square roots and tapers.

ELT 120 Circuit Analysis I (4 CR)

Students examine the fundamental concepts of DC circuits including electricity and magnetism, resistance, capacitance, inductance, series and parallel circuits, power and basic electrical measurements.

ELT 125 Circuit Analysis II (3 CR)

A study of alternating electrical current is presented. Topics include AC measurements, resistance, inductance and capacitance in AC circuits. Transformers and filters are explored. **Prerequisite:** ELT 120

ELT 130 Electronics I (4 CR)

Study of electronic devices including diodes, bipolar and field effect transistors, integrated circuits, and other semiconductor devices; their parameters, nomenclature, characteristics, and application to practical circuitry. **Prerequisite:** ELT 125

ELT 140 Introduction to Digital Electronics (4 CR)

This course is the beginning course in digital electronics. Topics include number systems, Boolean algebra, and basic logic gates and circuits.

Prerequisite: ELT 130

ELT 148 Electrical Math I (2 CR)

Introductory course beginning with algebra involving addition, subtraction, multiplication, division, equations, powers of 10, Ohm's Law, factoring, and other functions of math related to electrical problem solving.

ELT 149 Electrical Math II (2 CR)

This is an advanced course covering angles, trigonometric problems, right triangles, equations, vectors, periodic functions and related math applications as a tool of the trade. **Prerequisite:** ELT 148

ELT 150 Residential Wiring (2 CR)

Topics covered in this course include blueprint reading, NEC code, branch circuit design, service entrance and switch control. Students are required to practice wiring and design skills with hands-on experiences.

ELT 151 Commercial Wiring (2 CR)

Topics covered in this course include wiring plans of commercial buildings, three phase 208/120 volt services, lighting fixtures, service entrances and metering facilities. The students will be given opportunities to practice skills in the wiring laboratory.

Prerequisite: ELT 150

ELT 152 Industrial Wiring (2 CR)

Topics covered in this course include, substation and high voltage metering, feed duct, panel boards, motors and controllers, signal systems, ventilation and others. Students will be given opportunities to practice skills in the electrical wiring laboratory. **Prerequisite:** ELT 150

ELT 160 Principles of Alternative Energy (3 CR)

(SAME AS ALT 200)

This course will introduce students to alternative energy systems and their design and applications. The course will focus primarily on wind turbines, solar systems, and hydrogen fuel cells. A basic understanding of electricity is highly recommended.

Prerequisites: ENG 085* and MAT 020* or higher

ELT 163 Wind Energy (3 CR)

(SAME AS ALT 250)

In this course students are exposed to many of the skills necessary to install a residential wind turbine system. Topics include siting wind turbines, turbine components, estimating turbine electricity output, loading, battery, inverters and off-grid/grid-connected systems. Labs include hands-on activities with turbines and electrical equipment. Prior electrical skills and knowledge are required to be successful in this course. **Prerequisites:** ELT 120, ELT 150 and ELT 151

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

ELT 166 Solar Energy (3 CR)*(SAME AS ALT 255)*

This course explores the design, installation and maintenance of photovoltaic (PV) systems. Topics include site survey and assessment, estimating solar array electricity output, inverters, battery systems and off-grid/grid-connected systems. Labs include hands-on activities with solar panels and electrical equipment. Prior electrical skills and knowledge are required to be successful in this course.

Prerequisites: ELT 120, ELT 150 and ELT 151

ELT 215 Electrical Troubleshooting (2 CR)

This course explores troubleshooting in various areas such as: control circuits, combination starters, control devices, special controls, DC motors, AC motors, lighting systems with use of schematics, building drawings, and with emphasis on cutting trouble-shooting time.

Prerequisites: ELT 125 and ELT 152

ELT 220 Industrial Motion Control (3 CR)

This course covers motion controls as used in real world situations, including PLC, robotics, servos, sensing devices, actuators and controls. **Prerequisite:** ELT 140

ELT 250 Electric Motors & Controls (4 CR)

Basic principles involved in the operation of motors and controls. Study includes single-phase motors and their operating principles, polyphase systems and the various control devices used with these systems.

Prerequisite: ELT 125

ELT 260 Basic Programmable Controllers (4 CR)

Basic programmable controllers is a course for apprentices and skilled trades trainees looking at the history, characteristics, application and limitation of PCs. Numeration systems, binary-coded decimals, ASCII, gray code and Boolean logic studied. Additional study includes input/output devices, processing and programming functions, program development, documentation, start-up and troubleshooting.

Prerequisite: ELT 125

ELT 261 Advanced PLC Programming (2 CR)

This course introduces topics that include advanced PLC programming, troubleshooting and data communications.

Prerequisite: ELT 260

ELT 274 Electrician's National Code (3 CR)

This course is an extensive study of the national and local electric codes for wiring and apparatuses. It covers wiring design and protection, wiring methods and materials, equipment for general use including motors and controllers, special occupancies such as hazardous location; special equipment such as electric welding and machine tool wiring, and the use of tables and diagrams for the solution of practical wiring problems. **Prerequisite:** ELT 150

EMERGENCY MEDICAL SERVICES (EMS)**EMS 110 Advanced First Aid & American Heart CPR (2 CR)**

This course provides instruction in adult, child and infant cardiopulmonary resuscitation, as well as advanced first aid. It is designed to prepare an individual to handle medical or accidental emergencies until professional help arrives or until the victim can seek help, and to handle minor injuries that do not require professional assistance. Upon successful completion of this course the student is qualified to receive CPR and Advanced First Aid certificates through the American Heart Association (AHA) and American Academy of Orthopedic Surgeons (AAOS).

EMS 113 Medical First Responder (5 CR)

The Medical First Responder course (MFR) is a minimum 64 hour lecture, lab and practical based emergency medical education program in a wide variety of medical and trauma settings. This level of education is the first level of licensure that the State of Michigan recognizes for a professional emergency healthcare provider. The scope of practice is typically utilized by rural fire departments, police and security agencies, industrial plant workers, lifeguards, search and rescue teams, along with private and public school personnel.

Prerequisite: Instructor Permission Required

EMS 114 EMS Medical Terminology/A & P (3 CR)

This course provides demonstration and foundation development for medical terminology, anatomy and physiology for students pursuing an EMS education. The structure of this course will be a lecture/lab format focused on anatomy and physiology of the human body combined with word building, definitions, spelling, usage and pronunciation of medical terminology utilized specifically for the entry level EMS student. Instructor permission is required for this course.

Prerequisite: Instructor Permission Required

EMS 122 EMT Basic Technology (12 CR)

The EMT Basic Technology course prepares the student for entry level emergency technician licensure. The course is approved through the Michigan Department of Community Health, which provides specific guidelines for didactic, practical and clinical learning on campus and through approved clinical sites. Upon successful completion of the program students may apply to take the National Registry Basic EMT Certification exam for state licensure. Students learn the roles and responsibilities of a basic level emergency medical technician in providing emergency care. Content areas are covered in lectures, practical skills practiced in a laboratory setting along with observations and experience that will be gained in a clinical setting. Students must meet program entry requirements including drug screening, background checks, immunizations, and technical stands along with a completed physical form. The students are required to meet prerequisite courses and grade level requirements to proceed in the program.

Prerequisite: Instructor Permission Required

EMS 150 EMT Intermediate Technology (I-85) (8 CR)

The intermediate emergency medical technician (EMT-I) is a classroom and field based emergency medical education program that prepares students to take the National Registry Intermediate EMT Certification exam. Students learn the role and responsibilities of an emergency medical technician at an intermediate level in providing emergency care. Content areas are covered in lectures, practical skills practiced in a laboratory setting along with observations and experience that will be gained in a clinical and/or internship setting. **Instructor permission is required for enrollment.**

EMS 215 Paramedic Technology I (12 CR)

Paramedic Technology I is the first of three consecutive courses that prepare a current EMT-B or EMT-I licensed student for a paramedic license. The Michigan Department of Community Health approves this course (Approval #P-99-0015) and sets the hour requirements. Successful completion allows the student test for the National Registry written and practical exams. Upon successful completion of the National Registry, the student may apply for state licensure. This course in sequence includes advanced practice with primary focus on preparatory entry-level paramedic skills. Content areas are covered in lectures,

practical skills practiced in a laboratory setting along with observations and experience that will be gained in a clinical setting. Students must meet program entry requirements including drug screening, background check, immunizations and technical standards along with a completed physical form. All EMS 215 students are required to enroll in lab EMS 2151. **Instructor permission is required register for this course.**

EMS 225 Paramedic Technology II (12 CR)

This course includes advanced practice with focus on patient assessment and medical emergencies. Content areas are covered in lectures, practical skills practiced in laboratory settings along with observations and practical experience that will be gained in a clinical setting. This course is a Michigan Department of Community Health EMS and Trauma Systems section approved program leading to licensing as an Advanced Emergency Medical Technician-Paramedic; Michigan Department of Community Health EMS and Trauma Systems section course approval number: P-99-0015. Students must have a current American Heart ACLS, PALS and BLS course completion card, along with prerequisites to register for this course.

Prerequisites: EMS 215 and EMS 2151

EMS 235 Paramedic Technology III (7 CR)

This course includes advanced practice with focus on patient assessment and traumatic emergencies, in addition to dealing with patient with special considerations. Content areas are covered in lectures, practical skills practiced in laboratory settings along with observations and practical experience that will be gained in a clinical setting. This course is a Michigan Department of Community Health EMS and Trauma Systems section approved program leading to licensing as an Advanced Emergency Medical Technician-Paramedic; Michigan Department of Community Health EMS and Trauma Systems section course approval number: P-99-0015. A 250 hour non-paid internship is the capstone requirement for this program and will be completed in the third and final EMS 235 semester.

Prerequisite: EMS 225

ENGINEERING (EGR)

EGR 153 Engineering Drawing (4 CR)

Students examine the communication aspects of graphics emphasizing sketching and computer-aided drafting and design. This course covers simple pictorial and working drawings, orthographic and isometric projections, an introduction to the mechanical design process, the basics of free hand sketching and of C.A.D., and the computer as a design tool.

EGR 261 Engineering Mechanics I (4 CR)

Students survey the fundamentals of solid mechanics. This course covers equilibrium, static equivalence, stress, strain, and material behavior, particular application to deflection of beams and axial, bending, torsion, shear and combined stresses, as well as an introduction to stability of columns. **Prerequisite:** MAT 154

EGR 262 Engineering Mechanics II (4 CR)

Students examine the principles of dynamics, including the motion of a particle, the kinematics and kinetics of plane motion of rigid bodies, the principle of work and energy, impulse and momentum and mechanical vibrations. **Prerequisite:** EGR 261

ENGLISH (ENG)

ENG 080 Reading Essentials (4 CR)

This course provides the most fundamental support for students who need to develop college-level reading skills. Students must show an ability to read some pre-college writing independently. They are provided with a sequentially structured approach to comprehending college-level writing. Student writing is a significant component.

ENG 085 College Reading (4 CR)

This course is intended for students who have developed their reading skills nearly to the college level. Further skill and knowledge development focuses on the common patterns of text found in both narrative and expository writing, on strategies for self-monitoring and memory enhancement, and on the development of vocabulary typically found in college level textbooks. Student writing is a significant component. **Prerequisite:** ENG 080*

ENG 090 Introduction to Writing (4 CR)

This is an intensive course in composition for students who need supplementary help in writing. A personal approach helps students enhance their writing abilities, resolve writing problems and explore writing strategies. An end-of-semester portfolio is required.

Prerequisite: ENG 080*

ENG 131 Writing Experience I (3 CR)

This is an intensive writing course designed to help students improve, strengthen and refine writing skills. Research methods are introduced. An end of the semester portfolio of narrative and informative writings is required. **Prerequisites:** ENG 085 and ENG 090*

ENG 132 Writing Experience II (3 CR)

This course is a continuation of the writing instruction and practice begun in ENG 131 with an emphasis on critical thinking, information gathering, and those forms of writing useful to academic and professional life. Research writing is emphasized. An end of the semester portfolio of informative and research writings is required.

Prerequisite: ENG 131

ENG 186 Intro Photojournalism (3 CR)

Use of the 35-millimeter single reflex camera and introduction to digital camera use. Camera operation and darkroom procedures (film development and enlargements) are covered. Instruction emphasizes photographic equipment, lenses, exposure and composition.

ENG 201 Advanced Composition (3 CR)

An advanced course offering. Selected students practice peer tutoring and research writing. Emphasis is placed on student writing conferences, process writing, and standard research methods. End of the semester portfolio of research papers is required. Additionally, all students enrolled in this course work as tutors in the Writing Center.

Prerequisite: Instructor Permission Required

ENG 210 Introduction to Film (3 CR)

Students are introduced to film as a visual art and to basic film terms and techniques, such as composition, movement, editing and sound. Readings in film history, genre, theory and criticism. Includes JCC Winter Film Series. **Prerequisites:** ENG 085* and ENG 131

ENG 232 Technical & Business Writing (3 CR)

A course designed to provide practice in a variety of written and oral communications to meet the requirements of the workplace. Projects may include descriptions, instructions, resumes, proposals, reports or online documents. It involves frequent writing, both in and out of class, as well as oral presentations, collaborative activities and individual conferences. **Prerequisites:** ENG 085* and ENG 131

ENG 236 Women In a Changing Society (3 CR)
(*SAME AS SOC 236*)

Inquiry into historical and changing roles of women, looking at causes of these changes and their effects on women and society through literature, sociology, biology and history.

Prerequisites: ENG 085* and ENG 131

ENG 246 Short Story & Novel (3 CR)

Students are introduced to traditional and contemporary fictional genres. This course emphasizes understanding, appreciation and the critical analysis of narrative art. Selections for study are chosen from English and American literature as well as world literature in translation.

Prerequisites: ENG 085* and ENG 131

ENG 247 Poetry & Drama (3 CR)

Students are introduced to lyric and dramatic genres. This course emphasizes understanding, appreciation and enjoyment of poetry and theatre as language performances and literary forms. Selections for study are chosen from English and American literature as well as world literature in translation. **Prerequisites:** ENG 085* and ENG 131

ENG 249 African-American Literature (3 CR)

Survey of the literature of African-American writers. Emphasis is on the major writers in narrative, poetry, fiction, essay and drama.

Prerequisites: ENG 085* and ENG 131

ENG 252 Shakespeare (3 CR)

Students read representative plays and are introduced to the Elizabethan world. Course emphasizes developing understanding, appreciation and critical analysis skills. **Prerequisites:** ENG 085* and ENG 131

ENG 254 Children's Literature (3 CR)

Students survey the various genres of children's literature from a critical point of view. Course emphasizes developing student competency in oral reading and presentation of children's literature.

Prerequisites: ENG 085* and ENG 131

ENG 255 American Literature-19th Century (3 CR)

Students examine the development of a distinctive American literature and culture during the 19th century. Students read selections from many writers, with emphasis on major figures such as Hawthorne, Melville, Thoreau, Emerson, Poe, Dickinson, Whitman, Douglass and Jacobs.

Prerequisites: ENG 085* and ENG 131

ENG 256 American Literature-20th Century (3 CR)

Students examine the literature and culture of America from 1890 to the present, with emphasis on the development of organic and post-modern writing in narrative, poetic and critical modes.

Prerequisites: ENG 085* and ENG 131

ENG 257 World Literature I (3 CR)

Students compare major themes and writers from Africa, America, Asia and Europe. **Prerequisites:** ENG 085* and ENG 131

ENG 261 Creative Writing I (3 CR)

Students experiment with writing poetry, fiction, drama and creative nonfiction for discussion and criticism. Students invent, collaborate and revise before submitting a portfolio of their work. Contemporary readings and visiting authors/videos enhance the class, but primary attention is given to students' creative writing process.

Prerequisites: ENG 085* and ENG 131

ENG 262 Creative Writing II (3 CR)

Students in this workshop write fiction, poetry and other forms, and present writing for criticism and discussion. Contemporary readings emphasize participation of writers in a living act. Students write and workshop fiction, poetry and other genres. Contemporary readings emphasize writing invention and writing communities.

Prerequisites: ENG 261

ENTREPRENEURSHIP (ENT)**ENT 160 Introduction to Entrepreneurship (2 CR)**

Students will understand the role of entrepreneurial businesses in the United States and the impact on our local, regional, national and global economy. The student will evaluate the skills and commitment necessary to successfully operate an entrepreneurial venture. Additionally the student will review the challenges and rewards of entrepreneurship as a career choice as well as entrance strategies to accomplish such a choice.

Prerequisite: CIS 095*

ENT 161 Investigating Business Ideas (2 CR)

The student will assess his/her personal readiness for an entrepreneurial venture(s) by evaluating their skills, experience and academic preparation. The student will assess the current economic, social and political climate for their entrepreneurial idea(s). Additionally, the student will be able to analyze and determine whether or not their business concept fits or doesn't fit into the current business environment.

Prerequisite: CIS 095*

ENT 162 Legal Issues for Small Business (2 CR)

The student will be able to identify the forms of business ownership and the legal and tax implications for each. In addition, the student will be able to explain laws covering issues such as personnel, contracts and protection of intellectual property. The student will also be able to explain the reporting requirements for local, state and federal agencies.

ENT 163 Financial Management for Small Business (2 CR)

The student will be able to identify and evaluate the various sources available for funding a small business; demonstrate an understanding of financial terminology; read, prepare and analyze a financial statement; and write a loan proposal. In addition, the student will be able to identify financing needs, establish credit policies, and prepare sales forecasts.

ENT 164 Entrepreneurial Marketing (2 CR)

In this course, the student will gain insights essential for marketing their entrepreneurial venture utilizing innovative and financially responsible marketing strategies. The student will analyze marketing philosophies implemented by key successful entrepreneurs. Additionally, the student will prepare a marketing plan to launch their entrepreneurial venture and a marketing plan to implement during the first two years of business operation.

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

ENT 169 Business Plan (3 CR)

The student will be able to evaluate their business concept and write a sound business plan for their entrepreneurial venture. In the process of doing so, the student will be able to assess the strengths and weaknesses of a business concept; collect and organize market research data into a marketing plan; and prepare the financial projects for their business venture. In addition, students will be able to identify and evaluate various resources available for funding the entrepreneurial venture. To be successful in this course basic computer skills are required. **Prerequisites:** CIS 095*, ENG 085*, ENG 090*, ENT 161 and MAT 020* or higher

ENGLISH AS A SECOND LANGUAGE (ESL)

ESL 080 English as a Second Language: Beginning I (1 CR)

This course is designed for the student with little or no background in English. Students learn integrated basic skills in reading, writing, speaking and listening. **NOTE: This course will not apply toward a JCC degree or certificate.**

ESL 081 English as a Second Language: Beginning II (1 CR)

This course is a continuation of ESL 080, designed for the student with little or no background in English. Students learn integrated basic skills. **NOTE: This course will not apply toward a JCC degree or certificate.** **Prerequisite:** ESL 080

ESL 085 English as a Second Language: Basic I (1 CR)

Students learn to use English to get along in the community. In addition to the integrated basic skills in reading, writing, speaking and listening, students learn strategies to help them communicate with more success. **NOTE: This course will not apply toward a JCC degree or certificate.** **Prerequisite:** ESL 081

ESL 086 English as a Second Language: Basic II (1 CR)

This course continues the coursework begun in ESL 085. Students learn integrated basic skills and strategies to help them communicate with more success. **NOTE: This course will not apply toward a JCC degree or certificate.** **Prerequisite:** ESL 085

ESL 090 English as a Second Language: Intermediate I (1 CR)

Students increase their vocabulary and understanding of grammatical structures, enhance their communication strategies and practice the four language skills. At this level a student may focus more strongly on particular language skills to increase proficiency in that skill. **NOTE: This course will not apply toward a JCC degree or certificate.** **Prerequisite:** ESL 086

ESL 091 English as a Second Language: Intermediate II (1 CR)

This continues the coursework begun in ESL 090. Students study vocabulary, grammatical structures, communication strategies and practice the four language skills with a stronger focus on one language skill. **NOTE: This course will not apply toward a JCC degree or certificate.** **Prerequisite:** ESL 090

ESL 095 English as a Second Language: Advanced I (1 CR)

Students practice advanced comprehension strategies and continue to refine their communication skills. Advanced students should also be able to succeed in an academic course with native speakers. **NOTE: This course will not apply toward a JCC degree or certificate.** **Prerequisite:** ESL 090 or ESL 091

ESL 096 English as a Second Language: Advanced II (1 CR)

This continues the coursework begun in ESL 095. Students refine communication strategies and may focus on one language skill to improve proficiency. **NOTE: This course will not apply toward a JCC degree or certificate.** **Prerequisite:** ESL 095

FIRST YEAR SEMINAR (FYS)

FYS 105 College Success Seminar (1 CR)

This first-year experience course focuses on the transition of high school graduates into their first semester of college with an emphasis on developing study strategies, teamwork and problem solving. Basic academic areas will be reviewed to improve skill levels prior to fall semester.

FYS 110 Life Maps (1 CR)

This first-year experience course equips students for transitions in education and life. Students will be actively involved in learning and integrating practical applications to promote success. Students will develop a learning portfolio and an educational plan while enhancing critical thinking and study strategies.

FYS 120 Professional Seminar (1 CR)

This first-year experience course introduces students to baccalaureate-track, accelerated programs with an emphasis on time management, online learning strategies, web resources and effective study strategies for fast-paced courses. The course will assist students in adjusting to a cohort-based, accelerated bachelor's degree program.

FRENCH (FRN)

FRN 131 Elementary French I (4 CR)

Introduces and develops the four skills of language learning: listening, speaking, reading and writing, with special emphasis on listening and speaking. **Prerequisite:** ENG 085*

FRN 132 Elementary French II (4 CR)

Provides increased practice in the basic language skills: listening, speaking, reading and writing. **Prerequisite:** FRN 131

GEOLOGY (GEL)

GEL 160 Introduction to Geology (4 CR)

The course covers minerals, rocks, earthquakes and volcanoes. It also covers the landscapes and behaviors of continents and oceans. Diagrams, photographs, topographic maps, Internet resources and hands-on exercises are utilized to support the concepts. Course includes a laboratory component. **Prerequisites:** ENG 085* and ENG 090*

GEOGRAPHY (GEO)

GEO 131 Physical Geography (3 CR)

The course begins with maps and grid systems. Map exercises are used all semester to enhance the textbook. Other topics include meteorology, vegetation, earth materials and a range of tectonic and landscape subjects. **Prerequisites:** ENG 085* and ENG 090*

GEO 132 World Regions (3 CR)

This course covers all regions of the world from a human perspective. Topics include resources, population, settlements, agriculture, manufacturing and transportation. There is special emphasis on Internet research in the classroom. **Prerequisites:** ENG 085* and ENG 090*

GERMAN (GER)**GER 131 Elementary German I (4 CR)**

Introduces and develops the four skills of language learning: listening, speaking, reading and writing, with special emphasis on listening and speaking. **Prerequisite:** ENG 085*

GER 132 Elementary German II (4 CR)

Continuation of German 131 with increased practice in listening, reading, writing and speaking. **Prerequisite:** GER 131

HISTORY (HIS)**HIS 120 Ancient History (3 CR)**

This course attempts to answer the question, "Where did it all begin?" with a survey of the politics, art and religion of the ancient world from history's beginning in Sumeria to the end of the ancient world when the Western Roman Empire faded out of sight in 476 A.D.

Prerequisites: ENG 085* and ENG 090*

HIS 125 African-American History (3 CR)

Examines the role African-Americans have historically played in the political, economic and social construction of America.

Prerequisites: ENG 085* and ENG 090*

HIS 131 Western Civilization to 1555 (4 CR)

HIS 131, together with HIS 132, constitutes the basic history course, as well as an introduction to the humanities. This course examines the roots of Western culture and its development through the Reformation. The course also surveys the social, philosophical, scientific, artistic, religious and political setting evolution with emphasis on the role of ideas and their consequences in the history of the human kind from the beginning to the 16th century. **Prerequisites:** ENG 085* and ENG 090*

HIS 132 Western Civilization 1555 to Present (4 CR)

HIS 131, together with HIS 132, constitutes the basic history course, as well as an introduction to the humanities. This course is a continuation of HIS 131, emphasizing the development of new political areas, economic and social theories, the evolution and expansion of modern states, and efforts to control international tensions from the 16th century to the present. **Prerequisites:** ENG 085* and ENG 090*

HIS 231 Development of the U.S. through the Civil War (3 CR)

This course is the study of American national history beginning with the colonization to the Civil War. Themes include exploration and settlement, development of political theory, development of the West and its influence on the country, the growth of sectionalism and the Civil War. **Prerequisites:** ENG 085* and ENG 090*

HIS 232 Development of the U.S. from the Civil War (3 CR)

This course examines the period from the Civil War and Reconstruction to the present day. Emphasizing industrial, commercial and agricultural expansion; intellectual currents; outstanding social changes; the nation's expanding role in the world affairs, and the Cold War.

Prerequisites: ENG 085* and ENG 090*

HIS 235 20th Century History (3 CR)

Examination of national and international developments in the past century focusing on such matters as colonialism, global warfare, and emerging nations, appearance and disappearance of communism. In addition, polarization of wealth and power, the revolution in technology, communication, businesses and industry, the conflict between the globalization movement and national tendencies will be examined.

Prerequisites: ENG 085* and ENG 090*

HEALTH OCCUPATIONS (HOC)**HOC 130 Introduction to Health Occupations (3 CR)**

Students through classroom and laboratory facilitation will examine health care teams, interactions between and reactions of patients in normal and altered states, professionalism, OSHA standards, medical ethics, lifting, moving, emergency assessment and response.

HOC 135 Electrocardiography Technician (4 CR)

This course will consist of an overview of the cardiovascular system, proper documentation, and vital signs, along with HIPAA compliance and infection control in the clinical setting. The main focus of this course will be on how to perform and analyze an EKG and recognize various arrhythmias. Students will also learn about exercise electrocardiography and how to perform ambulatory monitoring. The course will also include extensive instruction on cardiovascular pharmacology. **Prerequisites:** ENG 085* and MAT 020* or higher

HOC 140 Pharm Tech Concepts & Calculations (4 CR)

This course applies mathematics in the calculations required for determination of proper dosages, conversion operations, as well as in preparation of parenteral solutions for injections, IVs, etc. Detailed instruction in the techniques used in dosage preparation aseptic techniques will be provided. Knowledge of pharmaceutical and medical terms, abbreviations, and symbols commonly used in the prescribing, dispensing and charting medications. Demonstrating drug purchasing and inventory control concepts. Preparation and pretesting for sitting for the Pharmacy Technician Certification Board (PTCB Exam).

Prerequisites: MAT 131 or higher and NUR 121

HOC 201 Quality Improvement-Health Care (3 CR)

This course will provide a fundamental knowledge of sustaining quality improvement within a health care organization. Areas of studies will focus on accreditations, licensure, certifications, patient safety, employee safety, and quality indicators.

Prerequisites: ENG 085* and MAT 020* or higher*

HOC 202 Introduction to Health Informatics (3 CR)

This course applies fundamental knowledge of the processes of health systems via multiple data systems within a health care organization. Areas of studies will focus on health record input, tracking of medication distribution and quality indicators.

Prerequisites: ENG 085* and MAT 020* or higher*

HEALTH & PHYSICAL FITNESS (HPF)**HPF 110 Golf (1 CR)**

Learn beginning skills, rules and courtesies. This course emphasizes the swing, chipping and putting. Golf clubs are not provided.

HPF 119 Introduction to Yoga (1 CR)

Participants will begin to develop yoga as a practice to facilitate lifelong skills enhancing physical, emotional and intellectual strength, flexibility and power. Emphasis is on conscious awareness and internal focus through asana practice, relaxation, body alignment and breathing techniques.

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

HPF 139 Spinning (1 CR)

A fast paced, invigorating workout to music utilizing specialized "spinning" stationary exercise bikes. Students are able to exercise at their own pace. The class is designed for a wide range of fitness levels.

HPF 160 Wellness (1 CR)

Learn the theoretical and practical relationship of lifestyle to productivity. Students examine attitudes and behaviors that enhance quality of life and maximize personal potential. Students have opportunities for self-evaluation. **Prerequisite:** ENG 085*

HPF 161 Personalized Fitness (1 CR)

A self-paced program in which students exercise independently in a supervised lab. Instructor's guidance is available to develop an individualized plan to achieve personal health and fitness goals.

HPF 169 Aerobic Rhythms (1 CR)

Students at various fitness levels participate in a choreographed exercise/dance and step class for the improvement of cardiovascular fitness, strength and flexibility.

HPF 186 Weight Training & Wellness (3 CR)

The principle course focus is that of self-responsibility for well-being. Concentration is on aspects of wellness and conditioning that can be personally controlled and changed. Included are didactic and practical applications of principles for a comprehensive conditioning and wellness program in the context of creating a healthy lifestyle from a wellness perspective. **Prerequisite:** ENG 085*

HPF 187 Interval Training (1 CR)

Participate in a vigorous running workout. Intervals ranging in distance from 200-800 meters form the basis of the workout.

HPF 221 Jazz Techniques (3 CR)

(SAME AS DAN 121)

Beginner to intermediate level class exploring contemporary jazz and modern dance techniques. Includes an introduction to the fundamentals of choreography, exploration of the elements of dance, and history of dance.

HPF 268 Advanced Weight Training (2 CR)

Participate in fitness evaluations and individually prescribed programs designed to develop strength, aerobic endurance and flexibility.

Prerequisite: HPF 168 or HPF 186

HPF 277 Stress Management (2 CR)

Examine current information and techniques related to stress management. Students learn basic concepts and skills related to the holistic management of stress. **Prerequisite:** ENG 085*

HPF 283 Managing Stress and Holistic Health (3 CR)

This course provides students with a holistic approach to health focusing on competencies to manage stress. Students learn the relationship of lifestyle to their health. Through the reflective use of specific skills, tools and new knowledge students have an increased opportunity to enhance their lives and the lives of those around them. **Prerequisites:** ENG 085* and ENG 090*

HUMANITIES (HUM)

HUM 131 Cultural Connections (3 CR)

This interdisciplinary course examines contemporary issues, their human and technological components, and their historical precedents through art, music, literature and philosophy.

Prerequisites: ENG 085* and ENG 131

LICENSED PRACTICAL NURSING (LPN)

LPN 131 Foundations of Nursing (6 CR)

Introduction to the nursing process and their role as caregiver. Maslow's hierarchy of needs is explored, along with nursing skills that meet basic physiologic and safety needs. Laboratory and clinical experience provide the student an opportunity to demonstrate initial application of the roles of caregivers and member of the discipline in a highly structured, supervised setting.

LPN 132 Medications (3 CR)

Introduction to the purpose, use and action of medication in meeting basic human needs. Safety and legal implications discussed. Nursing process serves as the framework for understanding client needs during medication therapy. **Prerequisites:** BIO 155 or BIO 253 and BIO 254, LPN 141 or MOA 141 and MAT 033* or higher

LPN 141 Body Structure & Function (4 CR)

(SAME AS MOA 141)

This course is a body systems approach to the body structures and functions providing a foundation of understanding normal and abnormal body functions and disease processes. **Prerequisite:** ENG 085*

LPN 145 Normal/Therapeutic Nutrition (3 CR)

(SAME AS MOA 145 AND NUR 207)

Basic nutritional concepts are presented with emphasis on application to patient care. Selected nutritional disorders and fundamentals of diet therapy are also included. **Prerequisite:** ENG 085*

LPN 180 Nursing Care of Adults – IA (6 CR)

Student will use the nursing process to implement the caregiver role with adult clients experiencing basic physiologic needs. How disease states of core systems alter clients' needs and their ability to meet those needs is explored. Clinical experience provides students the opportunity to demonstrate the roles of caregiver and member of the discipline. **Prerequisites:** LPN 131 and MOA 120

LPN 181 Nursing Care of Adults – IB (6 CR)

Student will use the nursing process to implement the caregiver role with adult clients experiencing more complex physiologic needs. How disease states and co-morbidities affect clients' needs and their ability to meet those needs is explored. Clinical experience provides students the opportunity to demonstrate increasing organizational skills in their roles of caregiver and member of the discipline.

Prerequisites: LPN 131 and MOA 120

LPN 182 Role of the Practical Nurse (2 CR)

Review the ethical/legal responsibilities of the LPN along with the scope of practice of the LPN. Issues related to types of health care organizations, LPN organizations, continuing education and licensure covered. Students learn how to prepare for and take the NCLEX-PN examination. Information on home management, resume preparation and job seeking skills included. **Prerequisites:** LPN 180 and LPN 181

LPN 185 Nursing Care of Adults – II (5 CR)

Use the nursing process to implement the caregiver role with adult clients experiencing oncology, immune, renal, sensory, reproductive and musculoskeletal health conditions. Maslow's hierarchy of needs is utilized as the framework for understanding client responses to disease states. Emphasis placed on the special needs of elderly clients. Clinical experiences are designed to reinforce theory and demonstrate the roles of caregiver and member of the discipline.

Prerequisites: LPN 180 and LPN 181

LPN 186 Maternal Child Concepts (5 CR)

Extend the use of the nursing process to the childbearing and childrearing clients. Maslow's hierarchy of needs is utilized as a framework to care for the client who has a well-defined health care problem in a structured setting. **Prerequisites:** LPN 180 and LPN 181

MATHEMATICS (MAT)**MAT 010 Basic Mathematics (4 CR)**

(FORMERLY MTH 095)

This course provides the most fundamental support for students who need to develop skills in the arithmetic of whole numbers, fractions, decimals, signed numbers and metric measurement.

MAT 020 Pre-Algebra (4 CR)

(FORMERLY MTH 098)

This course reviews the arithmetic of fractions, decimals, and signed numbers with applications. Students will learn the mathematics of proportion and percent with applications, basic statistical graphs and charts, geometry and measurement (including the metric system), and introductory algebraic concepts. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old, the recommendation is course placement assessment be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 010*

MAT 031 Beginning Algebra (4 CR)

Students will build algebraic skills working with linear, polynomial, rational and radical expressions and equations. The course particularly emphasizes graphs and equations of lines, factoring techniques and methods of solving quadratic equations. The mathematics department recommends the prerequisite not be more than two years old. If the prerequisite is more than two years old the recommendation is the course placement assessment be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 020*

MAT 033 Algebra for Statistics (4 CR)

As an alternative pathway toward college-level mathematics, this course introduces fundamental algebra concepts within an underlying framework of statistics and mathematical modeling based on real-world data. Major concepts and themes include: problem solving and experimental design; unit analysis and error in measurement; dimensional analysis and scientific notation; representing data and coordinate graphing; introduction to basic descriptive statistics and probability theorems; basic geometric principles (area, volume, perimeter); arithmetic operations on numbers, ratios, summations, and percents; solution and manipulation of formulas; modeling relationships (linear and exponential regression); solving equations and inequalities; and function arithmetic and graphing. Appropriate technology includes a graphing calculator. The mathematics department recommends that

the prerequisite not be more than two years old. If the prerequisite is more than two years old, then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 020*

MAT 131 Intermediate Algebra (4 CR)

(FORMERLY MTH 131)

This course emphasizes simplifying expressions, solving equations, and graphing functions, including linear, quadratic, polynomial, rational, radical, exponential and logarithmic. Problem solving and mathematical modeling are integrated throughout. Appropriate technology includes a graphing calculator. The mathematics department recommends the prerequisite not be more than two years old. If the prerequisite is more than two years old the recommendation is the course placement assessment be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 031*

MAT 133 Introduction to Probability & Statistics (4 CR)

(FORMERLY MTH 133)

(SAME AS CIS 203 AND PSY 144)

This course is an introduction to experimental design, data representation, basic descriptive statistics, probability theorems, frequency distributions and functions, binomial and normal probability distributions and functions, probability density functions, hypothesis testing, statistical inference, Chi-square analysis, linear regression, correlation and application of the above in making informed, data driven decisions in real-world contexts. Both graphing calculators and computer-based statistical software (Microsoft® Excel) will be used. If the prerequisite is more than two years old, then the mathematics department recommends the course placement exam be taken or the prerequisite be retaken to ensure the success of the student.

Prerequisite: MAT 033* or MAT 131 or higher

MAT 135 Finite Mathematics (4 CR)

(FORMERLY MTH 145)

This course is for student whose programs do not require trigonometry (or the calculus sequence). The topics included are linear, exponential, quadratic, polynomial and logarithmic functions and models: systems of linear equations; linear regression; mathematics of finance and financial modeling; matrices; linear programming; permutations; combinations; probability theory; probabilistic simulations; decision theory; descriptive statistics; and Markov chains. The mathematics department recommends the prerequisite not be more than two years old. If the prerequisite is more than two years old the recommendation is the course placement assessment be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 131* or higher

MAT 141 Pre-Calculus (5 CR)

Major emphasis is on the concept of functions. Study polynomial, rational, exponential, logarithmic, trigonometric and inverse trigonometric functions, their properties, graphs, and related equations and applications. Additional topics include systems of equations, matrices, conic sections, sequences and series, and probability. A graphing calculator is required and used extensively. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old, then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student.

Prerequisite: MAT 131*

MAT 151 Calculus I (4 CR)
(FORMERLY MTH 151)

The major emphasis of this course is on the concept of functions. Study polynomial, rational, exponential, logarithmic trigonometric and inverse trigonometric functions, their properties, graphs and related equations and applications. Addition topics include systems of equations, matrices, and conic sections. A graphing calculator is required and used extensively. The mathematics department recommends the prerequisite not be more than two years old. If the prerequisite is more than two years old, the recommendation is the course placement exam be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 141*

MAT 154 Calculus II (5 CR)
(FORMERLY MTH 154)

This course explores the following topics: methods and applications of the derivative and integral for inverse trigonometric and hyperbolic functions, indeterminate forms, series and polar/parametric representation of functions. Graphing calculator required. The mathematics department recommends the prerequisite not be more than two years old. If the prerequisite is more than two years old, the recommendation is the course placement exam be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 151*

MAT 210 Foundations of Mathematics I (4 CR)
(FORMERLY MTH 210)

This course provides background material for students preparing to teach at the elementary level and emphasizes the structure and properties of the number system. It also covers concepts, models in algorithms for whole numbers, integers, fractions, decimals and percents. Some additional hours of on-site field work may be required. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old the recommendation is the course placement exam be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 131*

MAT 211 Foundations of Mathematics II (4 CR)
(FORMERLY MTH 211)

This course will provide the second semester of math content for elementary education majors. It is a continuation course for MAT 210; Foundations of Mathematics I. Topics include probability and statistics, geometry and measurement. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 210

MAT 251 Calculus III (4 CR)
(FORMERLY MTH 251)

Solid analytical geometry is integrated throughout this course covering the calculus of vector valued functions, multivariable functions, and vector fields with applications. Graphing calculator required. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 154

MAT 254 Differential Equations (4 CR)
(FORMERLY MTH 254)

Explore solutions of first order differential equations, linear differential equations with constant coefficients, variation of parameters, series solutions, Laplace transforms, eigenvectors and eigenvalues and application to solution of systems of linear first order equations. Graphing calculator required. The mathematics department recommends that the prerequisite not be more than two years old. If the prerequisite is more than two years old, then the recommendation is that the course placement exam be taken or the prerequisite be retaken to ensure the success of the student. **Prerequisite:** MAT 154

MANUFACTURING TECHNOLOGY (MFG)
MFG 101 Technical Problem Solving (2 CR)
(FORMERLY MFG 005)

This course provides instruction in a systematic approach to corrective action.

MFG 105 Blueprint Reading (2 CR)

This course will provide the student with a working knowledge and understanding of a variety of mechanical and electrical blueprints. Students will learn to recognize and identify symbols and specifications common to modern industrial blueprints. Topics will include: lines and symbols, views, form, position, title blocks, sketching, features and sections.

MFG 110 Work/Life Skills (2 CR)
(FORMERLY MFG 010)

This course will provide instruction in "Work Ethic" attitudes and habits necessary for success in the workplace. Training will be provided in written, verbal and non-verbal skills needed to communicate effectively in the workplace. Also covered will be the key elements of teamwork and practical approaches to working as part of a team.

MFG 115 GD & T (2 CR)

This course will provide the student with a working knowledge and understanding of dimensioning and tolerancing for specific design requirements on engineering drawings. Students are exposed to symbols, terms, datums, material conditions, form, profile, orientation, runout and location tolerances. Content includes use and understanding of the symbolic method of specification relating to tolerances being applied using ANSI Y14.5M.

MFG 120 Jig & Fixture Design (2 CR)

This course helps the student develop a thorough understanding and working knowledge of how and why jigs and fixtures are designed and built as they are. To do this the discussion starts with the fundamentals of jigs and fixtures and work through the various elements and considerations of design. Two fundamental tool design principles are constantly stressed: simplicity and economy. Design sketching is used to allow the student to demonstrate an understanding of the theories presented.

MFG 125 Die Theory & Design (3 CR)

A course designed to present the proper steps to designing a die, the ability to read die design layouts, tolerancing, and clearance fits as they apply to this topic. The student will also be provided with a basic understanding of the essential principles of cutting and forming operations as well as die components used for these operations. Also

presented will be how to repair and maintain the equipment common to the die industry.

MFG 150 Machining Theory & Methods (4 CR)

This course instructs students in machine tool principles and practices used in industry. Safety, terminology, manual milling, lathe, grinding, drilling, basic CNC, measurement and various shop procedures are used to complete projects. A working knowledge of hand and machine tools is achieved through a series of lectures, demonstrations and hands-on projects.

MFG 151 Basic Math (2 CR)

(FORMERLY MFG 050)

Review of basic arithmetic as required for manufacturing applications: addition, subtraction, multiplication and division of fractions and decimals. Students will work with problems involving percentages, ratios, proportions, square roots and tapers.

MFG 155 Algebra for Manufacturing (2 CR)

(FORMERLY MFG 055)

This course will cover basic elementary algebra as required for manufacturing applications. Topics will include: fundamental operation of positive and negative numbers, grouping symbols, algebraic axioms, equations, special products, factoring, quadratic equations and solutions of practical problems.

MFG 156 Geometry for Manufacturing (2 CR)

(FORMERLY MFG 060)

Review of arithmetic and algebra. Introductory geometry including: axioms, theorems, propositions, dealing with straight lines, triangles, polygons, and circles.

MFG 157 Trigonometry for Manufacturing (2 CR)

(FORMERLY MFG 065)

In this class students will cover the use of trigonometric tables, solution of right angle problems, solution of oblique triangle problems, use of sine, cosine, tangent and their reciprocals in the solution of unknown angles in practical shop problems.

MFG 160 Materials/Metallurgy (2 CR)

This course will provide the student with a working knowledge of the properties, uses and treatment methods used to alter the properties of commonly used metals and alloys. This knowledge may be applied to the design, selection, processing and testing of metal parts.

MFG 166 Precision Machining Methods (2 CR)

This course instructs students in machine tool principles and practices used in industry. Safety, terminology, material milling, lathe, grinding, drilling, basic CNC, measurement and various shop procedures are used to complete projects. A working knowledge of hand and machine tools is achieved through a series of lectures, demonstrations and hands-on projects. **Prerequisite:** ENG 085*

MFG 170 Hydraulics/Pneumatics (4 CR)

This course provides instruction in the basics of hydraulic and pneumatic systems including pumps, valving, control assemblies and actuators. Provides a general understanding of basic laws and formulas used in simple hydraulic circuits, including standard hydraulic symbols, and maintenance procedures.

MFG 172 CNC Theory (2 CR)

This course will review the development of computer numerical control (CNC), where CNC is used, terminology, and its advantages and shortcomings. Fundamentals of programming and tooling for basic CNC machining are also covered. **Prerequisite:** ENG 085*

MFG 174 CNC Programming (2 CR)

This course will provide students with a better understanding of set-up and operations of CNC machine tools. Special emphasis is placed on time-saving techniques in programming and operations. **Prerequisite:** MFG 172

MFG 180 EDM Theory (3 CR)

A course designed to present the machinist trainee with the fundamentals of electrical discharge machining.

MFG 185 Maintenance & Troubleshooting (3 CR)

Covers methods and means used to troubleshoot and maintain machines typically found in a manufacturing environment. Problem symptoms, problem identification, maintenance records and systems will be covered.

MFG 190 Drive Components & Bearings (2 CR)

This course instructs students in the principles, applications, and maintenance of various types of bearings and mechanical couplings, including ball and roller, powdered metal, nonmetallic, hydrostatic bearings, couplings, such as shear, torque limiting, floating and insulated, speed reducers, seals and gears.

MFG 200 Basic Gauges & Measurement (2 CR)

This course provides instruction in inspection tools and inspection procedures commonly used in manufacturing.

MFG 210 Moldmaking (3 CR)

(FORMERLY MFG 015)

A course designed to present the moldmaker trainee with the fundamentals of mold design and construction.

MFG 215 Robotics & Material Handling (2 CR)

(FORMERLY MFG 020)

This course provides an introduction to automated materials handling/production equipment and the role of the computer/robotics in modern manufacturing systems.

MFG 255 Basic PLC (4 CR)

This is a basic programmable controllers course designed for apprentices and skilled trades trainees looking at the history, characteristics, application and limitation of PLCs. Numeration systems, binary-coded decimals, ASCII, gray code and Boolean logic is studied. Additional study includes input/output devices, processing and programming functions, program development, documentation, start-up and troubleshooting.

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

MEDICAL INSURANCE CODER/BILLER (MIC)

MIC 101 Basic Coding (3 CR)

This course is an introduction to basic coding principles utilizing the International Classification of Diseases, Clinical Modification Coding System, with an emphasis on ICD-CM conventions, coding steps and guidelines, V and E codes, symptoms, signs, and ill-defined conditions and use of the medical record as a source for coding. The Uniform Hospital Discharge Data Set (UHDDS) and guidelines for coding neoplasms, injuries, burns, poisonings, adverse effects of drugs, and complications of surgery and medical care are also included.

Prerequisites: BIO 132 or BIO 155 or BIO 253 and BIO 254 or MOA 141

MIC 150 CPT Coding (3 CR)

This course provides an introduction to the study of Current Procedure Terminology (CPT) Coding. Simulation of outpatient coding, including ambulatory surgery, diagnostic testing and procedures, physician services using patient records, and encoder software are essential parts of this course. Emphasis is placed on the use of official CPT coding guidelines, compliance and Ambulatory Payment Classification (APC) calculations. **Prerequisites:** BIO 132 or BIO 155 or BIO 253 and BIO 254 or MOA 141

MIC 201 Billing Systems (3 CR)

This course provides an introduction to the study of the billing and reimbursement processes of hospitals and ambulatory health care settings including: scheduling, registration, insurance verification, fee schedules, encounter forms, charge capturing, billing process, reimbursement process, patient payment and collections. Computer laboratory work with billing software is included.

Prerequisites: CIS 101, MIC 101 and MIC 150

MIC 211 Advanced Coding (3 CR)

This course serves as a continuation of basic ICD-CM Coding with application of guidelines in more advanced case scenarios. The content includes simulation of inpatient and outpatient coding of diseases, procedures and services of all body systems using patient records and encoder software. Emphasis is placed on the use of official coding guidelines, compliance, and DRG calculations.

Prerequisites: MIC 101, MIC 150 and NUR 121

MIC 245 Internship/Externship (3 CR)

A supervised learning experience of the health care field and health records with emphasis on functions of the health information department, content and analysis of health records at affiliated facilities designed to give students a clinical education experience in a health care setting, a minimum of 150 hours. **Prerequisites:** MIC 201, MIC 211, MOA 241 and MOA 242

MEDICAL ASSISTANT (MOA)

MOA 112 Insurance, Reports, Law & Ethics (3 CR)

Principles and concepts of medical law and bioethics, as well as an overview of health care financing through third party payers are the main focus of this course. Topics include: medical practice management, medical law, liability and malpractice prevention, health information management, HIPAA and confidentiality of patient information, employment practices, consent, billing collections, insurance and government healthcare programs, codes of ethics and contemporary bioethical issues.

MOA 114 Intro to Clinical Procedures (3 CR)

In this course, through two hours of lecture and three hours of lab per week, students will be given an introduction to the medical assistant profession, learn aseptic techniques, receive OSHA & Blood Borne Pathogen Training, and become familiar with proper documentation and the Electronic Health Training. This course will also begin teaching students how to conduct patient interviews, take a patient history, perform vitals, and perform inventory and equipment maintenance.

Prerequisites: CIS 101, ENG 131, MAT 031* or higher, MOA 120, MOA 141 and MOA 112

MOA 116 Physical Examinations & Procedures (3 CR)

Through two hours of lecture and three hours of lab per week students will learn clinical practices that will include: assisting patients with special needs, assisting with the physical exam, eye and ear procedures, EKG, pulmonary testing, EOBT/Colonoscopy, diagnostic imaging, patient education and community resources.

Prerequisites: CIS 101, ENG 131, MAT 031* or higher, MOA 120, MOA 141, MOA 112 and MOA 145

MOA 120 Medical Terminology (3 CR)

A programmed learning word building system approach is used to teach basic medical terminology word roots, prefixes, suffixes, language origins, plural formation and grammar rules are studied. Emphasis is placed on word building, definitions, spelling, usage, pronunciation and acceptable medical abbreviations. **Prerequisite:** ENG 085*

MOA 141 Body Structure & Function (4 CR)

(SAME AS LPN 141)

This course is a body systems approach to the body structures and functions providing a foundation of understanding normal and abnormal body functions and disease processes. **Prerequisite:** ENG 085*

MOA 145 Normal/Therapeutic Nutrition (3 CR)

(SAME AS LPN 145 AND NUR 207)

Basic nutritional concepts are presented with emphasis on application to patient care. Selected nutritional disorders and fundamentals of diet therapy are also included. **Prerequisite:** ENG 085*

MOA 214 Specialty Exams and Treatments (3 CR)

Through two hours of lecture and three hours of lab per week, the student will learn clinical practices, procedures and routines including: well child examinations and immunizations, OB/GYN, male health, geriatrics, orthopedics and administration of medications.

Prerequisites: MOA 114, MOA 116 and LPN 132 or NUR 121

MOA 216 Surgical Procedures and Lab Testing (3 CR)

Through two hours of lecture and three hours of lab students will learn and become competent in minor office surgery and surgical asepsis, CLIA laws, lab specimen collection and medical lab testing, microscopy, phlebotomy and professional and personal emergency preparedness.

MOA 240 Medical Office Procedures (3 CR)

Through written and computerized medical office simulations the student will learn basic concepts and medical administrative practices. Topics include: medical office health information management, oral and written communication skills, patient account management, peg-board accounting, electronic transmission of data, machine transcription of dictation, preparation of correspondence, understanding document

content and use, reception and telephone etiquette, appointment scheduling and legal issues.

Prerequisites: CIS 101, ENG 131, MOA 112 and MOA 120

MOA 241 Medical Records (3 CR)

Study principles and practices in health information management as it relates to documentation for medical billing. Introduction to ICD and CPT coding, private insurance, and government program claim processing, legal and healthcare finance issues, HIPAA and release of information guidelines are emphasized.

Prerequisites: MOA 120 and MOA 112

MOA 242 Advanced Medical Billing (3 CR)

Designed to teach advanced skills in medical insurance billing. Correct preparation of major carrier claims including use of modifiers and rebilling skills emphasized.

Prerequisites: ACC 216 or ACC 231 and MOA 241

MOA 245 Internship/Externship (3 CR)

A non-paid externship experience in a medical setting performing administrative and clinical duties as assigned. Weekly seminar meetings include: guidance and discussion of placement experiences, documentation and evaluation of externship activities and job search skills. **Prerequisite:** MOA 216

MOA 251 Medical Assistant Capstone (3 CR)

This capstone medical assistant course will assist the graduate in preparation to sit for the national certification exam. Students will also compile a program portfolio along with creating an e-Portfolio to prepare for securing a position in the field. Successful completion of this course is required for graduation. **Prerequisite:** MOA 216

MILITARY SCIENCE (MSL)

MSL 101 Foundations of Officership (2 CR)

This course introduces students to issues and competencies that are central to a commissioned officer's responsibilities. Establishes framework for understanding officership, leadership and Army values. Includes life skills such as physical fitness training and time management.

MSL 102 Basic Leadership (2 CR)

This course establishes a foundation of basic leadership fundamentals such as problem solving, communications, briefing, effective writing, goal setting, techniques for improving listening and speaking skills, and introduction to counseling, additional physical fitness training and time management training. **Prerequisite:** MSL 101

MSL 201 Individual Leadership Studies (2 CR)

Students identify successful leadership characteristics through observation of others and self through experiential learning exercises. Students record observed traits (good and bad) in a dimensional leadership journal and discuss observations in small group settings, additional physical fitness training and additional time management training. **Prerequisite:** MSL 102

MSL 202 Leadership and Teamwork (2 CR)

Students examine how to build successful teams, various methods for influencing action, effective communication in setting and achieving goals, the importance of timing the decision, creativity in the problem solving process and obtaining team buy-in through immediate feedback and additional physical fitness training. **Prerequisite:** MSL 201

MUSIC (MUS)

MUS 103 Keyboard I (2 CR)

Sequence of courses that teach music reading and performance on piano. The course stresses functional keyboard skills.

MUS 104 Keyboard II (2 CR)

Sequence of courses that teach music reading and performance on piano. The course stresses functional keyboard skills. **Prerequisite:** MUS 103

MUS 105 Keyboard III (2 CR)

Sequence of courses that teach music reading and performance on piano. The course stresses functional keyboard skills. **Prerequisite:** MUS 104

MUS 106 Keyboard IV (2 CR)

Sequence of courses that teach music reading and performance on piano. The course stresses functional keyboard skills. **Prerequisite:** MUS 105

MUS 107 Guitar I (2 CR)

Beginner class instruction in playing folk and classical guitar. Each student provides own guitar.

MUS 108 Guitar II (2 CR)

Continuation of MUS 107. **Prerequisite:** MUS 107

MUS 123 Voice Class (2 CR)

Designed to aid in vocal techniques and develop stage presence. Topics include breathing techniques, vocal evaluation, developing a personal style and working with a microphone. May be taken two times for credit.

MUS 124 Advanced Voice Class (2 CR)

Sequence of Voice Class, MUS 123. Class continues the development of vocal technique, with emphasis on performance. May be taken two times for credit. **Prerequisite:** MUS 123

MUS 129 Community Concert Band (1 CR)

Study and performance of concert band music performances. Admission with department permission required. May be taken four times for credit.

MUS 130 Music of Non-Western Cultures (3 CR)

Discovering the music of non-Western cultures through lecture and directed listening. **Prerequisite:** ENG 085*

MUS 131 Understanding Music (3 CR)

Lecture and directed listening on the elements, forms, and historic chronology of Western music. **Prerequisite:** ENG 085*

MUS 132 History of American Popular Music (3 CR)

Students explore the development of popular music in America and focus on the musical, social and economic influences of commercial music in an historical context.

MUS 133 Music Education (3 CR)

Elementary education student is taught the fundamentals of music and then given practical experience in teaching, creating, and accompanying songs and how to enhance an elementary classroom with music.

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

MUS 135 African Drum Ensemble (2 CR)

Performance of African (Ashante) drums. Rehearsals with cultural exploration leading to performances of the music. May be taken four times for credit.

MUS 136 Brass Ensemble (2 CR)

Performance of music for brass chamber ensembles. May be taken four times for credit.

MUS 137 Jazz Ensemble (2 CR)

Performance of jazz with emphasis on improvisational skill development. May be taken four times for credit.

MUS 138 Woodwind Ensemble (2 CR)

Performance of woodwind chamber ensemble music. May be taken four times for credit.

MUS 151 Music Theory I (4 CR)

Study of scales, key signatures, chord structure, intervals, chord progression and non-harmonic tones. This course includes sight singing, keyboard harmony and ear training.

MUS 152 Music Theory II (4 CR)

Continued study of scales, key signatures, chord structure, intervals, chord progression and nonharmonic tones. This course includes sight singing, keyboard harmony and ear training. **Prerequisite:** MUS 151

MUS 161 Audio Production (3 CR)

Course covers recording technique, the studio, multi-track recording, mixing, rhythm tracks, lead and instrumental overdubs, guide tracks, mix down, editing, and sound reinforcement.

MUS 167 Applied Music (1 CR)

Private instrument lessons are open to all students at the start of the semester. Students contact the music department which assists in locating a private instructor. Students pay for both lessons and college credit.

MUS 168 Applied Music (1 CR)

Private instrument lessons are open to all students at the start of the semester. Students contact the music department which assists in locating a private instructor. Students pay for both lessons and college credit. **Prerequisite:** MUS 167

MUS 177 Applied Music (2 CR)

Private instrument lessons are open to all students at the start of the semester. Students contact the music department which assists in locating a private instructor. Students pay for both lessons and college credit. **Prerequisite:** MUS 168

MUS 178 Applied Music (2 CR)

Private instrument lessons are open to all students at the start of the semester. Students contact the music department which assists in locating a private instructor. Students pay for both lessons and college credit. **Prerequisite:** MUS 177

MUS 190 Broadway Revue (1 CR)

Study and perform Broadway, jazz and popular vocal literature. The performance aspect includes singing, stage presence, staging and movement. This ensemble rehearses a total of three to four hours per week. Audition is required. May be taken four times for credit.

MUS 267 Applied Music (1 CR)

Private study on all instruments is open to all students. This is a requirement for music majors pursuing a bachelor's degree. All students must register with music department at the beginning of each semester. Recital and jury required. **Prerequisite:** MUS 168 or MUS 178

NATURAL SCIENCE (NSC)
NSC 131 Contemporary Science (4 CR)

An interdisciplinary course that introduces the nature of science as a process. Particular topics from biology, chemistry, physics, geology and astronomy covered with an emphasis on critical thinking and evaluating evidence to examine competing theories. The interrelationships and interaction of the sciences are stressed, as is the relationship of science and technology. This course is ideal as a first science course for students whose science background is minimal, who are anxious about science, or who have not had a science course for several years. Course includes a laboratory component.

Prerequisites: ENG 090* and MAT 020* or higher

NURSING (NUR)
NUR 101 Fundamentals of Nursing (6 CR)

Become familiar with the nursing process as it relates to universal self-care requisites. Assistance is provided in acquiring and demonstrating competency in basic nursing skills. Emphasis is placed upon assessing self-care agency and therapeutic self-care demand. That information is then used to devise appropriate nursing diagnosis, to plan, implement and evaluate a plan of care for clients requiring nursing actions to meet their universal self-care demands. Laboratory and clinical experiences are included.

NUR 103 Introduction to Professional Nursing (4 CR)

Provides a foundation in the scientific and social dimension of nursing as a discipline and a health profession. Examine the historical development of nursing and its impact on contemporary nursing. Cultural variables and personal values examined by the student. The societal context of nursing is reviewed, providing the student with an appreciation of the health care system, with particular emphasis on legal and ethical frameworks.

NUR 121 Pharmacology (3 CR)

Students are introduced to basic knowledge and skills needed to safely administer medications to clients with self-care needs. This course includes medication action, use, side effects, nursing implications and client education for major drug groups. **Prerequisites:** BIO 132 or BIO 253 and BIO 254 or LPN 141 or MOA 141 and MAT 033* or higher.

NUR 124 Transitions Bridge & Care of the Family (4 CR)

In this course exploration of the legal and professional scope of practice and the transition into the registered nurse role will be discussed. Concepts of critical thinking, time management, and study skills will be explored. Students will become familiar with the nursing process as it relates to self-care theory and as a framework to develop comprehensive understanding of supportive-educative care of the childbearing client/family according to best evidence-based practices. The focus will be on the physiological aspects of the reproductive process and maternity cycle, including fetal development. Physical assessment and select skills will be reviewed. Laboratory and hospital experiences will be incorporated. Acceptance into the LPN to ADN program required for registration in this course.

Prerequisite: Admission into the LPN-ADN program

NUR 170 Self-Care (1 CR)

Students will be introduced to Orem's theory of self-care. The theory of self-care deficits and theory of nursing systems discussed as they relate to the clients, as well as to the students. Students use a variety of methodologies, which will then be a part of their repertoire of self-care knowledge and skills.

NUR 171 Supportive Educative Nursing (4 CR)

This course teaches students to apply the nursing process to promote self-care for adults with common, well-defined supportive educative needs. Clinical experience designed to reinforce theory is included.

Prerequisites: NUR 101, NUR 121, and NUR 170

NUR 172 Pathophysiology (4 CR)

Study of human diseases and the mechanisms that govern them. Addresses etiology, clinical presentation and appropriate treatment of disease processes and nursing action. **Prerequisites:** BIO 155 or BIO 253 and BIO 254 and NUR 101 or NUR 124

NUR 176 Family I - Maternal Nursing (4 CR)

Maternal Nursing is focused on the physiological aspects of the reproductive process and maternity cycle, including fetal development. The curriculum utilizes the nursing process as a framework to develop comprehensive understanding of supportive-educative care of the childbearing client/family according to the best evidence-based practices, with attention to leading health indicators identify through national family planning initiatives. This course includes clinical experiences designed to reinforce theory.

Prerequisites: NUR 101, NUR 170, NUR 245 and PSY 252

NUR 207 Normal/Therapeutic Nutrition (3 CR)

(SAME AS MOA 145 AND LPN 145)

Basic nutritional concepts are presented with emphasis on application to patient care. Selected nutritional disorders and fundamentals of diet therapy are also included. **Prerequisite:** ENG 085*

NUR 242 Physical Assessment (1 CR)

Designed for nurses to learn physical assessment skills including inspection, palpation, percussion and auscultation. Included are interviewing techniques and assessment of cardiac, musculoskeletal, gastrointestinal, neurological and respiratory systems.

NUR 245 Health Assessment (3 CR)

This course is designed to provide an organized approach to client interviewing, health history information and documentation in the assessment process. A systematic method to physical assessment utilizing inspection, palpation, percussion and auscultation for all body systems is conceptualized and practiced in a controlled lab setting.

NUR 246 Holistic Health Assessment (1 CR)

This course is a companion to NUR 245 for students enrolled in the JCC/UM/BSN transfer program. The focus of the course is to expand upon NUR 245 concepts. Students will synthesize the assessment of the individual within the context of the family and the communities within which they live. Emphasis is on the assessment of physical, developmental, psychosocial (cognitive, affective and behavioral), cultural and spiritual dimensions of the client and/or families as well as factors that influence behavioral responses to health and illness across

the life span. Attention will be placed on ethical dilemmas that arise during a comprehensive assessment process.

Prerequisite: Admission into the JCC/UM/BSN transfer program

NUR 270 Partially Compensatory (4 CR)

Apply the nursing process to promote self-care for clients with chronic health needs. Explores problems of the "partially compensatory" elderly client. Clinical experience is provided in the hospital and community.

Prerequisites: NUR 171, NUR 172, and NUR 120 or NUR 176 or NUR 124 and NUR 172

NUR 272 Mental Health (5 CR)

Explore learning experiences that promote satisfactory assimilation of fundamental mental health and mental illness concepts in their delivery of the nursing process with clients and family systems. A clinical component is provided for students to develop mental health nursing care skills.

Prerequisites: NUR 171, NUR 172, and NUR 120 or NUR 176 or NUR 124 and NUR 172

NUR 274 Leadership (4 CR)

The student will examine the role change from student to graduate nurse, the nurse agent's role in a leadership position, as well as responsibility, accountability and liability in a health care setting, and current health care trends which impact the client's self care. The student will continue skill development through the clinical experience.

Prerequisite: NUR 275

NUR 275 Wholly Compensatory Care of the Adult (4 CR)

Utilize the nursing process to provide wholly compensatory care for clients. Caring for clients requiring complex nursing interventions, medical regimens and includes clinical in acute care settings.

Prerequisites: NUR 270, NUR 272 and NUR 276

NUR 276 Family II-Nursing of Children (4 CR)

Students build upon previously learned concepts of Orem's Self-Care Model as it pertains to the role of the Maternal Child nurse and Family Centered Care (FCC) provider. Students apply concepts of critical thinking to analyze sociocultural factors that influence growth and development in children. Utilizing the nursing process as a theoretical framework to potentiate wellness within the child at each developmental stage; students explore the value of active partnerships with client/families in promoting health and wellness to both hospitalized and community care recipients. This course includes clinical experiences designed to reinforce theory.

Prerequisites: NUR 171, NUR 172 and NUR 176 or NUR 124 and NUR 172

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

PHILOSOPHY (PHL)

PHL 231 Introduction to Philosophy (3 CR)

In this course, you will be exposed to some of the major figures in Western philosophy, and through them, some of the most important philosophical questions. You will discuss questions such as: Is ethics all a matter of opinion? What is the good life for human beings? When is the state justified in using coercive power? What is the nature of knowledge, and how do we get knowledge? What is the nature of reality? Can we prove the existence of God?

Prerequisites: ENG 085* and ENG 090*

PHL 232 Logic (3 CR)

This course gives you a background in both informal and formal logic. Informal logic, which is derived from everyday types of discussions and arguments, is dealt with first. Topics included are the nature of arguments in general, statistical arguments, and fallacies (bad arguments). Formal logic involves dealing with arguments in an artificial language and is the ancestor of digital computers and every computer programming language. You will learn how to manipulate the artificial language and construct relatively simple proofs.

Prerequisites: ENG 085* and ENG 090*

PHL 236 Ethics (3 CR)

In this course, students will examine various questions concerning the status of ethical judgments and become familiar with certain approaches to ethics that have been influential in Western philosophy, including Kantian ethics, utilitarianism and virtue-based ethical theories. In addition, students will consider how these approaches can be employed in ethical decision-making. **Prerequisite:** ENG 131

PHL 243 Great World Religions (3 CR)

Students examine the literature and historical settings of great world religions. The relationship of contemporary thought is considered for representative groups. **Prerequisites:** ENG 085* and ENG 090*

PHYSICS (PHY)

PHY 131 Conceptual Physics (4 CR)

Become familiar with basic concepts used in physics to describe and explain various physical phenomena. The course covers the following topics: kinematics (the description of motion); mechanics (the study of force, momentum, and energy); the behavior of solids, liquids and gases; temperature and heat; waves and sound; electricity and magnetism; and optics. The course is designed to familiarize the student with the basics of physics using a minimum of mathematics. Course includes a laboratory component.

Prerequisites: ENG 085* and MAT 020* or higher

PHY 151 Astronomy (4 CR)

A one semester conceptual astronomy course for non-science majors. This is a survey course that focuses on four broad content categories: motions of the sky, the solar system, light and stars, and the universe. The emphasis of the course is on critical thinking about specific topics in these categories. The course has an associated laboratory in which students run experiments to verify the concepts presented. The mathematical skills necessary for this course include working with ratios, rates, scaling, unit conversion, percentages, exponents, graphing, basic geometry and substitution into formulas.

Prerequisites: ENG 085* and MAT 031* or higher

PHY 231 College Physics I (4 CR)

Pre-professional and engineering technology students explore kinematics, mechanics, dynamics, thermodynamics, acoustics and general wave motion. Course includes a laboratory component.

Prerequisite: MAT 131 or higher

PHY 232 College Physics II (4 CR)

Students cover topics in electricity, magnetism and modern physics and is a continuation of PHY 231. Course includes a laboratory component.

Prerequisite: PHY 231

PHY 251 Modern University Physics I (5 CR)

Students cover classical mechanics, thermodynamics and wave motion. This course should be elected by all science and engineering students. Course includes a laboratory component.

Prerequisite: MAT 151 or higher

PHY 252 Modern University Physics II (5 CR)

Students cover topics in classical electricity and magnetism, optics, special relativity and modern physics. A continuation of PHY 251. Course includes a laboratory component. **Prerequisite:** PHY 251

POLITICAL SCIENCE (PLS)

PLS 141 American National Government (3 CR)

Develops a systematic framework for the interpretation of political activity in the United States. Numerous models explain the theoretical foundations of government and the decision making process.

Prerequisites: ENG 085* and ENG 090*

PLS 262 International Relations (3 CR)

Survey contemporary world affairs and examine the nation-state system, the struggle for power, and factors creating harmony and hostility among states. **Prerequisites:** ENG 085* and ENG 090*

PROCESS TECHNOLOGY (PTC)

PTC 100 PTEC I-Introduction to Process Technology (3 CR)

This course introduces the student to the process technology industry. An overview is provided covering the history of the process industry and the role of the process operator/technician within the industry. Additional topics covered include computer familiarity, application of basic physics and chemistry within the process industries, product chemistry, unit operations, process flows, general safety and environmental responsibilities.

Prerequisites: ENG 085,* ENG 090* and MAT 020*

PTC 110 PTEC II-Process Technology Equipment (3 CR)

This course introduces the student to equipment used in the process technology industry. Topics covered include types of equipment and their application, theory of operation, components, maintenance and troubleshooting, and the health, safety and environmental concerns associated with each. **Prerequisites:** PTC 100

PTC 120 PTEC III-Process Technology Systems (3 CR)

This course introduces the student to systems used in the process technology industry facilities. Topics covered include utility systems, material handling and storage systems, processing systems, and monitoring systems. Discussion of each system will include purpose, equipment, theory of operation, control variables, safety, health and environmental concerns, troubleshooting and optimization.

Prerequisite: PTC 110

PTC 200 PTEC IV-Process Technology Operations (3 CR)

This course provides an overview of the field of operations within the process industry. Students will use existing knowledge of equipment and systems to understand the operation of an entire unit. Students will study concepts related to commissioning, normal start-up, normal operations, normal shutdown, turnarounds, and abnormal situations, as well as the process technician's role in performing the tasks associated with these concepts within an operating unit.

Prerequisite: PTC 120

PTC 210 PTEC V-Safety, Health & Environment (3 CR)

This course provides an overview of the field of safety, health & environment within the process industry. The student will be introduced to various types of plant hazards, safety & environmental systems and equipment, and the regulations under which plants are governed.

Prerequisite: PTC 120

PTC 220 PTEC VI-Quality Systems (3 CR)

This course addresses the field of quality within the process industry. Many process industry related quality concepts will be presented including operating consistency, continuous improvement, plant economics, team skills and statistical process control.

Prerequisite: PTC 120

PTC 230 PTEC VII-Instrumentation (3 CR)

This course introduces the field of instrumentation and covers process variables and the various instruments used to sense, measure, transmit and control these variables: continuous improvement, plant economics, team skills and statistical process control. **Prerequisite:** PTC 120

PSYCHOLOGY (PSY)**PSY 140 Introduction to Psychology (4 CR)**

Overview of the field of psychology, including learning, development, emotion, motivation, personality, abnormal behavior and psychotherapy.

Prerequisites: ENG 085* and ENG 090*

PSY 144 Introduction to Probability & Statistics (4 CR)

(SAME AS MAT 133 AND CIS 203)

This course is an introduction to experimental design, data representation, basic descriptive statistics, probability theorems, frequency distributions and functions, binomial and normal probability distributions and functions, probability density functions, hypothesis testing, statistical inference, Chi-square analysis, linear regression, correlation and application of the above in making informed, data driven decisions in real-world contexts. Both graphing calculators and computer-based statistical software (Microsoft® Excel®) will be used. If the prerequisite is more than two years old, then the mathematics department recommends the course placement exam be taken or the prerequisite be retaken to ensure the success of the student.

Prerequisite: MAT 033* or MAT 131 or higher

PSY 152 Social Psychology (3 CR)

(SAME AS SOC 152)

Theoretical synthesis of social influences, including attitude formation, social and cognitive development, aggression, prosocial behavior, prejudice, conformity, culture and gender differences, influences, group processes and interpersonal attraction.

Prerequisite: PSY 140 or SOC 231

PSY 161 Introduction to Counseling (3 CR)

Learn basic counseling microskills against a backdrop of comparative theories and systems of counseling. Ethical, legal and practical issues included. **Prerequisite:** PSY 140

PSY 222 Applied Behavior Analysis (3 CR)

Methods and techniques for changing behaviors based on learning principles. Includes modeling, simulation, role playing, operant, aversion, fear reduction and self-management methods. **Prerequisite:** PSY 140

PSY 245 Infancy and Childhood (3 CR)

Physical, mental, emotional and social development of the human individual from conception through childhood. Genetic, prenatal and postnatal influences on development are examined. Cognitive and social learning theories are used to integrate research findings.

Prerequisite: PSY 140

PSY 251 Abnormal Psychology (3 CR)

Survey of those behaviors that do not fit the norm of society, including causal factors, specific disorders and treatment methods.

Prerequisite: PSY 140

PSY 252 Developmental Psychology (3 CR)

Principles and theories of human development from conception through adulthood, with applications to foster optimal development. Cognitive, behavioral and social learning theories are used to integrate research findings. **Prerequisite:** PSY 140

PSY 256 Educational Psychology (3 CR)

Application of psychological theories to the teaching-learning process. Principles of cognitive and social development discussed along with discipline, motivation and assessment and evaluation.

Prerequisites: ENG 085* and ENG 090*

PSY 290 Human Sexuality (3 CR)

Physiological, psychological and sociocultural influences on human sexuality, including gender, sexual maturation and behavior, identity, values, orientation, relationships, sexually transmitted diseases, sexual disorders and therapy. **Prerequisite:** PSY 140

RADIOGRAPHY (RAD)**RAD 120 Radiologic Orientation (2 CR)**

This course orientates students to the field of radiography. Students are prepared to enter the hospital setting. Hospital personnel, departments, history, and means of operation are discussed. The moral, legal, and professional rights and responsibilities of a radiographer are a focus.

RAD 121 Radiographic Positioning I (4 CR)

Students learn to formulate and apply a working knowledge of radiographic positioning and human anatomy. The student will learn to select and employ the correct procedure process during a radiographic examination and prepare to implement this knowledge in a clinical setting. The course covers anatomy and positioning of the chest, upper airway, abdomen, upper & lower extremity. Students will actively practice in a lab setting with a lab instructor.

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

RAD 125 Radiographic Positioning II (4 CR)

Students will continue to formulate and apply a working knowledge of radiographic positioning and human anatomy. The students will learn to select and employ the correct procedure process during a radiographic examination and prepare to implement this knowledge in a clinical setting. This course will cover the bony thorax, spine, head, gastrointestinal tract, as well as urinary imaging. **Prerequisite:** RAD 121

RAD 126 Clinical Practicum I (3 CR)

Clinical experience is provided in this course under the direct supervision of ARRT-registered radiographers. Clinical competencies will be given corresponding to the exams completed in the classroom. Performance standards are used to evaluate the student's progress. **Prerequisite:** RAD 121

RAD 160 Fundamentals of Radiologic Science (4 CR)

This course will teach the student about the physics of radiology. The basic principles of electricity, magnetism and electromagnetic energy will be covered. This knowledge will help to provide an understanding of how a quality diagnostic radiograph is created, while taking into account safe exposure factors for a patient. Students will understand how x-rays are created and how they interact with tissues and matter. A clear understanding of the fundamentals of physics is the starting point for becoming a superior radiologic technologist. **Prerequisite:** RAD 126

RAD 161 Radiographic Exposure (4 CR)

This course will study in depth the four radiographic qualities of density, contrast, recorded detail and distortion. Factors that affect the four radiographic qualities will be discussed. Students will learn mathematical formulas that aid them in better understanding these factors. Lab and group performance will be utilized to help students learn and understand the content. **Prerequisite:** RAD 126

RAD 162 Clinical Practicum II (3 CR)

Continuation of Clinical Practicum I. **Prerequisite:** RAD 126

RAD 211 Clinical Practicum III (6 CR)

Continuation of Clinical Practicum II. **Prerequisite:** RAD 162

RAD 212 Special RAD Studies (4 CR)

This course will provide a detailed study of special radiographic procedures. The course will discuss the role of the technologist, equipment required in various procedures, and concerns of the technologist when performing these exams. The course also discusses radiation protection and health physics. This course will provide direction to students for registry preparation. **Prerequisite:** RAD 160

RAD 213 Radiobiology (2 CR)

Students review the basics of cell biology and study the basic biologic interaction of radiation. That study will include cellular and tissue response to radiation, as well as radiation pathology, the total body radiation response, and the late effects of radiation. It will conclude with a discussion of clinical radiobiology that includes diagnostic radiology, nuclear medicine and therapeutic radiology. **Prerequisite:** RAD 211

RAD 214 Clinical Practicum IV (5 CR)

Continuation of Clinical Practicum III. **Prerequisite:** RAD 211

RAD 218 Radiographic Pathology (3 CR)

This course will introduce the student radiographer to pathology. Students will learn about how differing pathologies occur and how they present themselves radiographically. The course will also discuss how differing pathologies affect the radiographic procedure itself. **Prerequisite:** RAD 213

RAD 219 Clinical Practicum V (5 CR)

Continuation of Clinical Practicum IV. **Prerequisite:** RAD 214

RESPIRATORY CARE (RES)
RES 100 Respiratory Care Techniques I (7 CR)

This classroom and laboratory course is an introduction to the duties and responsibilities of respiratory care practitioners. Topics covered include a review of physical science, cardiopulmonary anatomy and physiology, cardiopulmonary resuscitation, basic nursing skills, medical gas and aerosol administration, employee health and safety, pulmonary medications, and an orientation to clinical sites.

RES 104 Cardiopulmonary Assessment (2 CR)

This course is an introduction to basic physical and laboratory assessment of cardiopulmonary patients. Topics include basic pulmonary function and medical lab values, blood gas analysis, and bedside patient assessment equipment and techniques.

RES 110 Respiratory Care Techniques II (5 CR)

This classroom and laboratory course continues the introduction to basic duties of respiratory care practitioners. Emphasis will be placed on patient assessment, basic therapy modalities, airway management, cardiopulmonary diagnostic equipment and techniques and an introduction to continuous mechanical ventilation.

Prerequisites: RES 100 and RES 104

RES 114 Cardiopulmonary Pathophysiology I (2 CR)

The student in this course will be able to describe the etiology, pathophysiology, clinical manifestations, diagnosis and management of a variety of cardiopulmonary diseases and processes. Using a series of case studies, student will continue to develop assessment skills and apply clinical practice guidelines to develop care plans for patients with cardiopulmonary disease. **Prerequisites:** RES 100 and RES 104

RES 115 Clinical Practice I (5 CR)

This course provides a hospital experience in which previously acquired classroom theory and laboratory skills can be exercised. Skills practiced include those associated with patient respiratory assessment, oxygen therapy, a wide range of bronchopulmonary hygiene therapies, and equipment processing. **Prerequisites:** RES 100 and RES 104

RES 120 Respiratory Care Techniques III (6 CR)

Mechanical ventilation topics are continued in this classroom and laboratory course. Topics presented include volume pre-set and pressure pre-set ventilator equipment and basic ventilator application and management techniques for adult patients.

Prerequisites: RES 110 and RES 114

RES 124 Respiratory Pharmacology (2 CR)

This course provides an overview of general pharmacology with an emphasis on drugs used in the critical care management of cardiopulmonary conditions.

Prerequisites: RES 110, RES 114 and RES 115

RES 125 Clinical Practice II (2 CR)

This clinical course provides three types of experience for the respiratory therapy student. First, there will be a continuation of basic respiratory care modalities from the previous semester. Second, the diagnostic areas of basic pulmonary function testing, arterial blood gas puncture and analysis, and 12-lead electrocardiography will be introduced. Third, the student will receive an orientation to volume control ventilation in the adult ICU environment. In addition, weekly clinic seminars will be held on campus to facilitate student learning. **Prerequisites:** RES 110, RES 114 and RES 115

RES 126 Cardiopulmonary Pathophysiology II (2 CR)

The student in this course will be able to describe the etiology, pathophysiology, clinical manifestations, diagnosis and management of a variety of advanced cardiopulmonary diseases and processes. Using a series of case studies, students will continue to develop assessment skills and apply clinical practice guidelines to develop care plans for patients with cardiopulmonary disease. **Prerequisite:** RES 114

RES 203 Diagnostic Theory (4 CR)

This course covers pulmonary function testing and blood gas analysis equipment and procedures in the laboratory and clinical settings and includes an emphasis on the interpretation of test results from this equipment. Ventilator graphics, an extension of PFT graphics, and their interpretation will be presented. Additionally, equipment and procedures in common use in the areas of ABG laboratories, cardiopulmonary stress testing, pulmonary rehabilitation, and pulmonary home care will be presented. **Prerequisites:** RES 120, RES 125 and RES 126

RES 205 Clinical Practice III (5 CR)

This clinical course allows students to assist in the pulmonary management of adults on mechanical ventilation. An integrated approach to patient care will be stressed through accurate patient assessment and application of various equipment and therapies. Students will also function as members of the health care team. **Prerequisites:** RES 120, RES 124, RES 125 and RES 126

RES 207 Advanced Cardiopulmonary Anatomy & Physiology (3 CR)

This course advances the student's knowledge of cardiopulmonary physiology. The cardiac sections cover gross and histologic cardiovascular anatomy, neural/endocrinological control of cardiac function, hemodynamics, microcirculatory disorders, and a review of common cardiac arrhythmias. The pulmonary section covers bronchopulmonary anatomy, gas diffusion, blood flow, ventilation/perfusion relationships, gas transport, mechanics and control of ventilation, and lung responses to changing environments and conditions. **Prerequisites:** RES 120, RES 125 and RES 126

RES 210 Perinatal & Pediatric Respiratory Care (3 CR)

This classroom and laboratory course covers topics including fetal growth and development, patient assessment, commonly encountered equipment and the clinical management of common neonatal/pediatric diseases and conditions. **Prerequisites:** RES 120 and RES 205

RES 220 Respiratory Seminar (2 CR)

This course presents a wide variety of topics for discussion. Included are respiratory care history, management and supervision, trends in allied health, research, job acquisition skills and credentialing exam preparation. **Prerequisite:** RES 210

RES 225 Clinical Practice IV (5 CR)

This clinical course provides a varied experience for students who are about to graduate. A major emphasis will be in assisting with the pulmonary management of neonatal patients on mechanical ventilation. Other rotations will be in a variety to advanced diagnostic laboratories and alternate site venues where respiratory therapists are employed. In addition, weekly clinic seminars will be held on campus to facilitate student learning. **Prerequisite:** RES 210

SOCIOLOGY (SOC)**SOC 117 Criminology (3 CR)**

(SAME AS CRJ 117)

Provides an understanding of the cultural nature, origin, and development of criminal behavior with attention given to the psychological and sociological factors involved. **Prerequisites:** ENG 085* and ENG 090*

SOC 152 Social Psychology (3 CR)

(SAME AS PSY 152)

Theoretical synthesis of social influences, including attitude formation, social and cognitive development, aggression, prosocial behavior, prejudice, conformity, culture and gender differences/influences, group processes and interpersonal attraction.

Prerequisite: PSY 140 or SOC 231

SOC 203 Field Studies (3 CR)

(SAME AS CRJ 203)

Only open to students who have reached sophomore level (26 or more credit hours), a minimum 2.5 GPA and permission of the department. An opportunity for students to work for one semester in a law enforcement agency.

SOC 231 Principles of Sociology (3 CR)

The discipline and its contributions to understanding the fundamental processes of social interaction. Includes development of self, socialization process, groups and social structure. Application of sociological principles to our society by examination of relevant research. **Prerequisite:** ENG 090*

SOC 235 Minority Groups in America (3 CR)

Sociology of dominant-minority relations in contemporary American society. Attention to specific ethnic, religious, and racial minorities in terms of prejudice and discrimination.

SOC 236 Women in a Changing Society (3 CR)

(SAME AS ENG 236)

Inquiry into historical and changing roles of women, looking at causes of these changes and their effects on women and society through literature, sociology, biology and history.

Prerequisites: ENG 085* and ENG 131

SOC 246 Marriage and Family (3 CR)

The position and significance of marriage and the family in contemporary society are examined. Issues are examined within the larger political, historical and social context, including marriage and family values within diverse ethnic, minority and gender identity groups. SOC 231 recommended before enrolling in this course.

Prerequisites: ENG 085* and ENG 090*

**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

SPANISH (SPN)

SPN 111 Conversational Spanish I (3 CR)

This course is beginning conversational Spanish designed for people who have little or no knowledge of Spanish. The emphasis is on speaking and listening for travelers, professionals and students. The course introduces practical vocabulary, culture, pronunciation and essential grammar with minimal reading and writing.

SPN 131 Elementary Spanish I (4 CR)

Introduces and develops the four skills of language learning: listening, speaking, reading and writing, with special emphasis on listening and speaking. **Prerequisite:** ENG 085*

SPN 132 Elementary Spanish II (4 CR)

Provides increased practice in the basic language skills: listening, speaking, reading and writing. **Prerequisite:** SPN 131

SPN 231 Intermediate Spanish I (4 CR)

Improves the basic skills of language learning with emphasis on speaking and writing. Introduces sustained readings in Spanish. **Prerequisite:** SPN 132

SPN 232 Intermediate Spanish II (4 CR)

Continues to stress speaking practice and writing improvement. Readings and discussions in Spanish, focusing on contemporary events and Hispanic culture. **Prerequisite:** SPN 231

SPN 241 Spanish Composition & Conversation I (3 CR)

This course offers additional practice in spoken and written Spanish to improve fluency and flexibility of expression. Students develop greater proficiency in pronunciation, build vocabulary and gain greater control over idiomatic expressions.

Prerequisite: Instructor permission required for enrollment

SUSTAINABLE TECHNOLOGY AND MANAGEMENT (STM)

STM 101 Introduction to Sustainability (3 CR)

Students will familiarize themselves with the environmental issues facing our community, state, country and planet. This course will provide meaning to the term "sustainability" in order to build skills that will help the leaders of tomorrow protect the earth's resources and meet the needs of humanity indefinitely. It is an introduction to both the scientific and social sides of the environmental problems the world faces, with a specific aim at establishing a foundation in environmental comprehension and for further learning within the topic of sustainability. **Prerequisites:** CIS 095*, ENG 085* and ENG 090*

THEATRE (THR)

THR 102 Theatre Activities (1 CR)

Students are actively involved in creating, producing, acting, building, designing and the technical direction of a small studio production. Involvement may include acting or technical production.

THR 116 Introduction to Theatre (3 CR)

Survey of Western theatre and drama. Appreciation of theatre through understanding of historical development and societal function. Theatre architecture, production, costuming and acting styles, and the artists who create them. **Prerequisite:** ENG 085*

THR 131 Stagecraft I (3 CR)

Basic theory of set design, including tools, equipment, terminology and construction.

THR 134 Stagecraft II (3 CR)

Continuation of Stagecraft I focusing on further developing techniques of stage scenery construction, rigging, scene painting and technical drafting. Process and methods of communicating design ideas through graphic representation are presented. **Prerequisite:** THR 131

THR 145 Fundamentals of Acting I (4 CR)

Fundamental theories and methodologies of acting and character development, using theatre games, improvisations and scene work with an emphasis on developing an ensemble.

THR 146 Fundamentals of Acting II (4 CR)

Advanced character work and an opportunity to rehearse and perform a studio theatre production. **Prerequisite:** THR 145

THR 151 Make-Up for Stage & Video (3 CR)

Students learn the fundamental techniques of design and application of make-up for theatre and video.

THR 201 Backstage Certification (1 CR)

Students receive training in manual and computerized light boards, sound systems, rigging and stage management and become certified on JCC equipment. Students crew a production at JCC.

THR 216 Voice for the Actor (3 CR)

This course will train the actor in the mechanics of vocal production, in the clarity, expressiveness and emotional context required for communicating the meaning of the spoken and written language and in dialects.

THR 241 Lighting for Stage and Video (3 CR)

Students learn the theoretical and practical aspects of lighting design for theatre, dance and video. Emphasis on design, execution and problem solving.

THR 242 Sound for Stage and Video (3 CR)

Students learn the theoretical and practical aspects of creating sound tracks for theatre and video. Topics include recording techniques, multi-track recording and mixing, editing, sound effects and sound reinforcement.

THR 260 Introduction to Directing (3 CR)

Fundamentals of play directing. Exploration of text analysis, staging techniques and rehearsal processes. Student-directed scenes analyzed and critiqued. The instructor may allow you to take the prerequisite of THR 145 concurrently. **Prerequisite:** THR 145



THR 268 Theatre Practicum (3 CR)

Practicum for actors, directors, technicians and playwrights. Students will gain practical experience within their field through active participation. Note: May be taken three times for credit (9 total credits may be earned). **Prerequisite:** Instructor Permission

VIDEO PRODUCTION (VID)**VID 101 Video Production I (3 CR)**

A course designed to introduce students to the basics of video production in both field and studio environments. Through a combination of lectures, labs, field exercises and basic studio operations students learn the techniques, concepts, and processes involved in single camera production.

Prerequisites: ENG 085* and ENG 090*

VID 120 Video Production II (3 CR)

This course is a continuation of Video Production I. Students focus on individual and group projects with the added elements of post-production, special effects and video distribution. Advanced lighting and sound editing with an emphasis on sound effects are covered. Techniques, concepts and processes involved in DVD authoring are also explored. **Prerequisite:** VID 101

WELDING TECHNOLOGY (WLD)**WLD 100 Fundamentals of Welding (4 CR)**

Fundamentals of oxyacetylene and electric arc processes, history and applications. Includes study of gases, electricity, equipment and safety procedures. Provides laboratory experience welding in flat and horizontal positions.

WLD 110 MIG/TIG Welding (4 CR)

This is a welding course in GMAW (gas metal arc welding formally known as MIG welding) and GTAW (gas tungsten arc welding formally known as TIG welding) processes and techniques. Topics will include safety, use of equipment, power sources, shielding gases, filler metals, welding techniques, troubleshooting, weld defects and welding in the flat, vertical and horizontal positions.

WLD 115 Weld III-Welding Aluminum and Stainless (4 CR)

Covers theory and fundamental application of welding as required in fabrication of aluminum and stainless steel. Includes the development of basic skills in preparation, cutting and welding of these unique materials. Provides a hands-on experience with the use of GMAW and GTAW on aluminum and stainless steel. **Prerequisite:** WLD 110

SPECIAL OPTIONS

Each discipline offers the following options.

Contact the specific faculty for more information.

- INDEPENDENT STUDY — VARIABLE CREDIT**

In-depth study of topics in any discipline that is of special interest to the student. Topic is selected and detailed in consultation with a faculty member.

- SPECIAL TOPICS — VARIABLE CREDIT**

Intensive, in-depth investigation of one topic of current interest in any discipline. Different topics are chosen by the department.

- WORK EXPERIENCE, INTERNSHIPS, SEMINARS — VARIABLE CREDIT**

Learn through meaningful work experience with an approved company in any discipline. The position must be obtained by the student and approved by the department before registration is permitted. Students apply the skills and knowledge gained from course work. A department faculty member supervises.



**You may meet this prerequisite based on your course placement, ACT score or successful college coursework. Visit our web site for current assessment options and requirements.*

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Catalog 2011-2012



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FACULTY**Diana M. Agy** (D.O.H. 08/15/05)*Assistant Professor, Language, Literature and Arts*

- A.S., Monroe County Community College
- B.S., M.A., Eastern Michigan University

Steven Albee-Scott (D.O.H. 08/23/10)*Instructor, Environmental Sciences*

- B.S., Utah State University
- M.S., Ph.D., University of Michigan

Mona G. Baarson (D.O.H. 08/31/92)*Professor, Mathematics*

- B.S., Oklahoma State University
- M.A., University of Central Oklahoma
- Further graduate study: Eastern Michigan University, Marygrove College

Thomas J. Barnes (D.O.H. 08/23/10)*Instructor, Occupational Education*

- A.A.S., Jackson Community College
- B.A.S., Siena Heights University
- Further graduate study, University of Toledo

Mary C. Belknap (D.O.H. 08/14/00)*Professor, Language, Literature and Arts*

- B.S., M.A., Western Michigan University
- Ph.D., Michigan State University

Becky L. Belter (D.O.H. 08/14/06)*Professor, Language, Literature and Arts*

- B.S., University of Wisconsin – La Crosse
- M.A., University of Wisconsin – Milwaukee
- Ed.D., Saint Mary's University of Minnesota
- Further graduate study, University of North Dakota

Susan Berendes-Wood (D.O.H. 09/29/03)*Associate Professor, Language, Literature and Arts*

- B.A., Edgewood College
- M.A., Michigan State University
- Further graduate study, Marygrove College
- Doctoral study, Michigan State University

Janice L. Bradford (D.O.H. 08/14/00)*Assistant Professor, Science*

- B.S., Grand Valley State University
- M.S., Eastern Michigan University

Steven R. Brennan, CMfgE, CSIT

(D.O.H. 09/04/79)

Assistant Professor, Computer Information Services

- B.S., Central Michigan University

Julie Bullinger-Ballow (D.O.H. 08/23/10)*Instructor, Nursing*

- B.S.N., University of Michigan
- M.S.N., University of Phoenix
- Further graduate study, Northern Michigan University

Todd Butler (D.O.H. 08/23/10)*Instructor, Foundation Studies*

- M.A., Bowling Green State University
- M.A., College of St Benedict/St John University
- Doctor of Ministry, Aquinas Institute of Theology

Gary J. Cale (D.O.H. 08/29/88)*Professor, Language, Literature and Arts*

- B.A., M.A., University of Iowa
- Ph.D., National-Louis University, Chicago
- Further graduate study: University of Colorado at Boulder, Indiana University

Colleen B. Chadderton, RNC, CPNP

(D.O.H. 01/04/82)

Professor, Nursing

- Diploma - W.A. Foote School of Nursing
- B.S.N., University of Michigan
- M.S.N., Wayne State University
- Further graduate study, Eastern Michigan University

Marty J. Chamot, RNC, FNP

(D.O.H. 01/17/94)

Professor, Nursing

- L.P.N., A.D.N., Kellogg Community College
- B.S.N., Nazareth College
- M.S.N., Andrews University
- F.N.P., Michigan State University

Larry G. Choate (D.O.H. 08/16/99)*Assistant Professor, Computer Information Services*

- B.A., Michigan State University
- M.B.A., University of Michigan

Anthony Cleveland (D.O.H. 08/19/02)*Assistant Professor, Behavioral Sciences*

- B.S., University of Toledo
- M.A., Michigan Theological Seminary
- Further graduate study, Xavier University

Leslie Coxon (D.O.H. 08/29/94)*Assistant Professor, Automotive*

- A.A.S., Los Angeles Trade Technical College
- B.A.S., Siena Heights University
- ASE Master Technician, L-1 Certified
- State of Michigan - Master Automobile Certified

Curtis E. Cremeans (D.O.H. 09/04/79)*Professor, Business*

- B.A., M.A., Michigan State University
- Further graduate study: Western Michigan University, Eastern Michigan University

Joan V. Cremeans (D.O.H. 08/18/03)*Assistant Professor, Nursing*

- B.S.N., Nazareth College
- M.S.N., Wayne State University

Jack Dakessian (D.O.H. 09/07/76)*Professor, Behavioral Sciences*

- B.S., M.A., M.S., University of Michigan

Christine M. Davis, RN, MSN

(D.O.H. 09/29/94)

Professor, Nursing

- B.S., University of Michigan
- M.S.N., Grand Valley State University

David DeBaker (D.O.H. 08/11/08)*Instructor, Language, Literature and Arts*

- B.S., Western Michigan University
- M.A., Eastern Michigan University

Chris J. DeMarco (D.O.H. 08/28/89)*Professor, Sciences/Language, Literature and Arts*

- B.S., M.S., Arizona State University
- M.A., Michigan State University
- Further graduate study, Michigan State University

Michael A. Dexter (D.O.H. 08/18/09)*Instructor, Biology*

- B.S., Guilford College
- M.S., Wake Forest University

Keith E. Drayton (D.O.H. 09/04/79)*Professor, Language, Literature and Arts*

- B.A., Hillsdale College
- M.A., Eastern Michigan University
- M.M., Southern Illinois University
- Further graduate study: Michigan State University, Western Michigan University

David S. Fitzgerald (D.O.H. 10/24/88)*Professor, Computer Information Services*

- B.S., Ferris State University
- M.A., Eastern Michigan University,
- Further graduate study: Eastern Michigan University, Walden University, and Marygrove College

D.O.H. = Date of Hire

Clarinda R. Flannery (D.O.H. 1/7/10)
Instructor, Developmental Writing
• B.A., M.A., Eastern Michigan University

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Professor, Criminal Justice
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Slandah Dieujuste (D.O.H. 03/14/11)*Student Services Specialist Title III*

- B.A., M.A., Boston College

Dale Dopp (D.O.H. 09/13/10)*Development Officer, JCC Foundation*

- B.A., Siena Heights University

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- A.A., Jackson Community College
- B.A., M.A., Siena Heights University

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- B.S., M.S., Kettering University

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- A.A., Jackson Community College
- B.A., Central Michigan University
- M.A., Michigan State University
- Further graduate study, Eastern Michigan University
- Doctoral student, Michigan State University

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- A.A.S., Jackson Community College

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- A.A., B.A., Baker College

Melinda Gieseke (D.O.H. 07/14/08)*Controller*

- B.S., Oral Roberts University

Jeremy Frew (D.O.H. 03/07/11)*Assistant Dean of Instruction and Scheduling*

- B.A., M.A., Siena Heights University

Guadalupe Hamden (D.O.H. 09/30/02)*Assistant Manager, Employment Services Lenawee***Lee M. Hampton** (D.O.H. 10/03/05)*Director of Multicultural Relations*

- A.A., Lansing Community College
- B.A., Central Michigan University

Julie Hand (D.O.H. 08/24/98)*Assistant Dean of Student Services*

- A.A.S., Kellogg Community College
- B.A., Spring Arbor College

Heather Harback (D.O.H. 8/18/09)*Director, Corporate and Continuing Education*

- B.A., Western Michigan University

Mandy Huff (D.O.H. 09/29/09)*Director of Residence Life*

- B.A., Malone College
- M.A., Liberty University

James L. Jones (D.O.H. 01/12/98)*Executive Director, Information Technology*

- B.A., Ferris State University
- Further graduate study, Ferris State University

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- B.S., College of Mount St. Vincent
- M.A., H.H. Lehman CCNY

Rose Klee (D.O.H. 06/29/98)*Registrar*

- A.G.S., Jackson Community College
- B.A., Siena Heights University

Michael P. Masters (D.O.H. 08/05/02)*Dean, Off-Campus Operations*

- B.B.A., Auburn University
- M.S., Capella University

Stacy L. Mellon (D.O.H. 05/17/10)*Interim Executive Director, Human Resources*

- A.A.S., Jackson Community College

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- B.A., Oakland University
- M.A., Eastern Michigan University

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- A.G.S., Jackson Community College
- B.B.A., Siena Heights University

Amanda Patterson (D.O.H. 04/20/04)*Special Assistant to the President*

- A.A.S., Jackson Community College
- B.A., Siena Heights University

D.O.H. = Date of Hire

Daniel J. Phelan, Ph.D. (D.O.H. 04/09/01)

President

- A.A., B.A., Mount St. Clare College
- M.B.A., St. Ambrose University
- Ph.D., Iowa State University

Melissa E. Potter (D.O.H. 09/28/87)

Manager, Clyde E. LeTarte Center Hillsdale

- A.G.S., Jackson Community College
- B.A., Michigan State University
- M.A., Eastern Michigan University

Mark Rabinsky (D.O.H. 07/14/09)

Director of Sustainability

- B.B.A., University of Massachusetts Amherst
- M.S., University of Michigan

Anthony P. Rana (D.O.H. 05/30/06)

Manager Campus Employment Services

- A.A., Rochester College
- B.A., University of Detroit-Mercy
- M.S.A., Central Michigan University

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- A.A.S., Jackson Community College
- B.A., Siena Heights University
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Assistant Director Employment Services, Jackson

- A.A., Jackson Community College
- B.A., Siena Heights University

Manuel Salazar (D.O.H. 10/01/03)

Manager Employment Services, Lenawee

Alan Schultz (D.O.H. 12/06/10)

Manager Workforce Programs

- B.S., Michigan State University

Michelle Shields (D.O.H. 07/27/10)

Dean of Student Services

- A.A.S., Business, Jackson Community College
- B.A., Baker College
- M.A., Michigan State University
- Ph.D., University of Toledo

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- B.A., Spring Arbor University

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Manager Facilities Department

- B.A., Grand Valley State University
- M.A., Wayne State University
- Further graduate study, Western Michigan University

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Student Ombudsman

- B.S., Michigan State University

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Manager Employment Services, Hillsdale

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- B.B.A., University of Texas at San Antonio

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- B.S., Grand Valley State University
- M.B.A., Eastern Michigan University

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Manager of TRADE Administration

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- B.A., Albion College
- J.D., Regent University School of Law
- Ph.D., Regent University School of Global Leadership & Entrepreneurship

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- B.A., M.F.A., Michigan State University

STAFF

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Accountant, Grants, Business Office

- A.A.S., Jackson Community College
- B.A., Spring Arbor University
- M.B.A., Spring Arbor University

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Lead Training Officer, part-time

- B.S., Ferris State University

Shelah Amburgey (D.O.H. 01/24/11)

Customer Service Generalist, Student Services

- A.G.S., Jackson Community College

Maleana Annabel (D.O.H. 09/26/05)

Student Accounts Representative/Accounts

- Payable Clerk, Business Office*
- Certificate, Accounting & Business Administration, Jackson Community College
- A.A.S., Jackson Community College

Ashley Arquette (D.O.H. 11/11/08)

Enrollment Services Specialist, Student Services

- B.A., Western Michigan University

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*Student Services Center Afternoon Cashier -
Part-Time*

Larry Baltimore (D.O.H. 09/28/00)

Cleaning Team, Facilities

Larry Baltimore II (D.O.H. 05/18/10)

Cleaning Team part-time, Facilities

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- B.A., Mount Union College

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Re-Entry Initiative*

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• B.A., Spring Arbor University

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• A.S., B.S., Lake Superior State University

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• A.G.S., Jackson Community College

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Information Technology*
• A.A., Jackson Community College

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Building Maintenance Technician, Facilities

Bradley Birchfield (D.O.H. 04/14/08)
Messenger, Auxiliary Services

Johnny Blagg (D.O.H. 10/10/05)
Cleaning Team, Facilities

Cheryl Blank (D.O.H. 09/20/95)
Administrative Secretary, Aviation Technology

Carol Bliss (D.O.H. 03/13/00)
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• A.A.S., Accounting/Finance, Jackson
Community College
• A.A.S., Business Administration, Jackson
Community College

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Hardware Coordinator, Information Technology
• Certificate Automotive Service Technology,
Jackson Community College
• A.A.S., Automotive, Jackson
Community College
• A.A.S., Data Processing, Jackson
Community College

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Technical Coordinator, Student Services
• A.A., Jackson Community College
• B.B.A., Siena Heights University
• M.A.O.M., Spring Arbor University

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Instructional Designer/Trainer
• B.A., University of Michigan Flint

Linda Bowser (D.O.H. 09/29/00)
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Michael Brinkman (D.O.H. 08/26/04)
*Distance Learning Technician,
Distance Learning*
• A.A., Bay de Noc Community College
• B.A., Michigan State University

Cristen Brown (D.O.H. 05/16/96)
*Weekend Ticket Office Manager, Community
Relations and The Performing Arts*

E. Ann Brown (D.O.H. 07/15/91)
*Front of House Manager, Community Relations
and The Performing Arts*

Mark Brown (D.O.H. 11/30/07)
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Bradley Bryan (D.O.H. 08/30/10)
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Enrollment Services Specialist, Student Services
• B.A., Michigan State University

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Damien Cameron (D.O.H. 02/19/07)
*Academic and Solution Center Technician,
Information Technology*

Kelly Chambers (D.O.H. 05/21/01)
*Database/Internet Systems Coordinator,
Information Technology*

Mark Chapman (D.O.H. 01/30/06)
*Database and Programming Coordinator,
Information Technology*
• B.A., Eastern Michigan University

Jeffery Chatfield (D.O.H. 10/06/03)
*Theater Technician/Designer, Community
Relations and The Performing Arts*

Marcella Clone (D.O.H. 09/20/99)
*Administrative Systems Coordinator, Information
Technology*
• A.S., Jackson Community College
• B.S., Grand Valley State University

Melissa Cooner (D.O.H. 05/05/08)
*Intake Specialist/Lean Coordinator,
Employment Services, Lenawee*
• A.A.S., Jackson Community College

Daniel Cox (D.O.H. 12/18/78)
Facilities Special Services, Facilities

Michael Coy (D.O.H. 09/10/01)
*Senior Theatre Technician, Community Relations
and The Performing Arts*
• A.A., Jackson Community College

Adonikam Crumbsy (D.O.H. 11/17/09)
*MPRI Workforce Development and
Billing Coordinator*
• B.A., Spring Arbor University

James Dale (D.O.H. 04/02/90)
Storeroom Manager, Auxiliary Services

Minnta Davis (D.O.H. 08/10/06)
*Building Maintenance/Cleaning Team,
Clyde E. LeTarte Center Hillsdale*

Cheryl DeGroote (D.O.H. 10/13/94)
*Coordinator, Occupational Grants and
Program Planning*
• A.A., Jackson Community College
• B.A., Spring Arbor College

Sandra DiCesare (D.O.H. 11/11/85)
*Coordinator of Educational Theatre, Arts
and Science*
• B.F.A., Kent State University
• M.A., University of Akron

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Information Technology*
• A.A., Jackson Community College
• B.A., Siena Heights University

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*Hardware/Audio Visual Technician,
Information Technology*
• A.A.S., Medical Secretary, Jackson
Community College

Lisa Drake (D.O.H. 03/11/02)
*Graphic Designer, Marketing
and Communications*
• A.A., Lansing Community College
• B.A., Michigan State University

Prudence Dreyer (D.O.H. 05/18/98)
*Ticket Sales Representative, Community
Relations and The Performing Arts*

Elsia Drumhiller (D.O.H. 09/06/94)
Cleaning Team, Facilities

Joyce Dunbar (D.O.H. 11/17/09)
Coordinator, Registration and Records
• B.A., Central Michigan University

Daniel Duncan (D.O.H. 04/10/00)
Cleaning Team, Facilities

Earl Dupuie (D.O.H. 08/10/06)
*Building Maintenance/Cleaning Team,
Clyde E. LeTarte Center Hillsdale*

Sharron Elliott (D.O.H. 10/09/06)
*Employment Advisor, Employment
Services, Hillsdale*
• A.A.S., Jackson Community College
• B.A., Spring Arbor University

Nicole Erb (D.O.H. 11/22/10)
TAA/NAFTA Specialist
• A.A., Muskegon Community College

Patricia Kelley Emerson (D.O.H. 09/07/10)
Coordinator, Center for Student Success
• A.A., Jackson Community College
• B.S., University of Michigan

Vicki Enriquez (D.O.H. 11/22/10)
TAA/NAFTA Specialist
• A.A.S., Jackson Community College

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Transfer Coordinator/Academic Advisor
• B.A., Grand Valley State University

Brad Everett (D.O.H. 04/16/08)
*Web Designer/Developer, Marketing
and Communications*
• A.A.G., Lansing Community College
• B.A., Siena Heights University

Katie Fall (D.O.H. 10/13/05)
*Health and Physical Fitness
Program Coordinator, Student Life*
• B.A., Saginaw Valley State University

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Office Assistant, JCC @ LISD TECH
• B.A., Central Michigan University

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*Marketing Assistant/Assistant Graphic
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• A.A.S., Jackson Community College
• B.A., Michigan State University

Eldon Fields (D.O.H. 05/07/07)
*Weight Training and Conditioning Center
Assistant, Student Life*

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Groundskeeper part-time, Facilities
• A.A., Jackson Community College
• B.A., Siena Heights University

Shannon Fischer (D.O.H. 07/01/09)
Accountant, Business Office
• A.A.S., Davis College

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• A.G.S., Jackson Community College

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Office Assistant, JCC @ LISD TECH
• B.A., Columbia College

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*Weight Training and Conditioning Center
Assistant, Student Life*

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Payroll Specialist, Business Office
• Certificate, Baker College

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*Weight Training and Conditioning Center
Assistant, Student Life*

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*Intake Specialist, Employment
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• A.G.S., Jackson Community College

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• B.S., Eastern Michigan University
• M.A., Spring Arbor University

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Cleaning Team, JCC @ LISD TECH, Facilities

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• A.A.S. Jackson Community College
• B.A., Siena Heights University
• Further graduate study, Siena
Heights University

Brandy Grajek (D.O.H. 10/22/07)
Administrative Secretary, Walker Hall
• A.A., Jackson Community College

Marla Grant (D.O.H. 08/31/92)
*Weight Training and Conditioning Center
Assistant, Student Life*

Greg Green (D.O.H. 11/15/99)
*Audio Visual Coordinator,
Information Technology*

Tamra Griffiths (D.O.H. 07/07/09)
Intake Specialist, Employment Services, Jackson
• A.A., Davenport University

Max Hamilton (D.O.H. 05/09/96)
*Maintenance Technician, JCC @ LISD
TECH, Facilities*
• A.G.S., Jackson Community College

Cari Hankerd (D.O.H. 02/21/11)
Recruiter
• B.A., Western Michigan University
• M.A., Michigan State University

Derrick Hardman (D.O.H. 10/22/84)
Building Maintenance, Facilities

Jennifer Harris (D.O.H. 07/07/09)
Intake Specialist, Employment Services, Lenawee

Karen Harris (D.O.H. 07/28/08)
Financial Aid Coordinator, Financial Aid

Jerome Heard (D.O.H. 03/03/97)
Building Maintenance, Facilities

Debra Heath (D.O.H. 12/11/08)
*Switchboard Operator/Receptionist, Community
Relations and The Performing Arts*

Linda Hoard (D.O.H. 09/03/85)
Financial Aid Team Leader, Financial Aid
• B.B.A., Western Michigan University

Rex Holmes (D.O.H. 08/06/03)
*Weight Training and Conditioning Center
Assistant, Student Life*

Kenneth Hoyle (D.O.H. 09/05/78)
Cleaning Team, Facilities

Daphney Hubbard (D.O.H. 08/25/08)
Office Assistant, JCC @ LISD TECH

Latisha Hurd (D.O.H. 10/02/06)
*Enrollment Services Coordinator,
Enrollment Management*
• B.A., Spring Arbor University

Amanda Janes (D.O.H. 02/21/00)
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Clyde E. LeTarte Center Hillsdale*
• A.G.S., Jackson Community College
• B.A., Siena Heights University

Penny Janiak (D.O.H. 07/23/01)
*Manager Ticket Office, Community Relations
and The Performing Arts*

Deborah Johnson (D.O.H. 02/05/07)
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Continuing Education*
• A.S., Davenport University

Lennard Johnson (D.O.H. 12/1/09)
*Disability Navigator, Employment
Services, Jackson*
• A.A., Central College
• B. A., Greenville College

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• B.A., Spring Arbor University

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Assistant, Student Life*

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Safety and Security Liaison
• A.A.S., Jackson Community College

Felicia Konopka (D.O.H. 8/18/09)
Jackson Assessment Center Trainer
• A.A., Lansing Community College
• B.A., Michigan State University

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Accounts Payable Technician, Business Office
• A.A.S., Ferris State University

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• A.A., Waldorf College
• B.S., Iowa State University

Donald Lauraine (D.O.H. 09/15/80)
Events Services, Facilities

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Nursing Admissions Coordinator, Nursing
• A.A., Jackson Community College
• B.A., Spring Arbor College

Dusty Marks (D.O.H. 01/17/11)
Testing Lab Proctor, part-time
• A.A., Jackson Community College

Karen Marler (D.O.H. 01/23/07)
Dean's Office Coordinator

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• B.A., Central Michigan University

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Student Center Morning Cashier

Tina May (D.O.H. 07/04/00)
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Prisoner Re-Entry Initiative*

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• B.A., Eastern Michigan University

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• B.S., Grand Valley State University

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• B.A., Wayne State University

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*Physical Plant Maintenance/
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• Industrial Maintenance Mechanic Certificate,
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• Electrician Certificate, Jackson
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• A.A.S., Jackson Community College

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• A.A.S., Jackson Community College

Walter Schweizer (D.O.H. 03/02/79)
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• B.A., Aquinas College
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• B.A., Ferris State University
• M.A., Eastern Michigan University

Timothy R. Smith (D.O.H. 02/05/01)
Physical Plant Maintenance, Facilities

Zachary Smith (D.O.H. 11/06/10)
Safety & Security Liaison, part-time

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• M.A., Michigan State University

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Advising	517.796.8402
Alumni Relations.....	517.787.0244
Athletics	517.796.8455
Bookstore.....	517.796.8440
Campus View Housing.....	517.796.8656
Cashier	517.796.8420
Center for Student Success	517.796.8415
College Preparedness Program (CPP).....	517.796.8470
Community Relations	517.796.8473
Corporate and Continuing Education	517.796.8610
Dean, Arts and Sciences.....	517.796.8523
Dean, Foundation Studies	517.796.8526
Dean, Occupational Education	517.796.8502
Dean, Student Services	517.796.8409
Employment Services	517.796.8635
Fieldhouse.....	517.796.8455
Financial Aid	517.796.8410
General Information	517.787.0800
Human Resources	517.796.8460
JCC Flight Center, Jackson	517.787.7012
JCC Foundation	517.787.0244
JCC LeTarte Center, Hillsdale.....	517.437.3343
JCC @ LISD TECH	517.265.5515
Learning Resources Center (Library)	517.796.8622
Marketing.....	517.796.8416
Multicultural Relations	517.796.8470
Nursing Admissions	517.796.8424
Potter Center Ticket Office	517.796.8600
President's Office.....	517.796.8443
Records/Transcripts	517.796.8405
Registrar	517.796.8584
Registration	517.796.8405
Residence Life Office	517.796.8656
Service Learning and Civic Engagement.....	517.796.8415
Speakers Bureau	517.796.8473
Student Life Office	517.796.8628
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JCC Flight Center
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Jackson, MI 49202-1811
517.787.7012

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