Muskegon Community College

221 S. Quarterline Road
Muskegon, MI 49442
231.773.9131

The information contained in this catalog is also available on the MCC website:

www.muskegoncc.edu

Cover Photo: Interior of MCC's new Hendrik Meijer Library Information Technology Center
From the President

Hello and Welcome to MCC:

Thank you for selecting Muskegon Community College as your institution of choice to begin or continue your college education. MCC faculty and staff are working hard to ensure that your educational experiences are both rewarding and relevant to the goal of your choosing, whether it be completing an associate degree, transferring to a university, upgrading your career skills, or enhancing yourself with continuing education and/or community coursework. One broad area of improvement on campus exists in TECHNOLOGY. As the role of technology continues to affect the breadth and scope of access to critical information and its application, you can be assured that Muskegon Community College is committed to providing students and the public the finest technological resources available to support the educational process.

We are particularly pleased with the opening of the new Hendrik Meijer Library Information Technology Center. If you have not yet had an opportunity to visit the Meijer LIT Center, I enthusiastically encourage you to do so at your earliest convenience. With a focus on education and research, this facility is truly a major resource that has the capacity to positively impact the future of our community for the foreseeable future.

And while the Meijer LIT Center fully embraces computer technology to help combine digital information with written texts to complement learning, you should be aware that we are not ignoring technology in the other 85% of campus facilities. Our goal is for the campus to feature wireless technology to provide enhanced access to online services. At this writing we have made great strides in this regard and I am pleased to note that you, the students have responded in a positive fashion.

On the near horizon is a “One-Stop” Student Services Center whereby students can conveniently acquire everything they need to start or continue their education at MCC. From the application process through testing, counseling, and financial aid, soon the entire array of student services will be available near the main entrance with complete online access not far behind. We are focusing on providing the very best service possible for new and current students.

Community colleges are all about opportunity—to prepare for successful transfer to a four-year college or university—to acquire new or enhanced knowledge and skills that will advance your existing career—to earn a degree or certificate that can qualify you for a well-paying job or promotion—to complement and enrich your lifestyle with new vocational skills. Muskegon Community College, by harnessing the power of modern technology, underscores its commitment to providing West Michigan with an outstanding educational environment.

Again, thank you for choosing Muskegon Community College and please be assured that we strive to make the MCC Vision Statement a reality for everyone: “Building our community’s gateway to opportunities...creating the first and best choice for success.”

Cordially,

David L. Rule, Ph.D.
President
MCC MISSION STATEMENT

Muskegon Community College, an associate degree-granting institution of higher education, is a center for lifelong learning which provides persons the opportunity to attain their educational goals by offering programs that respond to individual, community, and global needs.

To fulfill its mission, MCC is committed to:

1. Prepare students for successful transfer to four-year colleges and universities, and enable students to pursue higher-level degree opportunities through our local partnerships with university programs.

2. Develop technical and vocational skills necessary to enter and/or advance in the technologically sophisticated workplace of the 21st century.

3. Provide for the assessment and/or improvement of learning skills and attitudes necessary for a successful educational experience.

4. Meet the unique educational, cultural, and societal needs in the community through special courses, seminars, and exhibits.

5. Respond in a rapid fashion to the ever-changing educational and training needs of local and regional business and industry.

6. Stimulate intellectual curiosity, promote humanitarian values and enhance the general educational experiences necessary for persons to function as effective citizens.

7. Create an atmosphere where diversity is acknowledged and encouraged.

8. Provide comprehensive student services that are conducive to student learning and satisfaction in all facets of the college experience and appropriate to an open door community college.

ACCREDITATION

Muskegon Community College is accredited by Higher Learning Commission of the North Central Association of Colleges and Schools, 30 N. LaSalle St., Chicago, IL 60602-2504—(800) 621-7440. They can also be contacted online at www.ncahigherlearningcommission.org.

EQUAL OPPORTUNITY

Muskegon Community College is an equal opportunity, affirmative action institution and does not discriminate on the basis of race, color, religion, sex, national origin, marital status, sexual orientation, political persuasion, disability, height, weight, or age in any of its educational programs, activities, and employment.
ABOUT THIS CATALOG

This catalog contains general information about Muskegon Community College, its history, objectives, programs, and course offerings. It is intended as a guide for prospective students, admissions and guidance counselors, and the general public, as well as for present students and faculty.

The information contained in this catalog is subject to change. The catalog cannot be considered an agreement or contract between individual students and Muskegon Community College or its administration.

Knowledge of the information presented here and in other College publications is the responsibility of each student. Not understanding the College regulations does not exempt a student from compliance with those regulations.

Students returning to Muskegon Community College after a five-year absence will be under the requirements of the current catalog.

GENERAL INFORMATION-Section One.
ACADEMIC PROGRAMS-Section Two.
COURSE DESCRIPTIONS-Section Three.

HOW TO GET STARTED

Checklist of Items to Complete

1. Fill out an application for admission to MCC. You will shortly receive a letter of acceptance and a student number. You may do this in Room 100, by mail, or on-line at www.muskegoncc.edu. Call 231.777.0363 for information.

**If you are planning to enter the Nursing or Respiratory Therapy program, you should also fill out the appropriate program application.

2. Contact your high school or G.E.D. center and have a transcript or certificate sent to the Admissions Office.

3. See a representative of the Financial Aid Office in Room 206. Hours are 8:00 a.m. – 7:00 p.m. on Monday and Tuesday, and 8:00 a.m. – 4:30 p.m. Wednesday through Friday.
   Telephone: 231.777.0221.

4. Take the placement test. Appointments can be made in person or by calling 231.777.0394. The Testing Center is in Room 353. Results will be mailed to you.

5. See a counselor for help in course selection. If you have chosen a program of study, ask for the appropriate counselor for that area. Appointments can be made in room 101, or by calling 231.777.0362.

6. Register for classes and pay your tuition. See current Schedule of Classes for registration and payment dates.
Muskegon Community College Catalog

General Information

PLANNING YOUR CLASSES, YOUR CURRICULUM, YOUR CAREER

"What courses should I take first? How soon do I need to choose a major? What sort of degree do I want?" All students ask these questions, and the next 10 pages will help you start finding answers.

HERE’S WHAT YOU SHOULD DO:
FIRST: Get good advice.  
(Notahe, although this information appears on page 4, it bears repeating.)
1. First, complete an application for admission. Call 231.777.0363 to have one mailed to your home, or, stop by Room 100 on campus to complete one and receive your student number in one visit. The Admissions Office is open Monday through Thursday from 8:00 a.m. to 6:00 p.m., and on Friday until 4:30 p.m. Or, you may apply on-line at www.muskegoncc.edu.
2. Attend orientation. Call 231.777.0366 to find out how.
3. Find out if you are eligible for financial aid. Call 231.777.0221 for details.
4. You may also wish to take advantage of our free career testing and counseling. Call 231.777.0365.
5. Determine your skills by taking required placement tests. Call 231.777.0394 for an appointment and see page 21 of this catalog for details.
6. Set up an appointment with a counselor by calling 231.777.0362.

SECOND: Aim toward earning a degree.

Muskegon Community College offers two degree options, as well as several diploma and certificate programs and professional development credit programs. Depending on your goals and the advice you receive from a counselor, you may want to pursue one of these two degrees:

Associate in Science and Arts

This degree is for students intending to transfer to a four-year college or university. Graduates are generally admitted to the bachelor degree granting institutions with junior year standing. A survey of the most recent MCC graduates found that 98% agree or strongly agree that "I feel well prepared to go on to a four-year college." However it is important that you follow a curriculum guide, available to you in the Career Resource Center or on-line at www.muskegoncc.edu. Details about the Associate in Science and Arts degree requirements are available in the next few pages. This degree automatically fulfills the MACRAO AGREEMENT.

Associate in Applied Science

This degree is for students preparing for immediate employment, although the degree may transfer to a limited number of bachelor degree programs. The Business, Industrial Manufacturing Technology, and Allied Health programs under this degree (shorter certificate and diploma programs are available) were designed in conjunction with active advisory committees so that a student may reasonably expect employment upon successful completion. A survey of our most recent graduates found that 99% of those in the job market were working, 84% in their field of study. Details can be found in the next few pages.

Diplomas, Certificates and Professional Development Credits

Certificates are offered in many of the same occupationally-oriented programs as the Associate in Applied Science degrees but are not as comprehensive in nature. These certificate programs were developed with the assistance of advisory committees, and students may reasonably expect employment upon completion of these programs. New certificate and professional development programs are continually being developed at Muskegon Community College. Students should check with counselors for information on other certificate and professional development programs which may be available.
General Information

IT IS STRONGLY RECOMMENDED YOU SEE A COUNSELOR TO DEVELOP A COURSE PLAN FOR PURPOSES OF TRANSFERRING TO A FOUR-YEAR INSTITUTION OR OBTAINING A TWO-YEAR DEGREE OR CERTIFICATE.

If you are returning to Muskegon Community College after an absence of FIVE YEARS OR LONGER you will be under the requirements of the CURRENT CATALOG.

IF YOUR GOAL IS TO TRANSFER

To receive the Associate in Science and Arts Degree, you must complete three sets of requirements (Foundation Skills, General Education, and Electives) and a minimum of 62 credits. See a counselor (call 231.777.0362) to help you select the appropriate courses from the following degree requirements. Depending on your major and the four-year school you wish to transfer to, the entire Associate in Science and Arts degree may not be necessary. See a counselor for guidance.

REQUIRED FOUNDATIONAL SKILLS

The College believes that a successful, meaningful experience in college courses occurs when students enter programs adequately prepared to meet their challenges. Therefore, you must demonstrate a minimum level of achievement, either by successful testing or satisfactory course completion (a grade of “C” or better), in four areas: writing, reading, math, and computers. See page 22 for information on testing.

BASED ON TEST RESULTS YOU MAY BE REQUIRED TO COMPLETE

1. Writing ......................................................... English 085, 089, 091, and/or 114

2. Reading ...................................................... Reading 040A or 040C

3. Mathematics ........................................ Math 050 or 107 (or complete a higher level class)

4. Computers .................................................. CIS 100 or any other CIS course
   (Students are strongly recommended to complete CIS110, or CIS 120A, or CIS 129.)

You may test out of each of these requirements via MCC’s placement tests. Students submitting an ACT composite score of 22 or higher, or MEAP proficiency levels of 1 or 2 on both reading and writing, have met the reading and writing foundational skills requirements.

If test results show that you need to complete any of the Foundational Skills courses, you must enroll in these classes during your first semester of attendance.

GENERAL EDUCATION REQUIREMENTS

The College shares the view held by many that an education should prepare a person not only for a career, but also for life. It is primarily through the curriculum of the general education program for the Associate in Science and Arts degree that the college seeks to help students acquire the knowledge and skills necessary to understand themselves, and the world they live in. For a complete statement regarding the purpose of general education, please see pages 11 to 14 of this catalog.
## GENERAL EDUCATION REQUIREMENTS

### Communication

<table>
<thead>
<tr>
<th>Course</th>
<th>Minimum Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101 and 102</td>
<td>6</td>
</tr>
</tbody>
</table>

### Science and Math

Courses must be taken in more than one academic area and be numbered 100 level or above and include at least one 4-credit hour laboratory course. If Biology 100 is elected, four different one credit hour modules are needed to satisfy the laboratory course requirement.

- Anthropology 105
- Astronomy 101, 105A (Same course as Physics 105A)
- *Biology 100 – (10A,B,C,D,E,F,G,H,I)
- *Biology 103, 105, 106, 105, 120, 122B, 204, 207 (Lecture) 
  & 207A (Lab), 210
- (Biology 207 (Lecture only) must be taken with Biology 207A (Lab) for laboratory credit)
- Biology 200
- *Biology 200L
- Business 105 (Same course as Mathematics 115)
  !!!! *Chemistry 100 Lecture & 100A Lab, 101 Lecture & 101A Lab, 102 Lecture 
  & 102A Lab, 120 Lecture & 120A Lab, 130 Lecture 
  & 130A Lab, 201E Lecture & 201F Lab, 202F Lecture
  & 202G Lab (All Chemistry classes must be taken with the accompanying Chemistry lab for laboratory credit)
- *Geography 101A, 215
- *Geology 101A, 102
- Mathematics 105, 107, 109, 111, 112, 115 (Same course as Business 105), 151, 161, 162, 215,
  274, 283, 295
- *Physical Science 101A
- Physics 105A (Same course as Astronomy 105A)
- *Physics 201, 202, 203, 204

*These courses will satisfy the laboratory requirement.

!!! Chemistry placement test is required prior to taking Chemistry 101. Contact the Testing Center, phone 231.777.0394.

### The Human Experience

<table>
<thead>
<tr>
<th>Area</th>
<th>Minimum Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetic Values</td>
<td>3</td>
</tr>
<tr>
<td>Art 101, 104, 105, 107, 108, 109, 204, 205, 207, 208, 209, 211</td>
<td></td>
</tr>
<tr>
<td>Communications 203 (Same course as English 208)</td>
<td></td>
</tr>
<tr>
<td>Dance 100, 101, 102, 106, 200, 201, 213, 218</td>
<td></td>
</tr>
<tr>
<td>English 208 (Same course as Communications 203), 223</td>
<td></td>
</tr>
<tr>
<td>Music 103 and all other Music courses numbered 100 or above</td>
<td></td>
</tr>
</tbody>
</table>

### Ethics and Logic

<table>
<thead>
<tr>
<th>Area</th>
<th>Minimum Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy 101, 102, 104, 202, 204, 205</td>
<td></td>
</tr>
</tbody>
</table>

### Social Relationships

<table>
<thead>
<tr>
<th>Area</th>
<th>Minimum Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 101, 102, 130</td>
<td></td>
</tr>
<tr>
<td>Psychology 102, 201, 202, 203, 205A</td>
<td></td>
</tr>
<tr>
<td>Sociology 101, 102, 202, 203, 206</td>
<td></td>
</tr>
<tr>
<td>Women's Studies 101</td>
<td></td>
</tr>
</tbody>
</table>
**General Information**

**Human Cultures**

**Western World**
- Art 198, 199, 202
- English 200, 201, 204, 205, 206, 210, 213, 225, 226, 227, 228
- History 101, 102, 204
- Humanities 195
- Music 103
- Political Science 203
- Theater 201

**American**
- History 201, 202, 207, 211, 220
- Political Science 111, 205, 220

**International**
- If the credit hours from American Cultures and Social Relationships total less than eight credits, the choices are:
  - Anthropology 103, 110
  - Geography 102C, 105
  - Political Science 202, 210, 211

  If the credit hours from American Cultures and Social Relationships total eight or more, then other options are:
  - English 207, 211, 218
  - French 101, 102, 201, 202
  - German 101, 102, 201, 202
  - History 210
  - Philosophy 203, 210
  - Spanish 101, 102, 201, 202

**Physical Education**
- One credit hour from:
  - PEA 101A, 103, 104A, 118, or 201 and one PEA/DNC credit hour of choice.

**MINIMUM GENERAL EDUCATION CREDITS**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>34</td>
</tr>
</tbody>
</table>

**Electives**

Electives are courses a student chooses, in addition to the other degree requirements, based on the anticipated major and the transfer school the student will be attending. Electives should be chosen carefully, with the advice of a counselor, who will provide a student with a CURRICULUM GUIDE which lists specific courses the four-year school wants students to take at the community college level.

**MINIMUM ELECTIVES**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>28</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL CREDITS**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>62</td>
</tr>
</tbody>
</table>

Note: to meet the College’s technology goals, students are strongly recommended to complete CIS 110, 120A, or 129. For student numbers 104000 and above, a maximum of four credit hours of the following will count toward graduation: ENG 085, 089, 091; RDG 040A, 040C, 040E; MATH 035 modules, 036A, 040.
Curriculum Guides

Curriculum guides tell you what courses to take at Muskegon Community College before transferring to a senior college. There are curriculum guides available for the most popular majors and transfer schools. For example, if you want to study engineering and transfer to the University of Michigan, there is a curriculum guide which tells you which courses the University of Michigan wants you to take at MCC before transferring. The guides are prepared jointly by our counselors and the admissions offices at the transfer colleges, and are available in the Counseling and Advising Center in room 101, or online at www.muskegoncc.edu under Future or Current Students.

Advertising/Public Relations
Agriculture and Natural Resources
Allied Health A.A.S.
Anthropology
Architecture
Art
Athletic Training
Behavioral Science
Biology
Bio-Medical Science
Bio-Psychology
Broadcast and Cinematic Arts
Business Administration
Business Education
Chemistry
Chiropractic Medicine
Clinical Laboratory Sciences
Computer Science
Correction Certificate
Criminal Justice
Crop and Soil Sciences
Dance
Dentistry
Dietetics
Economics
Education
Elementary Education
Engineering
Engineering Technology
English
Fisheries and Wildlife
Foodservice, Lodging and Travel
Foreign Language
Forestry
Geology
Health Care Systems Administration
Health Information Management
Health Sciences
History
Hospitality and Tourism Management
Industrial Education
Industrial and Environmental Health Management
Industrial Technology
Management
Manufacturing Engineering
Mathematics
Medical Records Administration
Medical Technology
Medicine
Music
Natural Resources
Nuclear Medicine Technology
Nursing
Occupational Education Studies
Occupational Therapy
Optometry
Packaging
Park and Recreation Resources
Pharmacy
Philosophy
Physical Education
Physical Therapy
Physician's Assistant
Physics
Political Science
Psychology
Public Relations
Recreation
Secondary Education
Social Work
Sociology
Special Education (General and Elementary)
Special Education (Secondary)
Speech Pathology and Audiology
Sports Medicine
Theater
Veterinary Medicine
WHAT IS THE MACRAO AGREEMENT?

MACRAO AGREEMENT

MACRAO (Michigan Association of Collegiate Registrars and Admissions Officers) Agreement: If you complete the General Education requirements for the Associate in Science and Arts degree, you will receive the MACRAO stamp on your transcript, which makes transferring to many Michigan colleges and universities easier. Colleges and universities who are part of this agreement will exempt transfer students from most or all of their general education requirements if the student has met the general education requirements at Muskegon Community College. The agreement does not cover elective courses (see information on electives and curriculum guides). Some colleges and universities have limitations and provisos; you should consult with a counselor regarding these factors and the four-year college of your choice.

In special cases however, it may be in your best interest to take courses which satisfy the MACRAO agreement but do not meet the requirements for the Associate in Science and Arts degree. All students should consult with a counselor.

WHAT IS GENERAL EDUCATION AND WHY DO I HAVE TO TAKE THOSE CLASSES?

Some students feel that if they are going to major in business, for example, they should just take business courses. But employers, and all colleges and universities, disagree. An educated person knows (and can do) many things. General Education courses develop abilities important for everybody, regardless of one's major. A complete description of the Purposes of General Education for the Associate in Science and Arts degree at Muskegon Community College follows.

THE PURPOSES OF GENERAL EDUCATION

For the Associate in Science and Arts degree at Muskegon Community College

Introduction: The college shares the view held by many that an education should prepare a person not only for a career, but also for life. It is primarily through the curriculum of the general education program for the Associate in Science and Arts degree that the College seeks to help students acquire the knowledge and skills necessary to understand both themselves and the world they live in. General education encourages community by providing access for students to the knowledge common to all educated men and women, regardless of their vocation. General education is designed to cultivate in each student six general abilities of an educated person:

1. to acquire knowledge using a variety of methods and sources, and to use this knowledge in his or her life.
2. to cooperate and collaborate with others in identifying, analyzing, and formulating solutions to problems and learning to take the appropriate action.
3. to synthesize and interrelate ideas and concepts from various areas of knowledge.
4. to understand the ethical and moral dimensions of one's own values, their basic assumptions and limitations, and to respond reflectively and appropriately to the value systems of others.
5. to read materials with an understanding of the author's purpose, assumptions and techniques, and respond to ideas critically.
6. to reason logically and analyze objectively, with a sense of openness to new ideas.
Muskegon Community College Catalog

Foundational Skills: The College believes that a successful, meaningful experience in general education occurs when students come to the program adequately prepared to meet its challenges. Therefore, students must demonstrate the following minimum levels of achievement, by either successful testing or satisfactory course completion (a grade of “C” or better) before enrolling in courses which meet the general education requirements:

1. Readiness for college-level writing.
2. A tenth-grade level in reading comprehension and vocabulary.
3. Readiness for understanding and using college-level mathematical concepts.
4. Basic computer skills.

Curriculum Design: The College seeks excellence in education through a general education program which aims to integrate a general body of knowledge with the intellectual abilities for dealing with that knowledge. The College believes that all meaningful human activity requires such integration. The requirements listed below aim to instill in students a broad range of knowledge and skills, and at the same time provide a framework to integrate them into a meaningful whole. Students will meet the general education requirements when they successfully complete required courses which encompass each of the nine areas of knowledge and each of the four higher-level skills. On a practical level, students completing the required course work encompassing these nine areas of knowledge and the four higher level skills will have met the requirements of the MACRAO agreement which eases the process of transferring to a Michigan four-year institution.

Areas of knowledge: The knowledge common to educated men and women can be identified in a number of ways. The nine areas chosen by the College, one of many such patterns, are intended to provide a foundation of general learning on which the student can build his or her own edifice of specialized learning in preparing for a career. The required nine areas of knowledge are:

1. The history of the origins and development of Western civilization’s major ideas and culture to the extent that they have affected our lives. Students will trace the evolution of ideas through the ancient, medieval, and modern eras in the areas of philosophy, government, religion, the arts and science.

2. The history of major ideas and values peculiar to the shaping of American cultures. Students will trace the historical evolution from early settlements to modern times of important ideas Americans have struggled over, such as: the size and function of the national government; individualism versus obligations to society; the impact of religion upon government, society and individuals; technological growth and the environment; materialism versus idealism; the international role of the United States; race relations; attitudes toward gender; equality versus freedom and opportunity; the value of work.

3. The fundamental ideas and methods of the mathematical, natural and physical sciences. Students will examine a brief history of scientific and mathematical thought; understand and use the scientific method and practice of research; examine areas of scientific concern and their ethical implications on both society and the natural world; distinguish between scientific fact, scientific theory, and science fiction; recognize the use and misuse of mathematics and sciences as tools for a greater understanding of human activities outside the scientific realm.

4. The major modern ideas and methods of the social sciences. Students will undertake an exploration of ideas relative to how nations should govern themselves with special reference to democracy and citizen involvement in democracy. Students will examine economic concepts, theories and systems; the principles and methods used by social scientists to attempt to understand individual and group behaviors; and the impact of culture and cultural development on individual and group behavior.
5. **The competing ideologies that influence the modern, international climate.** Students will understand the physical, political, economic, geographical, and cultural features of today's world; the major modern theories and policies of national governments; the basic beliefs of the major world religions; and the major political and cultural differences among nations.

6. **The major ideas and values of the visual and performing arts.** Students will understand the evolution and history of the visual and performing arts and their impact on shaping civilization; understand what an aesthetic experience is and the role of the critic in shaping societal esthetics; understand the process of critical thought and objective evaluation relative to the visual and performing arts.

7. **The theory and practice of good health.** Students will understand and interpret their relationship to and effect upon the environment; understand and experience factors important to the physical, psychological, and social well being of the individual; develop skills and understanding needed to pursue leisure time experiences in an effective and socially responsible way; develop consumer skills necessary to be socially responsible citizens.

8. **The history of major ideas and values in great works of Western world literature.** Students will understand the techniques used by literary artists; recurring themes and ethical issues in our history of literature and how they relate to our lives; the historical influence of Greek mythology, the Bible, and Shakespeare; and the methods of comprehending and evaluating prose, poetry and drama. Students will examine an overview of major British, American, and European authors; major movements in literature, such as realism, naturalism and romanticism; the value and contribution of women and minority writers.

9. **The principles of technology and its impact on society.** Students will examine a brief history of the development of technology, including computers; an overview of applied technology in modern society; what technology can do, cannot do and should not do for individuals, organizations, and society (technological ethics); the perceived future use of technology in society and how we can prepare ourselves.

**Higher-level Skills:** In the process of studying the content of the general education curriculum, the ability to use acquired knowledge is encouraged by the development of four higher-level skills:

1. To speak in a manner that is clear, direct and free of ambiguity, and to listen accurately and empathetically.
2. To write coherently and comprehensively within the conventions of an academic discipline.
3. To understand and perform computations using the concepts of college-level mathematics.
4. To acquire competency in a language other than English.

**THE PURPOSES OF GENERAL EDUCATION**

For the Associate in Applied Science degree at Muskegon Community College

**Associate in Applied Science (AAS) degree programs are designed to meet education and training needs of individuals who desire to enter and/or advance in the workforce, providing skills needed by employers. By working together with representatives of business, industry and health careers we have developed programs that align with labor market demand and provide both the professional and occupational skills required for workers to be successful.**

The collaboration between the College and its community results in outcomes-oriented curricula designed to provide students with immediate employment, career upgrading, or the base upon which to build further education. Students benefit from the practical “hands on” approach that is common among AAS coursework. Local employers benefit from the infusion of well-educated workers into the market.

As a result, AAS programs may serve as either a “school to work” preparation program or a “school for work” training ground. Students may choose to tackle a complete AAS degree program or simply take classes necessary for skill development.
Muskegon Community College Catalog

General education for Associate in Applied Science degrees is education that enhances a student’s life as a citizen and in the workplace. The general education component of the AAS degree programs helps students complement their career education with skills necessary for the world in which they live and work.

AAS general education provides skills necessary for students to master the technical skills required in their chosen field. General education requirements are intended to impart common knowledge, intellectual concepts, and attitudes that every educated person should possess.

Areas of knowledge:
1. Communication—The ability to use various forms of communication more effectively both as a communicator and an observer.
2. Problem Solving—The ability to select and use appropriate, effective approaches and tools in solving a wide variety of problems.
3. Science/Technology—The ability to use knowledge of technology and scientific principles to adapt to a technologically changing society.
4. Mathematics—The ability to understand numerical concepts and possess the skills required for mathematical manipulations.
5. Human Relations—the ability to live and work in changing settings with people of differing backgrounds and effectively contribute as a leader and a follower.

Assessing Student Academic Achievement

The faculty and staff of Muskegon Community College are committed to assessing student learning. We do not want to just offer courses and programs; we want to know if our students are really learning the knowledge and skills they need. Therefore, students should, on occasion, expect to be asked to do such things as complete a survey, take a test (beyond regular classroom tests), or answer questions in an interview as part of the College’s assessment program. The goal of the assessment program is to improve teaching and learning.

Distance Education

Muskegon Community College offers a broad spectrum of distance education opportunities designed to help students overcome barriers of time constraints, child care, or transportation problems. Delivery formats include telecourses, two-way interactive television courses, and an ever-increasing number of on-line courses through the Internet. Students may benefit from the flexibility offered through distance education, which allows for learning schedules to be tailored to individual needs. The College is continually developing new course offerings to deliver to students at a distance using the latest technologies. More current information may be obtained by referring to the current schedule of classes or by making an appointment with a counselor.

ADMISSIONS

ADMISSION

As an “open door” institution, Muskegon Community College welcomes applications from all who wish to attend. The information requested on the application is used solely to help us serve your educational needs more effectively.

Application to the College does not guarantee admission to all courses and programs within the College. The special admission requirements to certain courses and programs may be obtained from appropriate sections of this catalog or by inquiring at the departmental office in question.

Students wishing to enter the Nursing or Respiratory Therapy programs must submit additional applications. Applications for these programs may be obtained at the main entrance receptionist or online.
General Information

Change of Name or Address—Students should promptly notify the Records Office of any change in name or address that occurs while they are enrolled at the College. Name changes must be made in person. Legal proof of name change is required (drivers license, marriage license, social security card, voter registration card).

Matriculation Card—All students will be issued a matriculation card which should be carried at all times. This serves as an I.D. card. It is needed when registering for classes, when borrowing books and materials from the Learning Resource Center, and to obtain student admission rates for athletic and cultural events. It must also be presented when selling used textbooks to the bookstore.

Full-time Student—The term denotes a student who is enrolled for 12 or more credit hours during the Fall or Winter semester or who is enrolled for six or more credits during a Spring or Summer Session. Note, however, earning the associate degree (62 credits) in four semesters will mean carrying an average of 15 ½ credits per semester. Full-time students who wish to graduate in two years must carry more than the 12 hours each semester or plan on attending Spring or Summer sessions as well.

Part-time Student—The term denotes a student who is carrying less than 12 credit hours per semester. Those enrolled for 9-11 credit hours per semester (or five credit hours during the Spring or Summer session) are classified as “three-quarter” time. Six-eight credit hours per semester or three-four hours per session makes one a “half-time” student. If you are applying for financial aid as a part-time student, you should consult the Financial Aid Office for details on just how much help is available to you each semester or session.

REGULAR ADMISSION

If you are seeking admission to Muskegon Community College, obtain an application from your high school counselor or from the Admissions Office at the College. Applications are also available on-line at www.muskegoncc.edu. If seeking regular degree admission, submit evidence of high school graduation, successful completion of the General Educational Development test (G.E.D.), or appropriate testing (call 231.777.0394 for information). You may enter Muskegon Community College at any of four points in the year: Fall Semester (August/September), Winter Semester (January), Spring Session (April/May), and Summer Session (June/July).

Applications should be submitted well in advance of the semester you choose to enter. (Note that some classes on campus, such as community service and apprenticeship classes, do not necessarily begin with the regular starting date of each semester.)

Transfer Students— from other colleges need to submit an application form and have all official transcripts forwarded for evaluation. Transfer students who wish to receive a degree from Muskegon Community College must complete no less than 30 or the last 15 credit hours at MCC and attain a 2.0 or better overall grade point average.

Apprentice Students—will also use the regular application form. Regulation of the number of apprentices in any trade is a negotiated item in labor contracts or is set by the Bureau of Apprenticeship and Training; it is not a decision of the College.

Questions regarding approval for apprenticeship programs should be directed to the Internship Coordinator (231.777.0216).

HIGH SCHOOL GUEST ADMISSION

High school students may be permitted to enroll as guests while still enrolled in high school, with the written consent of their principal or the principal’s designee. Such students must submit a regular application for admission, along with a high school transcript.

High school guest admission must be renewed each semester. High school guests desiring to attain regular student status at the College after completing high school must submit an eighth semester transcript for regular degree status.
DUAL ENROLLMENT
The State School Audit Act PA 148, under Section 216, requires local school districts to use funds allocated by the Act to pay the tuition and fees of a high school junior or senior attending a public or private degree-granting post secondary institution when certain conditions are met. Interested students should contact their high school principal or counselor for further information.

COLLEGE GUEST ADMISSION
Students from other colleges within the state may be admitted as guests by filing a Michigan Uniform Guest Application, which can be obtained from their home institution. Guests should develop a program of study with an advisor at the home institution to insure proper course selection and credit transfer. College Guest status must be renewed each semester.

COMMUNITY GUEST ADMISSION
Individuals who have not completed high school or the G.E.D., or who wish to take selected courses without the intent of earning a degree, diploma, or certificate, may be admitted as Guest (non-degree) applicants. Guest students are eligible to change to regular admission status upon having their high school transcript, G.E.D. test scores or appropriate test results submitted to the Admissions Office. It is the student's responsibility to initiate the change to regular admission status.

CONTINUING EDUCATION ADMISSION
Continuing Education courses and seminars are designed to meet the needs of the community, and vary in scope and length of sessions. They are open to all, and no testing is required. Call 231.777.0227 for additional information or a current "Options" schedule.

RESIDENCY POLICY
Determination of residency status is governed by the following:
To qualify as a district resident, you must have lived within the confines of Muskegon County for six consecutive months prior to the first day of classes for any term.
To qualify as a state resident, you must have lived within the confines of the State of Michigan for six consecutive months prior to the first day of classes for any term; students previously registered as non-residents may change to district resident status upon satisfying the requirements above. A person in the military service of the United States and his/her spouse or minor children shall be considered Michigan or district residents in accord with the requirements above, regardless of where they are stationed. Recently married persons shall be deemed district and/or Michigan residents if the spouse satisfies the requirements above. Initial residency status and change of status shall be determined by the Admissions Office.

It is your responsibility to notify the Admissions Office, prior to the first day of classes for any term, of any change in residence that would affect your residency classification. THE BURDEN OF PROOF LIES WITH THE STUDENT. The above applies only to American citizens, permanent residents and refugees. At least ONE of the following items is required as proof of residency:
Voter registration card
Secretary of State Identification card
Driver’s license
Lease agreement
Property tax receipt (for primary residence)

Residency Status for Military Personnel and Dependents -- Residency is based on the location of the present domicile of the applicant with the six-month requirement waived if the applicant can provide any of the following documents. This waiver is extended to the dependents (spouse and children) of the person named on the Department of Defense 214 or 899 who reside at the same address.
A. Department of Defense 214, Separation from Active Duty Form, showing separation date within 120 days from the first day of the semester;
B. Department of Defense 899, Change of Station Form, showing the Muskegon area as the duty station;
C. Department of Defense 899, Change of Station Form, showing a change of duty station for the head-of-household to an overseas destination or as the result of an emergency mobilization.

FOREIGN STUDENT ADMISSION
Foreign student applicants (F-1) must file a separate Foreign Student Application, which may be obtained from the Admissions Office. Official translated high school transcripts and official documents of financial ability must be submitted before an admission decision can be rendered. Applicants under a status other than F-1 and M-1 may be granted admission for a limited period of time for taking classes. Additional information and validation of required documents can be obtained from the Admissions Office.

ADMISSION OF FORMER STUDENTS
Regular admission to the College is a one-time activity once you have registered for a class. You may register for additional classes without repeating the admission process. If you have not attended recently, however, (more than three years) please submit an application to update your records. Former students are also encouraged to consult with a counselor to discuss course selection.

PROJECT S.A.M.
(STUDY OPPORTUNITIES FOR ADULTS AND MATURE CITIZENS)
Any legal resident of Muskegon County, 60 years of age or older before the first day of the semester in which admission is sought, is eligible to receive a S.A.M. tuition waiver which allows them to register for college credit or continuing education classes which are eligible for state reimbursement. These students may be degree or non-degree seeking.

The S.A.M. waiver does not cover registration fees or any special class fees which are charged in addition to, or in place of the tuition charge, nor does it cover the cost of books, supplies, or other instructional materials not included in the tuition charge. The S.A.M. waiver is not retroactive. Presentation of proof of age and residency to the Admissions Office prior to registration will establish eligibility for the program. Additional information and validation of residency/age can be obtained at the Admissions Office.

NON-CONVENTIONAL CREDIT
Some course requirements may be met by methods other than completing courses. Students may wish to explore with an academic counselor the following options:

ADVANCED PLACEMENT
The College recognizes the Advanced Placement Program of the College Entrance Examination Board (commonly called AP). Students who complete an AP course in high school should take the appropriate examination and submit scores to the Records Office.

LIFE EXPERIENTIAL LEARNING
Credit may also be granted to students who are unusually well prepared in a particular discipline if they can demonstrate that preparation through a process called the Life Experience Assessment Program (LEAP). Consult a counselor for information. Applications are available from the Academic Affairs Office. There is a $100 fee for every eight hours attempted.
Muskegon Community College Catalog

PROFICIENCY EXAMINATION
Credit may be granted for students seeking credit by departmental examination. Applications are available from department chairpersons and the Academic Affairs Office. The $10 test fee is applicable toward credit tuition.

ARTICULATED CREDIT (See page 19)
College credit may be granted for high school vocational classes where agreements have been signed. Applications are available at area high schools. Please consult a counselor for more information.

INDIVIDUAL STUDY COURSES
Students may work with a faculty member in designing special courses to meet their individual needs. A form is available in the Instructional Affairs Office to apply for such an individual study course. The criteria for approval are also available in that office. A student should not begin work on such a course until all approvals are completed and tuition has been paid.

A student may take, as part of his or her regular program, a maximum of ten (10) credit hours in "individual study." The application of these credits towards a given major or minor will be judged by the institution accepting these credits. Each Individual Study Course will carry variable credit (1/2 - 5) as contracted between the faculty member and the student. INDIVIDUAL STUDY COURSE OPTIONS ARE AVAILABLE: To replace existing coursework for the purpose of meeting graduation requirements, to provide additional opportunities within a discipline to a student who has taken all available courses or their equivalent in a subject area, or to supplement transfer credit to meet program requirements.

INTERNSHIP PROGRAM
Muskegon Community College recognizes that there are important elements of business and industry, which cannot adequately be taught in the laboratory or classroom. Therefore, the college has established the Internship Program. The goal of the Internship Program is to provide the student with on-the-job experiences supervised by successful, experienced professionals. This experience shall directly support the development of a student's technical skills, knowledge and career path. The employer shall gain a reliable, flexible and enthusiastic potential employee while assisting in the student's career preparation goals.

Students wishing to participate in the Internship Program should contact the Internship Office at 231.777.0216 to schedule an appointment. Your future can be much brighter with the right work experiences.

JOB SHADOW PROGRAM
The Job Shadow program at MCC offers students an opportunity to receive first-hand knowledge and experience in exploring a chosen career. Students "shadow" a professional, observing them at their place of business, and asking the questions that will help with career decisions. Students can get assistance and more information by calling 231.777.0216 or visiting Room 204.

SPECIAL PROGRAMS AND AGREEMENTS
HONORS PROGRAM
Muskegon Community College offers honors options to eligible students in an attempt to add an extra dimension to the education of academically motivated students.

Honors options permit eligible students to earn an additional credit in certain MCC courses. To earn this additional credit, the student must complete the requirements outlined by the instructor. The student may earn this additional credit hour in the same semester in which the regular course is taken or in the subsequent semester. The student will receive separate grades on his/her transcript for the regular course and
for the one credit honors option.

The basic purpose of honors options is to enable instructors to make challenging and enriching assignments which will enable capable students to gain a more sophisticated knowledge of the discipline, and which will also be academically beneficial to the student. The additional work required on the student’s part should typically require an average of two to three hours per week during the semester.

Honors options are designated on the student’s transcript as “HON” after the course number. To be eligible to take an honors option the student must normally have a minimum 3.5 grade-point average for 12 or more credit hours, or have the instructor’s permission.

Students register for honors options in the same manner as they register for a regular course, except that registration for the honors options can take place only after the semester has begun and the student has had an opportunity to discuss the requirements with the instructor.

For additional information about honors options please contact the program coordinator through the Instructional Affairs Office.

INTERNATIONAL STUDY PROGRAMS

For information on the international programs at MCC, visit the international website at www.muskegoncc.edu. Under this site you will find information on the German and Ireland Exchange programs, international courses, Export Trade Certificate program, calendar of international events, copies of the International Newsletter, and much more.

For further information, call Dr. Sharon VandenHeuvel, international coordinator, at 231.777.0377, or email her at Sharon.Vandenheuvel@muskegoncc.edu.

TALENTED YOUTH SUMMER PROGRAM

Muskegon Community College offers a tuition-free summer opportunity to students within the College’s service area who demonstrate by grades or experience that they can handle the subject area selected. This opportunity is available to high school students who have NOT attained senior status. The nature of this program is to afford local students exposure to “the college experience.” Students are limited to a total of eight credits and enrollment only will be allowed up to class capacity. New course sections cannot be created especially for this group. Applications are sent to area high schools annually early in March. Additional information is available in the Admissions Office.

MCC/HIGH SCHOOL ARTICULATION PROGRAMS

A student with proof of high school completion will receive Muskegon Community College credit applicable to articulated Muskegon Community College programs for high school vocational education courses in which he/she has demonstrated competencies. To be eligible for college credit under this agreement, the student must:

a. Enroll at MCC within 21 months following high school graduation, and
b. Successfully complete (2.0 grade-point average or better) at least six credit hours of 100-level courses or above at Muskegon Community College.

Credits for articulated courses will become part of the total number of credits required for program completion and will appear on the Muskegon Community College transcript by course number, title and credit hour(s). Grades are not recorded.

College credit for articulated courses will be limited to a maximum of 15 credit hours for a certificate program and 30 credit hours for an associate degree program.

Students are encouraged to apply for articulated credit at the time they make application for admission to the College. Application forms for articulated credit are available at area high school counseling offices and from high school instructors in all eligible curriculum areas.
MUSKEGON PARTNERSHIP PROGRAM (MPP)

The Muskegon Partnership Program (MPP) is an academic success program that provides a link between Muskegon Community College (MCC) and Grand Valley State University (GVSU). The purpose of MPP is to help increase diversity at the university while focusing on the "recruitment and persistence of the ethnic MCC student." The mission of the program is to "connect" with these MCC students, and to provide them with GVSU advising while they work toward an associate's, prepare to transfer, and ultimately complete a bachelor's degree. MPP facilitates an effective transition from MCC to GVSU.

Currently enrolled MCC ethnic students who show continuous progress towards an Associate's degree should apply any time during or after their first semester at MCC. Ethnic students who already have an Associate's Degree and have an earnest desire to go to Grand Valley may also apply.

For more information about MPP and GVSU, students, faculty, and staff may:

- Call 231.777.0505 or 777.0507
- Stop by the GVSU Muskegon Office located in the Stevenson Center
- See an MCC Financial Aid Recruiter
- Ask an MCC Counselor
- Pick up an MPP brochure in Gerber Lounge or Room 204

PROJECT AHEAD

Project AHEAD is a cooperative educational venture between the United States Armed Services and various colleges and universities. It is designed to enable students to earn college credits at the same time they are fulfilling their military obligation. Muskegon Community College participates in the program.

Questions regarding Project AHEAD should be directed to the Veterans Affairs Office (phone 231.777.0345).

VETERANS' AFFAIRS OFFICE

Muskegon Community College maintains a full-time Veterans' Outreach Office. The office provides veterans, Reserve/National Guard personnel, eligible dependents, and survivors with current V.A. benefit information, and provides assistance in completing and processing V.A. forms for college enrollment, tutorial assistance, and other benefits. All veterans are encouraged to use these services which are located in Room 100 (phone 231.777.0345).

VETERANS' RESPONSIBILITIES

1. Complete a "request for V.A. certification" card in the Veterans' Affairs Office for every semester you wish to draw V.A. educational benefits. It is recommended that this be done in February for the following Spring and Summer Sessions, and in May for the following Fall and Winter Semesters.

2. Register only for classes required to satisfy the program stated on your V.A. application.

3. Contact the Veterans' Affairs Office before repeating classes.

4. If you withdraw officially or unofficially from any class(es), report the last date of attendance in writing to the Veterans' Affairs Office. If this is not done, MCC will report the last date of attendance of that class as the first date of that class. Overpayment conditions could be created.

5. Maintain a cumulative 2.0 grade-point average.

6. Request that copies of transcripts from all previous institutions attended be sent to the Records Auditor for evaluation.

7. Report changes of program to the Veterans' Affairs Office.

8. Notify the Records Auditor, during the final semester of enrollment, that you plan to graduate. Also, contact the Veterans' Affairs Office before enrolling for additional (post-graduate) courses.
SERVICES TO ASSIST YOU
TESTING CENTER

The Testing Center (TC) is responsible for all non-instructional testing on campus. The TC makes available a wide range of tests used by counselors and other college staff in their work with students who wish to know more about themselves. The goal of the Center is to provide students with the personal information they need for understanding themselves and for making appropriate academic and career decisions.

Students may initiate testing by visiting the Testing Center in Room 353, or by calling 231.777.0394.

PLACEMENT TESTS—

Choosing the courses that are right for you requires careful planning. The results of placement tests can help you make good choices. Therefore, to help you plan and be successful in your classes, the College requires that you complete all placement tests before registering for classes. Please note, if you have a proficiency level of 1 or 2 on both the reading and writing high school MEAP tests, or attain a 10th grade reading level in comprehension and vocabulary on the Nelson-Denny, or an ACT composite score of 22 or greater, and provide the College with proof of that score, some placement tests may be waived. The mathematics placement test is still required. S.A.M. students are exempt from placement testing.

New Students: If you plan to enroll for six or more credit hours, you must complete the following placement tests before registering (see above for exceptions):
1. English - measures writing skills
2. Reading - measures vocabulary and comprehension skills
3. Math - measures basic math through college-level skills

You may choose to take the basic computer competency test and/or the chemistry placement test.

Currently Enrolled Students and Transfer Students: You are generally not required to take the reading placement test if you have completed 15 college credit hours with a cumulative grade-point average of 2.0 or above. Transfer students must have official transcripts sent to MCC from their previous college(s). Students who transfer an equivalent math or English course from another college may also be eligible to waive the math and/or English test. If uncertain about your status, consult an MCC counselor.

Placement test results: If you complete your tests in English, reading, and math; and if you have an MCC student number, your test results will be mailed to you. You may also get your results from the Testing Center.

See page 163 for an explanation of the English placement codes.

In many courses you must demonstrate, before enrolling, that you are READY TO SUCCEED, by scoring at an acceptable level on the reading test (10th grade in both vocabulary and comprehension). If your reading is not at this level or above, you must enroll in RDG 040A or RDG 040C during your first semester.

Based on the math test results, you will be recommended for an appropriate level math course. You must be recommended for a 100-level math course to be exempted from the Math 050 foundational skill requirement.

Based on the computer competency test, you will either have met the computer skills requirement or you must enroll in and successfully complete any CIS course. To meet the College's technology goals, students are strongly recommended to complete CIS 110, CIS 120A, or CIS 129.

If you plan to take less than six credits but would like to take a class with a reading, writing, or math prerequisite, you will still need placement test(s). Talk with an MCC counselor (231.777.0362) or call the Testing Center (231.777.0394) for more information.
PLACEMENT TESTS ARE VERY IMPORTANT.
Students with low scores are required to complete refresher courses before enrolling in College-level courses. Many courses have skill level prerequisites; refer to the current Schedule of Classes and meet with a counselor to be sure you are enrolling in the appropriate class.

COUNSELING
Muskegon Community College's counseling staff offers a wide variety of educational, vocational, and personal counseling services. Academic advising provided by MCC counselors is especially important for students as they work through various degree and program requirements to reach their educational and vocational goals. Career counseling, using a variety of assessment tools, is available for students who are interested in finding careers which build on their interests, aptitudes, experiences, and values. Educational and personal counseling can help students adjust to a new academic environment and resolve problems that may interfere with classes, jobs, and personal relationships.

Counselors are available, by appointment, Monday through Friday, from 8:30 a.m. to 4:00 p.m., and Monday through Thursday, from 5:00 p.m. to 9:00 p.m. Appointments may be made in Room 101 or by calling 231.777.0362.

Walk-in counseling is available Monday through Friday, from 10:00 a.m. to 4:00 p.m., and Monday and Tuesday evenings, from 5:00 p.m. to 7:00 p.m., during the fall, winter and spring semesters, in Room 101. Walk-in counseling is intended for immediate concerns rather than academic advising. Students who need to see a counselor for academic advising and course planning must make a counseling appointment.

COLLEGE SUCCESS CENTER (CS Center)
The CS Center was established to help students realize their full educational potential at MCC. It includes three labs which offer credit courses in writing, math, and reading/study skills, as well as a Tutoring Center. The CS Center works closely with the Testing Center.

CS Center courses are taught either in a classroom setting or on a one-to-one basis; in the latter, assignments are designed to meet the academic needs of the individual. CS Center courses range from basic skills to more sophisticated college-level activities such as skim reading or the writing of research papers.

For the one-on-one courses, weekly scheduled conferences with instructors and paraprofessionals provide constant monitoring of skill development, and assignments are adjusted accordingly. The CS Center is open at least 60 hours a week so that students may use it during their free time.

TUTORING SERVICES
Peer Tutoring – If assistance is needed in a specific course, you may apply to the Tutoring Center, located in the College Success Center. Student tutors recommended by instructors are available to any student on campus. The number of hours per week of free tutoring available to students varies with the number of credits being taken.

Students who wish to become tutors should contact an instructor for a written recommendation, and then report to the Tutoring Center.

Supplemental Instruction (SI) - SI is small group academic assistance, a program shown to increase student performance. It is offered only in specific introductory classes. Check with your counselor or the tutoring and SI supervisor for more information.

Referral Tutoring – If peer tutoring is not appropriate or available, any student, parent or concerned adult may contact the College Tutoring Center to request help in finding a tutor. The College Success Center does not pay for such tutoring, however. Those who prefer referral tutoring must pay the tutor themselves after each session, unless other arrangements are made.

Students who are veterans and use referral tutoring must fill out Form 1990T and submit it to the tutoring supervisor at the end of each month in which tutoring takes place. The veteran will then be reimbursed by the Veterans Administration.

22
SPECIAL SERVICE PROGRAMS OFFICE
SPECIAL POPULATIONS

Additional support services are available to students who meet one of the following eligibility requirements: physically challenged, specific learning disability, economically disadvantaged, non-traditional training participants, single parents, displaced homemakers, limited English proficiency or academically disadvantaged. Special support services include the provision of attendance costs, unlimited peer tutoring, professional instructor assistance, note takers, interpreter services for the hearing impaired, and readers for tests. Other services include: instructional aides, specialized instructional equipment, learning station modification, bilingual implementers, language support for limited English proficiency and other referral services.

Students requesting these services must present documentation supporting their inability to succeed without special support services. A Special Service Programs Handbook describing these services in more detail can be obtained in the Special Service Programs Office located in Room 101.

CAREER SERVICES

Employment Resource Center

The Employment Resource Center is located in the main campus building in Room 204. The Center's primary function is to assist MCC students with off-campus, part-time and temporary employment while attending classes and full-time placement in their chosen fields upon graduation. Current openings are posted for local, state, national and international jobs. Numerous employment resources are available such as handouts and books, and also individualized attention for employment needs.

All services are free-of-charge and are available to adults in the general public. The Center hours are Monday through Friday 8:00 a.m. to 4:30 p.m. For further information, call 231.777.0216 during office hours or leave a message after hours.

Career Resource Center

The Career Center serves the career development needs of students and members of the community. Our main purpose is to educate and assist students in effectively developing, evaluating and implementing career and educational plans. A variety of services are offered in the Career Center, and are designed to help you discover the career that is just right for you. Understanding who you are, what you like and don't like, and what you value are all important questions you will need to answer if you are going to make quality career choices. The Career Center has several different assessment instruments available to help you with this process, learn about your interests, abilities and skills, values, personality, and preferred job characteristics. Most of these assessments are computerized and can be taken fairly quickly. For those who are uncomfortable with the computer, paper and pencil assessments are also available.

Resources available to help you in the career process

- A battery of assessments that can increase your awareness about interests, values, skills, personal style, etc.
- A library of books on various job fields, career options in applicable majors, job search skills, etc.
- Many online tools that can be accessed in the Career Center or anywhere a student has a computer.

To get started with your career preparation, call 231.777.0216 to make an appointment, or stop by Room 204 to browse our career library, use our computers, and begin or continue your career exploration independently. All of our services are free-of-charge.
COSTS
Costs to attend MCC include registration fees, tuition, special class fees, and books/supplies. Please refer to the most recent MCC "Schedule of Classes" for current tuition and fee information. Books and supplies may be purchased in the Bookstore located on campus.

Tuition
Tuition rates are subject to change; please refer to the Schedule of Classes for current rates. The following rates are effective for Winter Semester 2006:

<table>
<thead>
<tr>
<th>Fee Type</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-District</td>
<td>$60.00 per credit hour</td>
</tr>
<tr>
<td>Out-of-District</td>
<td>$90.00 per credit hour</td>
</tr>
<tr>
<td>Out-of-State</td>
<td>$115.00 per credit hour</td>
</tr>
<tr>
<td>Registration Fee</td>
<td>$25.00 (non-refundable) each semester or session</td>
</tr>
<tr>
<td>Technology Fee</td>
<td>$4.00 per contact hour</td>
</tr>
</tbody>
</table>

Excess Contact Hour Rates: There is an additional tuition charge when the number of “contact hours” for a particular course exceeds the number of credit hours granted for that course. Contact hours generally represent the actual number of hours per week that the course meets, including any labs, performance time, or clinical instruction. Please see the current Schedule of Classes publication for courses with excess contact hours and the rate of charge. If the number of contact hours is equal to the number of credit hours, there is no additional charge.

REFUND POLICY
(Subject to change—refer to current Schedule of Classes.)
Muskegon Community College believes that students should be allowed to attend at least one class meeting without penalty. During that class meeting you can review the detailed requirements of the course syllabus and estimate the workload required. This should enable you to make an informed judgment about the course and increase your probability of success.

1. A 100% refund of tuition will be granted if official withdrawal procedures are completed prior to the starting date of any term.
2. Refunds for withdrawal from the College or from single classes will be prorated as follows after the start of a semester:
   - 100% — First day through the 8th day of the semester
   - 50% — 9th day through the 12th day of the semester
   - No refund after the 12th day of the semester.
3. Refunds for withdrawal from the College or from single classes during the Spring or Summer Session are granted as follows:
   - 100% — First day through the 4th day of the session
   - 50% — 5th day through the 6th day of the session
   - No refund after the 6th day of the session.
4. Refunds for withdrawal from modular classes are based on the number of weeks the class meets and are prorated accordingly.
5. In the event of a canceled course, refunds are automatic.
6. Refunds will first be applied to any outstanding debts owed to the College by the student; the balance will be mailed after the 12th day during a regular semester and after the sixth day during the Spring and Summer Sessions.
7. No refunds are granted for Nurses’ uniforms or graduation cap and gown charges once the order has been placed.
COMMUNITY SERVICES

Continuing Education Courses—Selected courses developed and offered through Community Services, if they share the objectives and subject matter of the College’s regular curricula, are assigned equivalent credit hour designations. The fees per credit hour are fixed at the same rate as the regular tuition rates for any given academic year.

Seminars and Workshops—Short-term courses and seminars, for which there is no equivalent in the regular curricula, are assigned fees commensurate with the costs incurred in offering them. Costs for materials and supplies used by students in the continuing education courses or seminars and workshops are borne by the individual student.

Refund Policy—A 100% refund of tuition for courses and fees for short-term seminars will be granted if official withdrawal procedures are completed at least one business day prior to the start date of the offering.

FINANCIAL AID

Muskegon Community College, through its financial aid programs, attempts to assist students who would not otherwise be able to pursue their educational goals. Numerous federal and state programs, as well as College-sponsored and privately funded programs are available to assist qualified students. Most of these programs are described in the following paragraphs.

Students must meet the criteria for particular programs, be in good academic standing, and make normal progress toward a degree in order for funds to be awarded or renewed.

Federal regulations require that, in order for an award to be renewed under a federal program, the student must not owe a repayment on a previous loan or grant. The College also reserves the right to withhold all services—including the issuing of academic transcripts—from any students who have not met their financial obligations to the College.

Applications, Procedures and Deadlines—In order to be considered for financial assistance, students must do the following:

1. Be accepted for admission to the College as a regular student (new students must submit a completed Application for Admission to the Admissions Office).
2. Complete and submit a “Free Application for Federal Student Aid.” Request that a copy be sent to Muskegon Community College (College Code #002297). This is required for all aid programs based on financial need.
3. Immediately respond to any requests. Additional documentation, including copies of Federal tax returns, may be needed to complete your financial aid file.

Admission and financial aid applications, and the “Free Application for Federal Student Aid” may be obtained from a high school guidance office, or from the Financial Aid Office at the College. In order to receive full consideration for financial assistance, completed applications must be on file at the College by the following dates:

- for FALL SEMESTER .................................................. May 1
- for WINTER SEMESTER ........................................... October 1
- for SPRING/SUMMER SESSIONS ................................ March 1

Applications received after these dates will be considered on a first-come, first-served basis, if funds are available.

Most financial aid is awarded for only one academic year at a time. Students must submit new applications in order to receive consideration in a subsequent year.
FEDERAL PROGRAMS

PELL GRANT

PELL Program grants are available to students in financial need. Grants range from $400 to $4,050. The actual amount of each grant depends upon the student's eligibility number and the number of credit hours being carried each semester. A PELL award may be used during the Spring/Summer Sessions as well as during the Fall and Winter Semesters, if the student has not been enrolled as a full-time student during both the Fall and Winter Semesters. To be eligible to receive any funds, most students must be enrolled at least half-time.

Awards are prorated according to the number of credit hours carried:

- 1-5 credits............................................................. less than 1/2 time award
- 6-8 credits............................................................. 1/2 time award
- 9-11 credits............................................................ 3/4 time award
- 12+ credits............................................................. full-time award

Students apply for a PELL Grant by completing the “Free Application for Federal Student Aid.”

SUPPLEMENTAL EDUCATION OPPORTUNITY GRANT (SEOG)

The SEOG Program funds are available to students with exceptional financial need which has not been met through other financial aid programs. Grants may range from $100-$4,000. Preference is given to full-time students who show exceptional financial need.

COLLEGE WORK-STUDY PROGRAM (CWSP)

The CWSP provides part-time employment of up to 20 hours per week to students in financial need. Preference is given to full-time students who have no other source of employment, either on or off campus.

FEDERAL FAMILY EDUCATION LOAN PROGRAMS

The Federal Government sponsors a variety of low-to-moderate interest loan programs through banks and other commercial lenders. Interest rates are variable, and range from about 3% to 9%. Information and applications for the following programs are available from local banks and other lenders.

STAFFORD LOAN

The Stafford Loan Program provides long-term, low interest loans to students. Before applying for a Stafford Loan, the student must first apply for the Federal Pell Grant Program. A student who demonstrates financial need based on federal guidelines may qualify for an interest-subsidized loan (i.e. the Federal Government pays the interest while the borrower is in school).

Students who do not show need may qualify for a unsubsidized loan, and pay the in-school interest themselves. Repayment of the principal of subsidized and unsubsidized loans does not begin until six months after the borrower ceases half-time attendance.

PARENT LOAN FOR UNDERGRADUATE STUDENTS (PLUS)

Parents of students under the age of 24 may borrow under this program. The PLUS Loan is not based on financial need, and neither the parent nor the student has to apply for any federal aid program before applying for a PLUS Loan.

STATE PROGRAMS

MICHIGAN COMPETITIVE SCHOLARSHIP PROGRAM

The Michigan Competitive Scholarship Program provides tuition grants of up to $1,300 per academic year. Eligibility is based on both financial need and academic achievement. Students must take the A.C.T. test no later than December of their senior year in high school, and complete their “Free Application For
Federal Student Aid” by the first of March. Students may receive up to ten full semesters of assistance, provided they renew their application each academic year. Further information may be obtained from the high school guidance office.

**MICHIGAN ADULT PART-TIME GRANT PROGRAM**

This program is available for adult Michigan residents who enroll as part-time students (3-11 credit hours per semester) and demonstrate need. Eligible students may receive up to $600 per academic year for up to two years. Eligible students must:

1. Demonstrate financial need as an independent, self-supporting individual.
2. Be a legal resident of the State of Michigan for at least 12 months prior to the semester in which the grant is awarded.
3. Be out of high school (other than as a G.E.D. or Adult Education Program enrollee) for at least two years.
4. Not be in default on the repayment of a Michigan Guaranteed Student Loan or Auxiliary Loan.

Preference is given to students who show the greatest financial need and are over the age of 24.

**MICHIGAN EDUCATIONAL OPPORTUNITY GRANT PROGRAM**

This program is available for Michigan residents with exceptional financial need who enroll at least half-time (6 credit hours per semester). Grants may range up to $1,000 per academic year. Preference is given to full-time students whose financial needs have not been met through other financial aid programs.

In order to qualify, a student must have been a legal resident of the State of Michigan for at least 12 months prior to the semester in which the grant is awarded.

**MICHIGAN TUITION INCENTIVE PROGRAM (TIP)**

The TIP Program provides grants to cover tuition and fees for certain low-income students who graduate from high school or complete a GED after May 1, 1988 and before their 20th birthday. The TIP Program may cover up to 24 credit hours per year, with a maximum of 80 credit hours. TIP students who complete an associate's degree or at least 56 credits at the community college level may be eligible for additional funding if they transfer to a four-year Michigan college or university.

Students apply for the TIP Program by submitting the “TIP Program Application” before graduating from high school. The application is sent to the student by the TIP office.

**MICHIGAN WORK-STUDY PROGRAM**

The Michigan Work-Study Program provides part-time employment for Michigan residents who demonstrate financial need and enroll at least half-time (6 credit hours per semester). In order to be eligible, students must meet the same eligibility criteria as for the federal College Work-Study Program, and must also have been a legal resident of the State of Michigan for at least 12 months prior to the beginning of the semester in which the student is awarded the aid. Preference is given to full-time students who have no other source of employment, either on or off campus.

**MICHIGAN ALTERNATIVE STUDENT LOAN PROGRAM (“MI-LOAN”)**

The MI-Loan Program provides low interest loans to creditworthy students who do not qualify for other aid programs, or whose aid is less than the full cost of attendance. ("Costs" include tuition and fees, books and supplies, transportation, room and board, and miscellaneous personal expenses for school.) The MI-Loan Program is not based on need; however, a student must apply first for need-based aid before applying for a MI-Loan. Loans may range from $1,500 up to the full cost of attendance. Information and applications are available from the Financial Aid Office or by contacting the MI-Higher Education Student Loan Authority, P.O. Box 30051, Lansing, MI 48909.
OTHER FEDERAL AND STATE PROGRAMS
VETERANS’ PROGRAMS
Veterans, veteran dependents/survivors, and Reserve/National Guard personnel may be eligible to receive aid under one or more of the programs listed below. Applications for federal programs may be obtained from any regional Veterans Administration Office. Applications for the state program may be obtained by contacting the Michigan Veterans Trust Fund, Information and forms are also available from the College’s Veterans’ Affairs Office. The Veterans’ Affairs Office will also assist students in completing forms for other veteran benefits.

CHAPTER 30 — This federal program provides educational benefits for veterans who entered military service after July 1, 1985. Veterans who entered military service before January 1, 1977 and served actively for at least two years after July 1, 1985 may also be eligible (Montgomery GI Bill).

CHAPTER 31 — This federal program provides educational benefits to eligible disabled veterans (Veterans Vocational Rehabilitation).

CHAPTER 32 — This federal program provides educational benefits on a matching fund basis to eligible veterans who contributed while in the service (V.E.A.P.).

CHAPTER 35 — This federal program provides educational benefits to children (between the ages of 18 and 26), spouses, and widows/widowers of totally disabled or certain deceased veterans.

CHAPTER 106 — This federal program provides educational benefits to persons who entered a six-year Reserve or National Guard obligation after July 1, 1985 (Selected Reserve/National Guard GI Bill).

CHAPTER 107 — “Reserve Educational Assistance Program” (REAP). This new program pertains to certain individuals who were activated after September 11, 2001 either eligible for education benefits or eligible for increased benefits, depending on their status.

The Children of Veterans Tuition Grant (MI PUBLIC ACT 245) — This state program provides benefits for children (between the ages of 16-26 years) for eligible totally disabled or deceased Michigan veterans. Eligible students may be enrolled at least half-time and may receive up to $2,800 per academic year for tuition and fees. Applications are available from MI Department of Treasury, Office of Scholarships and Grants – MHEAA, P.O. Box 30462, Lansing MI 48909-7962.

REINSTATED ENTITLEMENT PROGRAM — This federal program provides benefits for some veteran dependents, while in school, who are no longer eligible for Social Security benefits (R.E.P.S.).

DEATH INDEMNITY COMPENSATION — This federal program provides benefits, while in school, for certain children (under the age of 23) of certain deceased veterans (D.I.C.).

VOCATIONAL REHABILITATION SERVICES PROGRAM
This state program provides assistance to students who have physical, mental, or emotional disabilities. Information may be obtained by contacting any Michigan Department of Career Development – Rehabilitation Services District Office.

NATIVE AMERICAN TUITION GRANTS
U.S. Bureau of Indian Affairs — This federal program provides financial assistance for needy Native Americans. Applications may be obtained by contacting the U.S. Bureau of Indian Affairs, or your tribal chairman. Students must also apply for financial aid through the College and submit the “Free Application for Federal Student Aid.”

COLLEGE PROGRAMS
MCC BOARD OF TRUSTEES SCHOLARSHIP
This program provides tuition scholarships to high school graduates who have achieved a cumulative high school grade-point average of at least a 3.20. It is also available to students who complete high school through a home-schooled program and achieve a composite score of at least 24 on the ACT test. In addition, the student must meet the following criteria:
1. Be a legal resident of Muskegon County at the time of high school completion; OR, be a non-resident of Muskegon County at the time of high school graduation, but a legal resident of the State of Michigan, AND graduate from a Muskegon County high school.
2. Submit the “Board of Trustees Scholarship” application by the stated deadline.
3. Enroll as a full-time student (at least 12 credits per semester) no later than the Fall Semester following high school completion.

A student whose high school grade-point average is at least 3.50, or a Home-Schooled student whose ACT composite score is at least 24, is eligible for an award of up to $500 per year. This award is renewable for a second year, provided the student maintains a cumulative GPA of at least 3.00 at MCC.

A student whose high school GPA is between 3.20 and 3.49 is eligible for an award of up to $200 per year. This award is also renewable for a second year, provided the student maintains a cumulative GPA of a least 2.70 at MCC.

Financial need is not a criterion for this award. Applications may be obtained from county high schools or from the Financial Aid Office at MCC.

S.A.M. TUITION WAIVER
Muskogon County Residents who are 60 years of age or older may enroll under the “Study Opportunities for Adult and Mature Citizens” (S.A.M.) program. This program waives tuition for both credit and audited courses. Financial need is not a criterion for this program.

PERFORMANCE-BASED SCHOLARSHIPS IN ACADEMIC AND PERFORMANCE AREAS
This program provides tuition grants to students who demonstrate a particular creative talent (for example: in art, music, drama, dance, creative writing, etc.) or a high level of achievement in a certain academic area. Students are nominated by the faculty of each academic department and each department sets its own guidelines for selection of students. Recipients are normally expected to participate in the activities of the department and/or maintain a specified level of academic achievement within their program of studies.

This program is not based on financial need. Grants may range up to full tuition, and may be renewed upon the recommendation of the department. Information may be obtained by contacting the Chairperson of the academic department in which the student is interested, or from the Financial Aid Office at MCC.

ATHLETIC GRANT-IN-AID
These grants, ranging up to full tuition, are available to students who demonstrate collegiate-level athletic ability, carry a minimum of 12 credits per semester, and participate in one of the intercollegiate sports offered at MCC. Students must maintain academic eligibility in order to participate in intercollegiate athletics as well as to receive a grant.
MCC SHORT TERM LOAN FUND, ELMER NICHOLS MEMORIAL LOAN FUND
and WARREN GOETHEL EMERGENCY LOAN FUND

Loans from the first two of these funds—which are provided by individual and community donations
and by the Muskegon Exchange Club—are available to students who need assistance during one semester.
Loans may be obtained for up to $300 for tuition and fees, and must be repaid in accordance with the
promissory note. A $5 processing fee is charged for each loan, but no additional interest is charged unless a
student is delinquent in repaying the loan. Applications are available from the Financial Aid Office and the
Business Office.

The Warren Goethel Emergency Loan Fund, sponsored by the Carpenter Paper Company, is available
to students in the Graphic Reproduction Technology Program. Loans for tuition, fees, books, or emergency
expenses must be repaid within 90 days or by the end of the semester in which they are awarded, whichever
comes first. A $5 processing fee is charged for each loan, but no additional interest is charged unless a
student is delinquent in repaying the loan. Applications are available from the Financial Aid Office or the
Graphic Arts Department.

LOCAL COMMUNITY PROGRAMS

Many local clubs, businesses, and agencies sponsor scholarship programs. High school students
should contact their guidance counselor for information on these sources of financial aid.

Many companies sponsor scholarships for their employees and/or children; students should check
with the personnel offices of their own or their parents' employers.

OTHER COLLEGE PROGRAMS

The College also administers a variety of scholarships and grant funds donated annually by individuals,
businesses, and community agencies. Information and applications may be obtained from the Financial Aid
Office for the following funds:

- Amos Nordman Foundation Scholarship
- Archie McCune Journalism Scholarship
- Blue and Gold Scholarship
- Dekker Scholarship
- F. Charles Raap Public Service Scholarship
- Robert J. Summers Scholarship
- School Zone Publishing Scholarship
- VanDerden Scholarship
- Samuel Westerman Foundation Scholarship

SATISFACTORY PROGRESS POLICY FOR FINANCIAL AID RECIPIENTS

To qualify for financial aid, a student must make satisfactory academic progress towards the completion
of a degree program. This policy applies to all students who apply for help from an Federal or State
financial aid program. It also applies to any other program administered by the College which requires
satisfactory academic progress as a criterion for eligibility. This policy is separate from the College's general
probation/dismissal policy (see “Dismissal, Academic” in the index of the college catalog).

Students are making “Satisfactory Academic Progress” if they meet the following conditions:

1. Maintain a cumulative grade-point average (GPA) of not less than the following:
   CREDIT HOURS COMPLETED  MINIMUM GPA REQUIRED:
   1 – 11 ................................................................. 1.50 cumulative
   12 and above ................................................... 2.00 cumulative

2. Complete with a passing grade (that is, an A, B, C, D, or P, including “F” or “-”) two-thirds of the
cumulative hours attempted. All withdrawal grades, incompletes, no-credit grades, and repeat
classes are considered as hours attempted.
3. Complete their declared major within the maximum limit: for FEDERAL aid programs, once you have attempted 150% of the number of credits normally required to complete a degree, you will not be eligible for any additional Federal aid at MCC. Transfer credits classes do not count in the calculation of the GPA, but they may be included in the calculation of the Maximum Limit.

<table>
<thead>
<tr>
<th>Credits Required</th>
<th>150% Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular ASA/AAS degree</td>
<td>62</td>
</tr>
<tr>
<td>Nursing</td>
<td>84</td>
</tr>
<tr>
<td>Respiratory Therapy</td>
<td>103</td>
</tr>
<tr>
<td></td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>155</td>
</tr>
</tbody>
</table>

If a student fails to make satisfactory academic progress at the end of a semester, she/he will normally be allowed to receive aid for an additional probationary semester. If the student still has not made satisfactory academic progress at the end of the second semester, she/he may not be eligible to receive any further financial assistance until she/he has 1) raised the cumulative grade-point average up to the minimum GPA required, or 2) earn enough credits to meet the minimum cumulative required. If the student needs to take any classes to make satisfactory academic progress, all expenses are the responsibility of the student.

LOSS OF ELIGIBILITY, APPEAL, AND REINSTATEMENT

Any student who is denied aid under this policy has the right to appeal. ALL APPEALS MUST BE IN WRITING and addressed to the Financial Aid Review Committee, c/o the Financial Aid Office, Room 100. The Committee will normally consider such things as illness, a change in job schedule, or other extenuating circumstances (which were beyond the reasonable control of the student), to be grounds for a successful appeal. The student must be prepared to offer any proof or documentation (for example, a doctor’s statement) if appropriate.

If you want Federal aid to earn a second degree (or additional classes leading to a bachelor’s degree at another school), you must appeal in writing, stating your academic goal, and provide documentation (such as a “graduation audit”) of the classes needed to accomplish this goal.

This policy states the minimum required for most financial aid programs. However, some scholarship and loan programs require a higher standard (usually a higher GPA). Therefore, you may qualify for most aid programs by meeting the above conditions, but be denied a specific scholarship or loan unless you raise your GPA or pass additional credit hours.

FINANCIAL AID REFUNDS

Financial Aid recipients who withdraw from classes will have their tuition accounts adjusted according to the College’s regular tuition refund policy (see “Refund Policy”). Each semester’s refund dates are printed in the “Schedule of Classes.” If you find it necessary to withdraw during a semester, you should notify the Records Office in person or by phone as soon as you can.

Federal aid recipients who withdraw from ALL classes before they complete 60% of the semester may have to repay a prorated portion of the federal aid they received.

REGISTRATION INFORMATION

Students are responsible for their own educational planning and course selection. The College does offer many services to assist the student.

Testing—Before registering for classes you must take placement tests which will help you choose the right courses. See “TESTING” on page 21.

Counseling—Schedule an appointment to see a counselor early, but preferably after taking the placement tests. The counselor can assist you in curricular planning and with other concerns you may have. See “COUNSELING” on page 22.

Career Center—Stop in Room 204 if you wish to explore career options or review materials related to your career choice.
Registering—Obtain a copy of the class schedule. These are available three times a year. Fall and Winter Semesters are 15 weeks in length. Spring and Summer Sessions are offered with a variety of start and ending dates. Become familiar with the schedule. You will be allowed to register according to your Student Number. Register as soon as you are eligible to ensure your place in the classes you desire.

In the Schedule of Classes, please note that night classes can be identified by darker print; "R" stands for Thursday; some classes are held off campus—be sure to check the location of the class.

Credit Hour—As a rule of thumb, each credit hour equals one hour of class or two hours of laboratory work per week. Exceptions are noted in course descriptions.

Employment and Classload—Many students find it necessary or even desirable to be employed while attending college. While enrollment on a full-time basis is very demanding, you may find that you can maintain satisfactory grades even while working part-time. The following table provides general guidelines for those students who plan to work:

<table>
<thead>
<tr>
<th>CLASSLOAD (Semester hours)</th>
<th>WORKLOAD (Hours per week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 or more</td>
<td>15 or less</td>
</tr>
<tr>
<td>10 - 12</td>
<td>24 or less</td>
</tr>
<tr>
<td>7 - 9</td>
<td>32 or less</td>
</tr>
<tr>
<td>3 - 6</td>
<td>40 or less</td>
</tr>
</tbody>
</table>

HOW TO REGISTER

Telephone and On-Campus Registration—Check the class schedule and call or come in according to the time assigned to your student number. Be prepared to give the following information: (1) Name and Student Number, and (2) Section number for each class for which you wish to register. Within a week you will receive a copy of your schedule in the mail, which will also indicate the amount you owe for tuition and fees and the deadline for payment.

Online Registration—You may also register online at www.muskegoncc.edu. Name, Student Number, and class section number(s) are required.

When you receive your schedule—(1) Check to see if all information is correct, and (2) Pay your tuition by the due date. If you do not pay by the due date, you will be dropped from your classes. You may re-register, but you must pay tuition at that time (course selection may be limited).

Adding Courses—Prior to the beginning of semester or session, you may add courses during the time designated in the schedule of classes for that semester. A student must have written instructor permission to add a class once it has met. Regarding online classes, a student must have written instructor permission to add a class after its published “start date.” Refer to the current Schedule of Classes for “start dates.”

Dropping Courses—(Other than complete withdrawal from the College)—You may drop courses during the time specified in the Schedule of Classes by contacting the Records Office in Room 106. If changing courses/sections after the drop period, students may only transfer from one section of a course to another section of the same course. Students attempting to drop and add courses of different names outside of the 100% refund period will be billed for tuition accordingly.

GENERAL ACADEMIC POLICIES

Audit Policy

MCC permits students to register for college credit courses on a non-credit (audit) basis. Those who wish to do so should consult with a member of the counseling staff regarding College policies and procedures for audit status enrollment.
These policies include the following:

1. Students may audit courses so long as they (a) register specifically for audit status; (b) pay regular tuition and fees as listed in the official publications of the College; and (c) comply with all assignments, projects, tests, and learning experiences required of credit-status (regular status) students unless they explicitly make another arrangement that is mutually agreeable to both instructor and student.

2. Audit status students should realize that unless they complete all regular course requirements it will probably not be possible to convert from audit status to credit status at a later date. Audit status students who have completed all regular course requirements to date and wish to change from audit status to credit status may request the change at the Records Office. Such petitions must include a note from the instructor stating the student has completed all regular course requirements to date. This request must be processed prior to the final examination.

3. Students who register for a credit class cannot change to audit status.

4. For students who complete all requirements, instructors will record the progress of audit students in the same manner as credit students. A grade of “AU” will be recorded on the audit status student’s transcript at the end of the semester, and will not be used to compute grade point averages.

Academic Withdrawal Policy

1. You are strongly encouraged to consult with your instructor and a counselor prior to processing a withdraw form, as the situation prompting withdrawal can often be resolved in some other way to your advantage.

2. You are entitled to withdraw from a course and receive a “W” grade through the eighth week of the semester, through the fourth week of a session, or through the eighth day of classes for 3.5 week modular courses.

3. After the eighth week of a semester, and through the last regular day of all classes and before final examination week, you may withdraw from a course and receive either a “WP” grade (Withdrawal—Passing) or a “WF” grade (Withdrawal—Failing). NO WITHDRAWALS WILL BE ACCEPTED DURING FINAL EXAMINATION DAYS. The same policy applies, on a pro-rated time schedule, for sessions and modular courses.

4. Exceptions to the policy regarding WP and WF grades can be made only by the instructor.

5. Grades of W, WP, and WF are not used in computing grade point averages.

6. Instructors may take the initiative to withdraw a student for just cause at any time.

7. Any student unable to complete the withdrawal process because of injury, illness, or other reason should contact the Records Office immediately. (For regulations and procedures governing refunds, please refer to the Refund Policy.)

Attendance – You are expected to attend all sessions of the classes in which you enrolled. Students with excessive absences may be withdrawn from the class at the discretion of the instructor. Instructors who do not take attendance into account when determining a student’s status in the course must maintain other consistent means of showing participation on the part of the student.

Changing a Grade by Repeating a Course – In order to eliminate the earlier grade from a repeated course, a student must initiate a Change of Grade Request in the Records Office. The first grade will be changed to a “WR” which is not computed in the student’s GPA; only the second grade will be computed. Students are advised, however, that some colleges and universities compute grade point averages differently for repeated courses. Upon transfer, the student’s GPA might be re-computed, and thus be lower than the GPA computed by MCC.
Re-evaluation of Grades For An Entire Semester (Performance Agreement) – The College permits students within specific and defined guidelines to petition for removal of grades for an entire semester by submitting a “Performance Agreement” form. The student must see a counselor to discuss and initiate the agreement.

Withdrawal-Illness – The Petitions Committee may allow a “WI” if a qualified professional (doctor, psychologist, etc.) provides written evidence of physical or mental illness. The initiative for such action rests with the student, and should be initiated in the semester in which it occurs, except under extenuating circumstances.

Academic Probation – Any student who receives a cumulative grade point average of less than 2.0 (“C”) for 12 or more semester hours of credit will be placed on academic probation.

Academic Dismissal – Students placed on academic probation for two consecutive semesters may be dismissed from the College for one semester. Normally, such dismissal occurs during the Spring Session, and the student is prohibited from enrolling for the Fall Semester. However, students who have been dismissed may enroll in classes for the Spring and/or Summer Session in order to correct their academic deficiencies. Those who earn a 2.0 grade point average or better for a minimum of three credit hours during the Spring and/or Summer Sessions will be permitted to enroll on a probationary status for the Fall Semester.

If the dismissed student enrolls for the Fall Semester and then fails to achieve a grade point average of 2.0 (“C”) during the Spring and/or Summer Sessions, he/she will be dropped from all classes. Refunds will be handled through the Business Office.

Any student who is dismissed from the College may appeal to the Petitions Committee for reinstatement. The Petitions Committee will review the student’s progress and permit re-entry if they think the student has a reasonable chance for success in a subsequent semester. Students who do not appeal will not be allowed to enroll for the dismissal semester.

Student Computer Use Guidelines – MCC has established guidelines for student use of college computers and programs, which includes access to the Internet. The guidelines are posted in computer labs and are also listed in the Student Handbook. Everyone who uses computers on campus is expected to adhere to these guidelines.

RECORDS
NOTIFICATION TO STUDENTS OF RIGHTS UNDER FERPA

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

The right to inspect and review the student’s education records within 45 days of the day the College receives a request for access. Students should submit to the Director of Records and Registration written request that identify the record(s) they wish to inspect. Records will be available for review within two (2) business days of receiving the request. The College will make arrangements for access and notify the student of the time and place where the records may be inspected.

The right to request the amendment of the student’s education record that the student believes is inaccurate or misleading. Students may ask the College to amend a record that they believe is inaccurate or misleading. Student should submit to the Director of Records and Registration in written request, clearly identify the part of the record(s) they want changed, and specify why it is inaccurate or misleading. If the College decides not to amend the record as requested by the student, the College will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

The right to consent to disclosures of personally identifiable information contained in the student’s education records except to the extent that FERPA authorizes disclosure without consent. One exception, which permits disclosure without consent, is disclosure to school officials with legitimate educational
interests. A school official is a person employed by the College in an administrative, supervisory, academic, research, or support staff position; a person or company with whom the College has contracted (such as an attorney, auditor, or collection agency); a person serving on the Board of Trustees; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.

The right to file a complaint with the U.S. Department of Education concerning alleged failures by Muskegon Community 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

DIRECTORY INFORMATION
The College designates certain information as “directory information.” This may be disclosed without violating FERPA. It includes:

1. Student’s name, address, telephone number
2. Major field of study
3. Weight and height of athletes
4. Date and place of birth
5. Participation in officially-recognized activities and sports
6. Dates of attendance, degrees, date of graduation and awards
7. Photographs

Directory information does not include student identification numbers, Social Security numbers or other personally identifiable information.

NON-DISCLOSURE FORM
Students wishing the College to withhold directory information on them may do so during the first week of classes by submitting the Non-Disclosure form to the Director of Records and Registration. Forms are available in the Records Office, Room 104. A new Non-Disclosure form must be completed each academic semester/session.
Muskegon Community College Catalog

DISCLOSURE OF EDUCATION RECORDS

Muskegon Community College will not disclose student records to anyone other than the student (including the student's parents), without the student's written permission. However, FERPA does establish several exceptions that allow the institution to disclose student records without the student's prior written consent. Some of those exceptions are:

1. To other school officials with a legitimate educational interest.
2. To officials of other schools in which the student seeks to enroll.
3. In connection with a student's application for, or receipt of financial aid, as necessary to determine the eligibility, amount or conditions of the financial aid, or to enforce the terms and conditions of the aid.
4. If disclosure is necessary to protect the health or safety of the student or other persons in a health or safety issue.
5. To comply with a judicial order or to respond to a lawfully issued subpoena, provided the College first make a reasonable attempt to notify the student.
6. Directory information as defined by Muskegon Community College. You should always contact the Director of Records and Registration before releasing student records to a third party, even if you think one of these exceptions applies.
7. To certain officials of the U.S. Department of Education, the Controller General, and the state or federally supported education programs.
8. To organizations conducting certain studies for or on behalf of the College
9. To accrediting organizations to carry out their accrediting functions
10. To parents of an eligible student who claim the student as a dependent for income tax purposes—IRS Code of 1986, Section 152.
11. To an alleged victim of any crime of violence of the results of any institutional disciplinary proceeding against the alleged perpetrator of that crime with respect to that crime.
12. Veterans Administration Officials in response to requests related to VA programs.
13. Representative of the Immigration and Naturalization Services (INS) for purposes of the coordinated interagency partnership regulation international students (SEVIS).

Class Standing—For the purposes of records and reporting, students are classified as freshmen if they have completed 25 credit hours or less, as sophomores if they have completed 26 credit hours or more.

Transcripts—A copy of the academic record of a student. A $2.00 fee is charged for each requested copy. Mail-in requests or telephone requests for transcripts also cost $2.00 per single copy. An official transcript is one that is received directly from the issuing institution. It must bear the College seal, date and an appropriate signature. Transcripts received that do not meet these requirements are not official and will be rejected for permanent use.

Request forms are available in the Records Office, Room 104.

Graduation Requirements—Students who graduate from Muskegon Community College will be awarded an Associate in Science and Arts degree, Associate in Applied Science degree, a certificate, or a diploma. Graduation requirements for the Associate degree include two credits in physical education. Refer to program pages for specific courses which will fulfill graduation requirements. It is important to work with a counselor in planning your academic program. Not less than 30, or the last 15 hours in a degree program, must be taken at Muskegon Community College, and candidates must maintain an overall minimum 2.0 “C” grade point average in their Associate Degree program. Health programs may have a different GPA requirement. The maximum number of cooperative internship credit hours that may be applied toward an Associate Degree is 12, and many programs permit even fewer. Consult the course requirements listed in this catalog for the maximum hours permitted by the business or technical program you wish to pursue. Individual departments make their own decisions about accepting work experience credits transferred from other institutions, or from other programs within MCC. Requests for exceptions to these graduation requirements should be made to the appropriate department head.
requirements must be brought before the Petitions Committee, with the full concurrence of the department(s) involved.

**Application for Graduation**—If you have earned at least 40 credit hours and wish to apply for graduation you must file for a graduation audit in the Records Office. The application must be turned in no later than 90 days prior to the end of the semester or session in which they plan to complete requirements for their degree.

The graduation audit will be based on the requirements in effect in the printed catalog at the time of the student’s initial enrollment, unless updated catalog requirements are specifically requested. (Students may not apply for graduation under requirements that were printed for a year they were not in attendance at the College.) Students returning to Muskegon Community College after an absence of FIVE YEARS OR LONGER will be under the requirements of the current catalog.

Students are not eligible for graduation until all delinquent tuition, fees, and fines have been paid. The student is responsible for meeting all graduation requirements.

**Multiple Degrees**—You may earn and be awarded two or more degrees (and/or certificates), provided that all academic requirements for the degrees have been met. A graduation audit will be conducted for each degree requested on the application for graduation. Multiple diplomas or certificates will be awarded where appropriate.

**GRADING SYSTEM**
Final grade reports are mailed to you at the end of each semester or session. Only the final grade is posted on your academic record in the Records Office. At the discretion of individual faculty members, mid-term grades may be posted at designated places during the Fall and Winter semesters.

**Quantitative Grade Values**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>D+</td>
<td>1.3</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>E</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Non-quantitative Grades (not computed)**

- P Pass
- NP No Pass
- W Withdrawal
- WF Withdrawal—Failing
- WP Withdrawal—Passing
- WR Withdrawal—Repeat
- WA Withdrawal—Agreement
- WI Withdrawal—Illness
- WM Withdrawal—Military Activated
- CS Community Service
- AU Audit
- I Incomplete

**Pass/No Pass**—These grades are not optional, but a standard grading system for particular courses.

**“Incomplete” Policy**—When a student is unable to complete all of the required work for a course because of illness or other unpredictable circumstances, the student may request an Incomplete (I) grade. When requested by the student, the instructor’s judgment will determine whether the incomplete grade will be assigned. If the instructor does not deem the circumstances to be appropriate for an Incomplete (I), the student may elect to withdraw from the course according to the withdrawal policy.

Although shorter time periods may be assigned on a case-by-case basis as specified on the Incomplete Grade Form, “I” grades must be completed within one year of the official occurrence of the grade.

Failure to complete an “I” grade by the deadline date specified on the Incomplete Grade Form will result in the assignment of the grade specified on the Form.

The Incomplete Grade Form must accompany all incomplete grades submitted.
Grade Point Average (GPA) — Each letter grade has a point value as indicated above. The number of grade points earned for each course is found by multiplying the credit value of the course by the point value of the final grade. For example, a student with a final grade of “B” in Political Science (PSCI) 111 would earn 12 grade points, since a “B” has a point value of 3, and Political Science 111 is a 4-credit course.

The semester grade point average is calculated by adding the total points for all courses and dividing by the total number of credit hours taken during the semester.

Example:

- English 101 .......................................................... 3 credits, grade of A = 12
- Political Science 111 ................................................. 4 credits, grade of C = 8
- Physical Science 101 .................................................. 4 credits, grade of B = 12
- Art 198 ..................................................................... 3 credits, grade of D = 3

Total: ............................................. 14 credit hours, with a total of 35 points; 35 divided by 14 = 2.50.

The cumulative grade point average is found by dividing the total of all points earned in all semesters by all credits taken to date.

Academic Load — Students are not permitted to enroll for more than 18 credit hours during a regular semester or for more than nine during a Spring or Summer session without the approval of a counselor, dean, or associate dean.

Dean’s List — A Dean’s List will be prepared after each semester and summer session naming students who have earned a (minimum) GPA of 3.5 over the last number of sessions that total at least 12 grade-point credit hours taken at MCC. A student will be reported once for any subsequent consecutive group of sessions meeting this requirement up to a maximum total of five times for the Dean’s List.

President’s List — A President’s List will be prepared after each semester and summer session naming students who have earned a GPA of 4.0 over the last number of sessions that total at least 12 grade-point credit hours taken at MCC. A student will be reported once for any subsequent consecutive group of sessions meeting this requirement up to a maximum total of five times for the President’s List.

COMMUNITY SERVICES

The College offers courses, workshops, seminars, and special events to meet the lifelong learning needs of the community. These non-credit educational offerings emphasize career development, personal growth, cultural enrichment, and the solution of community problems.

COMMUNITY LIAISONS

The Community Services Office provides courses, seminars and special programs for a variety of special interest groups. To better serve several of these groups, liaisons conduct programs for women and minorities. The liaisons cooperate with community members and special interest groups to develop desired programs. Program information can be obtained by calling 231.777.0211.

ANNUAL PROGRAMS, ACADEMIES, AND CONFERENCES

Each year the college provides training in academies and institutes that meet several weeks and address the training needs of business, industrial or community leaders. Included in this category of programs are: Leadership Muskegon, Intercultural Community Leadership Academy, Downtown Noonhour College, and the Management Academy. The West Michigan Police Training Council, in conjunction with the College, conducts an on-going training program for police officers. The Project Intercept program is a joint program between the college and the District Court Probation; 18-20 classes are held annually for first time offenders. Larger conferences include the West Michigan Township Officials Conference, Administrative Professionals Day, Senior Day and several youth conferences.

CONTINUING EDUCATION

Continuing Education Unit credits (CEUs) may be offered for professions that require regular upgrading for certification. Special seminars to meet the training needs of specific organizations can be arranged
by calling the Continuing Education Office at 231.777.0227.

Information about courses, workshops, seminars, and special events is published twice each year in the OPTIONS Continuing Education/Community Services Schedule of Classes. Copies are distributed to the public and are available at the College.

LAKESHORE BUSINESS AND INDUSTRIAL SERVICE CENTER

The Center provides customized instruction in virtually every area for local business and industry through workshops, seminars, college classes and consulting services. Training may be held on campus or at the workplace, depending on the particular needs of the company. Instructors and trainers are selected from the College faculty, area working professionals and specialty consultants. Training may be for either college credit or non-credit. Staff members from the Business and Industrial Service Center are available to help design specialized courses and provide resources and materials for your business needs. For more information call 231.777.0217 or 777.0201.

STUDENT LIFE

The office of Student Life (Room 204) brings you services, resources, activities, and events from the non-academic side of college life. We are committed to constantly evolving. We strive to be open-minded and flexible by responding to the needs of the campus and our community. Our staff and our programs aim to encourage the development of leadership skills, values, friendships, and the opportunity to make a difference. Student Life oversees the Career Resource Center, Clubs and Organizations, Community Outreach, Employment Resource Center, Internship Programs, Leadership Muskegon, and student activities.

Several daylong events are planned annually with the help of community advisory committees. Some of these events are: The Hispanic Youth Career Conference held in March; Mayfest, the third Saturday in May; and Senior Day in August. Conferences for middle school young women, and other seminars addressing women’s issues are held periodically during the year.

REGISTERED STUDENT ORGANIZATIONS (RSOs)

The College provides opportunities for students to participate in a variety of clubs and organizations which encourage intellectual, social, cultural and leadership development. In many cases these organizations enable students to work on projects related to the classroom experience. Current information on such activities is publicized on campus each semester. If you have a common interest with other students and would like to form a club, check the MCC website, or stop by Room 204 for details.

STUDENT GOVERNMENT ASSOCIATION (SGA)

SGA serves as the official representative body for MCC students. It provides a forum for expression on matters of concern to the student body, and presents opportunities for the development of student leadership.

Goals of SGA:
1. To ensure the conveyance of the student voice to the administration and Board of Trustees.
2. To provide for discussion, investigation and resolution of student problems, concerns and ideas.
3. To retain sole authority to appoint and remove student representatives to the College’s Council System and designated committees.
4. To promote the interests of the College’s student community.
5. To protect and uphold student’s rights.
6. To plan, encourage and promote participation in College events and community service activities.
Muskegon Community College Catalog

ATHLETICS
MCC has maintained a program of intercollegiate athletics for both men and women for many years, while attempting to maintain teams in a wide variety of competitive fields. MCC is a member of the Michigan Community College Athletic Association, Region 12, and the National Junior College Athletic Association.

Questions about eligibility should be directed to the Director of Athletics. Transfer students should secure a transcript from any college previously attended and have it placed on file in the Records Office to aid in the determination of eligibility. Athletic grants-in-aid are available for tuition only in all sports sponsored by the College.

ALUMNI ASSOCIATION
The College has organized an Alumni Association for the purpose of promoting interest in Muskegon Community College and maintaining a mutually beneficial relationship between the College and its alumni. A well-informed, interested, and involved alumnus is one of the College's most valuable assets. An alumni newsletter, "Reflections," is published three times annually.

Any student who has earned credits through a regular course at MCC, or any friend of the College, qualifies as an alumnus and is eligible for the services offered. Suggestions for improved alumni relationships, programs, services and publications are welcomed by the College.

Those persons wishing to serve on the MCC Alumni Association Board of Directors should contact the College at 231.777.0265, or visit the Alumni Office, Room 100.

THE FOUNDATION FOR MUSKEGON COMMUNITY COLLEGE
The foundation was established in 1980 to provide an opportunity for friends and alumni of the College to contribute toward capital improvements, equipment, and other enhancements of program offerings which cannot be provided for through tuition, local, state, or federal support. Gifts are tax-deductible, and many corporations provide matching gifts which double or triple the contributions of their employees. Further information about the Foundation is available from the Foundation Office at the College in Room 104, or call 231.777.0341.

COUNCIL SYSTEM
The Council System of the College provides an internal review and recommendation process that permits and encourages participation and involvement by representatives from the entire MCC community.

Four permanent advisory councils represent the major service functions of the College:
1. Instructional Affairs Council
2. Student Services Council
3. Business Activities Council
4. Institutional Planning, Assessment and Development Council

A fifth council, the Coordinating Council, serves as a final review board. It forwards the advisory recommendations of the major councils to the President.

In cooperation with the Faculty Association, the Student Government Association, and non-teaching associations, these councils provide orderly channels for seeking and expressing ideas and developing recommendations. Their primary function is to plan and recommend policy. However, they may also be asked on occasion to serve as sounding boards to determine the merits of a new idea or the merits of reviewing established policies, practices, or procedures.

PETITIONS COMMITTEE
The Petitions Committee, a standing committee of the Student Services Council, is composed of students, counselors, and faculty members. The Committee meets as needed to review requests for re-admission from students on academic dismissal and to consider all other requests submitted. The Petitions Committee exists to consider the petitions of students with respect to any college rule or regulation. Board
policy has empowered the Petitions Committee to take direct action in the following areas:

1. Re-evaluation of WA grades (Withdrawal—Agreement) for an entire semester.
2. Change of WI grades (Withdrawal — Illness) due to physical or mental illness.
3. Changes from academic grades to W (Withdrawal) or WP (Withdrawal—Passing) or WR
   (Withdrawal—Repeat).
4. Review requests for tuition refunds.

In considering all other types of petitions, the Committee reviews requests and refer students to the appropriate campus office for action. Such referrals may be accompanied by the recommendations of the Committee.

Students may present questions regarding any regulation or policy of the College in writing to the Petitions Committee. Letters of petition should be sent to the Petitions Committee Secretary, Room 104, Muskegon Community College, 221 S. Quarterline Rd., Muskegon, MI 49442.

COMPLAINTS/GRIEVANCES

Affirmative Action complaints (under Title IX) and Handicapped complaints (under Title 504) should be directed to:

Diana Osborn – Vice President of Administration, Room 116 (phone 231.777.0350).

FACILITIES

Muskegon Community College, designed by Alden B. Dow, features an enclosed court, with Four-Mile Creek flowing under the wings of the building and through the court. The 111-acre campus is made up of the Academic Complex, the Technology Building, the Hendrik Meijer Library Information Technology Center, the Bartels-Rode Gymnasium, and the Frauenthal Foundation Fine Arts Center.

The campus is bounded on the west by U.S. 31; on the north by Stebbins Road; on the east by Quarterline Road; and on the south by Marquette Avenue.

Parking — Two large parking lots serve the campus. The main lot is located south of the Academic Complex, and may be entered from Marquette Avenue or from Quarterline Road. The back lot is located north of the James L. Stevenson Center for Higher Education, and may be entered from Quarterline Road or Stebbins Road.

Handicapped parking spaces — Handicapped parking spaces are available in the parking lot near the main entrance and also near the Technology Building in the back parking lot. Students needing special parking are urged to apply for a reserved space in this area through the Business Office, Room 114.

Room Numbers — Entering the main building, the rooms are numbered in the 100s, with even numbered rooms on the right side of the building and odd numbered rooms on the left. Stairs or elevators will take you DOWN one level to rooms numbered in the 200s. The bottom level is below this with rooms numbered in the 300s. Rooms in the College Success Center are numbered in the 400s. The rooms in the Technology Building are numbered in the 500s.

Any room with a four-digit number is located in the Stevenson Center for Higher Education. The numbering strategy is similar to the main complex with rooms on the top level numbered in the 1100s, second floor rooms in the 1200s, and the third level (bottom) numbered in the 1300s. The main entrance to the Center for Higher Education can best be accessed by utilizing the back parking lot (second entrance off of Quarterline Road).

Housing—Responsibility for housing rests with the student. Muskegon Community College does not own or operate housing units for students, nor does it assume responsibility for supervising or administering off-campus housing.

Classrooms—More than 70 classrooms and laboratories are available on campus, completely furnished to meet the needs of their particular disciplines. Additional classrooms, labs and conference facilities are located in the Stevenson Center for Higher Education which is attached to the main academic complex on the east side of the building.
Technology Building—This building houses classrooms and laboratories for automotive mechanics, electronics, welding, and metallurgy, as well as machining and foundry facilities, also equipped for their separate disciplines. Three drafting (CAD) classrooms are located in the Academic Complex, and Graphic Design facilities are located in the Stevenson Center for Higher Education complex.

Campus Bookstore—The bookstore is located near the main entrance of the Academic Complex. The store is open weekdays from 8:00 a.m. to 8:00 p.m., except Fridays and during the Spring and Summer Sessions, when it closes at 4:00 p.m. Spring and summer evening hours of operation are posted once determined.

Food Service—Meals and snacks are available from the on-campus restaurant next to the Campus Bookstore, (near the main entrance of the Academic Complex). It is open Monday through Thursday from 7:30 a.m. to 8:30 p.m. and Fridays from 7:30 a.m. to 12:30 p.m. The restaurant is closed during the Summer Session, but vending machine services are available in the Student Union.

Frauenthal Foundation Art Center—At the heart of the Frauenthal Art Center is the 344-seat Overbrook Theater and adjacent art gallery, where works by students, faculty, and guest artists are exhibited. The Center also includes a large rehearsal room for band, orchestra, and chorus, practice rooms, and a listening library where students may enjoy recordings. The Center also has 12 electronic pianos for instruction and practice.

Bartels-Rode Gymnasium—The Bartels-Rode Gymnasium is a separate building, south of the main parking lot. In addition to housing a large, multipurpose gymnasium, this building also houses the physical education and athletic offices, a fitness center and several teaching stations. Outdoor tennis courts are west of the building. Outdoor volleyball courts are east of the gymnasium. The baseball diamond and softball field are located south of the gymnasium.

Hendrik Meijer Library Information Technology Center—Formerly the Allen G. Umbreit Library, the new Hendrik Meijer LIT Center continues to provide instructional materials and information services to support the curricula offered by the College and to meet the informational needs of students, faculty, staff, and administration. The library extends these services to the community and serves as a catalyst in the lifelong learning goals of the citizens of Muskegon County and the greater West Michigan area.

Internet computers are available on the main floor of the library and on the second floor information commons for student research and assignments. Wireless access is also available. Students must sign in to use the computers and agree to the MCC Acceptable Use Policy.

The book collection, arranged according to Library of Congress Classification, currently exceeds 60,000 volumes. Other materials include magazines, newspapers, videotapes, and CDs. The majority of our newspaper, periodical, and journal subscriptions are available in electronic format via our numerous online databases. The library also subscribes to other online databases that support faculty and student’s research needs. Most of these databases are available to students and staff from off-campus.

Professional librarians are on duty to assist students and the general public. Special services include interlibrary loan, photocopy machines, group study rooms, a quiet reading room, a workstation for visually impaired persons, and both group and individual orientations. A one credit hour course, English 234D (Library Skills/Research Skills) is offered during the fall and winter semesters.

Hours for the library during the fall and winter semesters are 8:00 a.m. to 11:00 p.m. Monday through Thursday and 8:00 a.m. to 4:30 p.m. on Friday. Saturday hours are 10:00 a.m. to 5:00 p.m. During spring and summer, the hours are shortened.

Students and Muskegon area residents may apply for a free library card which is required to check out materials. Applications are available at the Public Services Desk and require a valid State of Michigan driver’s license or identification card.

Media Services—Instructional support services including procurement and scheduling of audio, video, photographic, and graphics reproduction equipment are available to students and faculty. Profes-
sional assistance in the selection, production, and use of all types of media materials is also available from the Media Services facility located in the James L. Stevenson Center for Higher Education complex.

**College Success Center (CS Center) and Testing Center**— These facilities are described elsewhere in this catalog.

**Carr-Flies Planetarium**— The Planetarium features four shows a year in its domed theater. Its free public showings are held Tuesday and Thursday evenings at 7:00 p.m. Reservations are encouraged. Special showings for organized groups and schools are also available. The planetarium is closed during July and August.

**Observatory**— The Muskegon Community College Observatory is located at the Muskegon County Wastewater Management System, 8301 White Road. The Observatory facility, which was dedicated in the fall of 2001, was created to complement the College’s astronomy program, as well as serve as an additional resource for area recreational stargazers. Public viewings will be scheduled for clear evenings during the months of April through October.

**CENTER FOR THEATER**

The Center for Theater operates within the Creative and Performing Arts Department. It provides theater classes for MCC students as well as a diversified schedule of performances. These include a season of plays produced by the College, an annual concert by the Overbrook Dance Theater, as well as touring productions of various kinds. All MCC students are encouraged to participate in the activities of the Center.

The Center for Theater offers something for every MCC student, whether it be the development of artistic talents, investigation of a career in professional theater, or simply the enjoyment and excitement of a live performance.

**JAMES L. STEVENSON CENTER FOR HIGHER EDUCATION**

The Muskegon Center for Higher Education was officially renamed the James L. Stevenson Center for Higher Education in 2001 to reflect the former president’s role in bringing the vision of the Center to reality. The 93,500 square foot building, constructed contiguous to the main academic facility on campus, houses a unique academic consortium comprised of Muskegon Community College, Ferris State University, Grand Valley State University, and Western Michigan University. The Center contains 40 classrooms/conference rooms including a computer classroom and laboratory, a large conference room, a large lecture hall, and a science room.

A catering kitchen on the second level accommodates food service needs for banquets, meetings, conferences, and receptions. Communication technology advancements allow for a variety of instructional delivery systems. Each room in the facility is wired for voice, video and data transmission. Teleconferencing and integrated distance learning technology is available as well.

The Muskegon Community College Graphics Design Department, Media Services Department, and the Television Studio are all housed in the Stevenson Center for Higher Education.

**HISTORY**

Muskegon Junior College was established by the Muskegon Board of Education in 1926 and was housed on the third floor of what was then the new Muskegon Senior High School. It was a pioneering effort, since only four other two-year institutions existed in Michigan at the time.

By 1934, enrollment of both the College and the high school had grown beyond the capacity of a single building. The Junior College, therefore, moved into the former Hackley School in downtown Muskegon across from Hackley Park (now the Board of Education Building).

(continued on next page)
It was appropriate that the College should occupy the old Hackley building, which had been presented to the public schools of Muskegon by Charles H. Hackley after fire had destroyed the original Central School. The city's First Citizen believed that a community was obliged to offer its youth the kind of training which would enable them to earn a good livelihood and at the same time contribute to the well-being of the community.

At the time of its move into this facility and for 17 years after, Muskegon Junior College was primarily geared to those students intending to complete at least four years of college. Muskegon's reputation in this field of the "college transfer" program was an enviable one, and continues to be so today.

Then in June of 1951, after an enabling act by the Michigan Legislature, the name and educational scope of the College was changed. "Muskegon Junior College" became "Muskegon Community College," thereby reflecting the expanded nature of the College's programs.

They were broadened to serve a larger number of students with a wider variety of interests. Courses were added in retailing, the vocations, the technical fields, public health, and the trades. These courses enabled young men and women to prepare themselves for a specific field of employment in two years of training beyond high school. There was no shrinking of the transfer program, only an expanded curriculum to serve a larger segment of the community.

In the post World War II years, enrollment climbed quickly and the Community College "campus" had to grow accordingly. The Muskegon Board of Education, which still operated the College, utilized available space in many of its buildings, and rented other community facilities when enrollment exceeded the capacities of those buildings.

By the early 1960s, enrollment had topped 2,000 and the College was operating full-time at Hackley, Vanderlaan, and Wilson schools and part-time at eight other locations. The time had come for another step in the development of the College.

The Board of Education formed a Special Citizens Committee to study the entire program and make recommendations. The Committee proposed that the College be separated from the public school system, that a county-wide community college district be created, that a board of trustees be elected to plan, build, and operate the school, and that millage be voted in sufficient amount and for enough years to build and operate the College.

In April of 1963, the county overwhelmingly approved the recommendations of the committee and elected the first Board of Trustees. The elected board went to work immediately and by September of that year had purchased the 111-acre campus on which the College exists today.

Alden B. Dow and Associates was named architect and by the summer of 1965 drawings were completed and construction begun. The Vocational-Technical Wing was completed and occupied in the fall of 1966 and the following September the entire complex was placed in service. Formal dedication ceremonies were held October 22, 1967, with Dr. Ashley Montagu, one of the world's foremost anthropologists, delivering the dedicatory address.

The first addition to the new campus was the Frauenthal Foundation Fine Arts Center, completed in 1968 and named for the Muskegon industrialist whose gift had made the Center possible - A. Harold Frauenthal.

When the new district was created, the name of the College was changed to Muskegon County Community College; but in the spring of 1969, at the request of the Board of Trustees, the State Board of Education approved changing the name once again to Muskegon Community College. With an enrollment of nearly 5,000 students, the College exists today in its eighth decade of service to area citizens.

January 1995 opened a new era of educational opportunity with the completion of the Muskegon Center for Higher Education on the campus of Muskegon Community College. The Center houses upper-level courses and programs offered by Ferris State, Grand Valley State, and Western Michigan universities. These institutions, along with Muskegon Community College, have formed a "consortium" to coordinate offerings to meet the needs of West Michigan residents.
The 90,000 square foot facility represents about one-third the size of the main building and was constructed to complement existing architecture. Attached to the main building near the Tech Wing, the James L. Stevenson Center for Higher Education contains the latest in communication technology with all of its 35 rooms connected via fiber optics for voice, video and data transmission. In addition to housing the educational programs of the consortium member institutions, the Center is also the new home for MCC’s Media Center and Graphic Design program.

Newly opened in January 2006, the Hendrik Meijer Library Information Technology Center offers students and the community the latest in communication capabilities, including wireless Internet access, state-of-the-art library facilities/technologies and classrooms, and an Internet café. The 40,000 square foot facility has three levels overlooking the woods and creek, and offers special services including interlibrary loan, photocopy machines, group study rooms, a quiet reading room, a workstation for visually impaired persons, and both group and individual orientations.

GOVERNANCE

MCC is governed by a seven-member board of trustees who are elected for six-year terms on an “at large” basis from throughout the district (Muskegon County.) The College’s chief executive is the President, appointed by the board of trustees. Serving the institution at the April 2006 printing of this catalog are the following persons:

Ann D. Oakes  
Chairwoman

Roy Portenga  
Vice-Chairman

Dorothy Lester  
Secretary

Kenneth J. Walcott  
Treasurer

Frank Bednarek  
Trustee

Nancy L. Rubinsky  
Trustee

Larry Wright  
Trustee
Muskegon Community College Catalog

FACULTY

Agard, Janice  English, A.A. Muskegon Community College; B.A. Western Michigan University; M.A. Western Michigan University
Alexander, Janice  Counselor, (I.P.C). B.A. Spring Arbor University; M.A. Western Michigan University
Alexander, Richard S.  Psychology, B.A. State University of New York at Stony Brook; M.A. Wayne State University
Al-Saji, Amer K.  Economics, B.S. Baghdad University, M.A. Central Michigan University, Ph.D. Northern Illinois University
Anderson, Maria H.  Mathematics, B.A., B.S. University of Montana; M.B.A., M.S. University of Wyoming
Anderson, Phillip D.  Electronics, B.S. Western Michigan University
Baran, Jamie L.  Mathematics/Physics, B.S. Grand Valley State University, M.A. Western Michigan University
Barreto, Adolfo  Criminal Justice, B.S. Bemidji State University; M.S. Trinity College and University
Bartley, John W.  Geology, B.S. Clarion University; M.S. University of Oklahoma; Ph.D. Michigan State University
Bellrichard, Suzanne K.  English, B.A. Illinois Wesleyan University; A.B.D. McGill University
Blattas, Daniel J.  Marketing, Customer Service, B.A. Michigan State University; M.B.A. Western Michigan University
Briggs-Erickson, Carol A.  Librarian, A.A. Muskegon Community College; B.S. Grand Valley State University; M.I.L.S. University of Michigan
Brown, Craig V.  Psychology, B.A. MacMurray College; M.A. Illinois State University
Brown, Harry W.  Computer Information Systems, A.A. Muskegon Community College; B.A. Grand Valley State College
Brown, Pamela K.  Director of Nursing, APRN, FNP, Diploma in Nursing, RN, Bronson Methodist School of Nursing; B.S.N. University of Michigan; M.S.N. Michigan State University.
Casey, Diana L.  Geography, B.A. Western Michigan University, M.S. Eastern Michigan University.
Cengiz, Pamela J.  Nursing, RN, A.D.N. Southwestern Michigan College; B.S. Utah State University; M.S.N. Michigan State University.
Chandler, Sherri A. Deboef  Psychology/Sociology, B.S. Central Michigan University, M.A. Western Michigan University.
Cline, Gretchen S.  English, B.A. Kenyon College; M.A. Ohio State; Ph.D Ohio State University
Conrad, Kelley L.  Counselor (LPC) (LLP), B.A. Alma College; M.A. Western Michigan University
Cutting, W. Scott  Music, B.M. Hope College; M.M. University of Illinois
Dutta, Arun K.  Chemistry, B.S. University of Utah; M.S. Auburn University; Ph.D University of Utah
DeVries, Dale M.  Respiratory Therapy, B.S. University of Michigan; M.A. University of Michigan
DeVries, Patricia A.  Nursing, R.N. Diploma Blodgett School of Nursing; B.S. Western Michigan University; M.S.N. Grand Valley State University
DeYoung, Kent M.  Communications, A.B. Michigan State University; M.A. Michigan State University
Doctor, Richard W.  English, B.A. Wheaton College; M.A. University of Illinois
Donley, Christina L.  Nursing, APRN, FNP; A.D.N. Muskegon Community College; B.S.N. Ferris State University; M.S.N. Michigan State University
Evans, Rebecca L.  English, B.A., M.A. Western Michigan University
Fields, Jan  Respiratory Therapy, RRT, B.S. Western Michigan University; M.M. Aquinas College; Ed.D. Western Michigan University
Fiorenzo, Stephen F.  Accounting/Business, B.S.B.A. Aquinas College; M.B.A. Grand Valley State University
Fountain, Ruth  Biology, A.A. Muskegon Community College; B.S. University of Michigan; M.S. University of Michigan

Garcia, Elena  Spanish, B.A. Wayne State University, M.A. Michigan State University

Griffiths, Brett M.  English, B.A. Westminster College, M.F.A. Southern Illinois University Carbondale

Groner, Thomas W.  Machine Technology, B.S. Ferris State University; M.A. Central Michigan University

Grunstra, Eileen A.  Nursing, RN; Diploma in Nursing, Hackensack Hospital School of Nursing; B.S.N., M.S.N. Grand Valley State University

Hair, Beverly A.  Sociology, B.A. Spring Harbor College, M.A. Western Michigan University

Hayes, Sylvia M.  Counseling, B.A. Western Michigan University; M.A. Michigan State University

Helmus, Dennis M.  Nursing, RN; Practical Nurse Certificate, Muskegon Community College; Diploma Hackley Hospital School of Nursing; B.S.N. Ferris State University; M.S.N. Michigan State University.

Herron, Brian  Mathematics, B.A. Grand Valley State Colleges; M.A. University of Wisconsin

Herron, Kathy A.  College Success Center Math, A.S. Muskegon Community College; B.S. Grand Valley State University; M.A. Grand Valley State University

Holtrop, Barbara J.  Nursing, R.N.; Diploma Hackley School of Nursing; B.S.N. Ferris State University; M.S.N. Michigan State University

Howell, Debra S.  Biology, B.S. Ferris State University, M.S. Grand Valley State University

Hudson, Richard  Welding, A.A.S. Muskegon Community College; B.S. Central Michigan University

Huff, Patricia R.  Office Systems Education, B.S., M.A. Northeast Missouri State University

Jacobkis, William T.  Political Science/History, B.A. DePaul University; M.A. University of Texas at Austin

Jewell, Ronnie D., Jr.  English, B.A. High Point University; M.A. Western Michigan University

Johnson, Michael C.  English, B.A. Michigan State University; M.A. Western Michigan University

Kaufman, Mary E.  Nursing, R.N.; A.D.N. North Dakota State University; B.S.N. Moorhead State University; M.S.N. University of Kentucky

Klingenberg, Jennifer L.  English, B.A. Lake Superior State University; M.A. Northern Michigan University

Knue, Daniel  Respiratory Therapy, CRTT, RTT, A.S. Washtenaw Community College; B.S. Western Michigan University; M.M. Aquinas College

Krasnewich, Diane  Mathematics, B.A. Oakland University; M.S. University of Michigan

Love, Renica L.  Counseling, B.S. Grand Valley State University; M.A. Western Michigan University

Lowry, Sheryl E.  Counseling, B.A. Indiana University; M.A.E. Western Kentucky University

Marczak, Gregory S.  Chemistry, B.S. University of Michigan; M.A. Western Michigan University

Mattone, Darren C.  Biology, B.S., M.Ed. Aquinas College

McDaid, Lawrence J.  Computer Information Systems (LPC), B.S. Aquinas College; M.S. Ferris State College; M.A. Western Michigan University

Meeuwenberg, Susan  Computer Information Systems/Office Systems Education, B.A. Western Michigan University; M.A. Western Michigan University; Ph.D. Michigan State University

Miller, Gregory S.  Computer Information Systems, B.B.A. Grand Valley State University

Moleski, Tobias B.  Physics, B.S. Grand Valley State University; M.S. Oregon State University

Morrissey, Blair H.  Philosophy, B.A. Dartmouth College; M.A. Case Western Reserve University

Murphy, Kathryn  Nursing, R.N.; B.S.N. University of Illinois, M.S.N. University of Illinois; N.P. Grand Valley State University

Naruszkiewicz, Elizabeth  Education, B.A. Aquinas College; M.A. (Early Childhood Education) Western Michigan University; M.A. (Educational Leadership) Western Michigan University

Neal, Oscar H.  Mathematics, B.A., M.S. Western Michigan University

Norris, Timothy  Art, B.A. Northern Illinois University; M.A. Northern Illinois University; M.F.A. Northern Illinois University
Muskegon Community College Catalog

Oman, Richard J.  Theater, B.A. North Central College- Naperville, Illinois; M.A. University of Florida
Osborne, Sandra L.  Nursing, R.N., B.S.N. Northern Michigan University; M.S.N. Grand Valley State
University
Parker, Charlyne V.  Computer Information Systems, B.S. Aquinas College; M.A. Western Michigan
University
Passage, Denise S.  Office Systems Education, B.S., M.Ed. Grand Valley State University
Perez, Julia N.  Spanish, B.A. Hurter University; M.A. Western Michigan University
Pond, Charlotte J.  Economics, B.A. Oakland University; M.A. Wayne State University
Relis, Barbara A.  Biology, B.S. State University of New York at Fredonia; M.S. State University of New
York at Fredonia
Rodgers, Vilene  Counselor (LPC), B.S. University of Illinois; M.S. Mankato State University
Ross, William  Machine Technology/Materials Technology, A.A. Muskegon Community College; B.S.
Western Michigan University; M.S. Ferris State College
Rusen, Catherine A.  College Success Center Writing, B.A. Alma College; M.A. Central Michigan
University
Rypma, Dan E.  Physical Education/Recreation, B.S., M.S. Grand Valley State University
Schechter, Duane K.  Marketing/Management, B.A. Hope College; M.A. Western Michigan University
Schmidt, Stephen W.  College Success Center Reading, B.A. Michigan State University; M.A. Western
Michigan University
Sikkenga, William E.  Drafting, B.S. Ferris State University, M.S. Ferris State University
Slater, Nancy K.  Graphic Design, B.F.A. Kendall College, M.A. Syracuse University
Smith, Beth  Physical Education/Recreation, B.S. Central Michigan University; M.A. Central Michigan
University
Spataro, Carlo V.  Humanities/Theater, B.S. State University of New York; M.S. Purdue University;
Ph.D Michigan State University
Stipes, Jeffrey A.  Advanced Technology, B.S. George Williams College; M.M. Aquinas College
Stoel, Roger M.  Coordinator for Library Services, A.A. Muskegon Community College; B.A. University
of Michigan; M.L.S. University of Michigan
Swisher, Larry D.  Accounting, B.S. Michigan State University; M.S. Western Michigan University
Thogerson, Mark T.  Biology, B.A. Luther College; M.S. Central Michigan University; Ph.D Michigan
State University
Tokarz, William P.  Electronics, A.A. Muskegon Community College; B.S. Western Michigan University
Tosa, Katherine M.  History/German, B.A. Southern Illinois University; M.A. Southern Illinois
University
Trainor, Timothy N.  Computer Information Systems, B.S. Western Michigan University; M.A. Western
Michigan University; Ph.D. University of Kansas
Troutman, Kurt  Political Science, B.A. Saginaw Valley State University; M.A. University of Colorado
Truax, Jonathan C.  Astronomy/Mathematics, B.S. Grand Valley State University; M.S. Michigan State
University
Tyler, Mary E.  English, B.A. University of Michigan; M.A. Western Michigan University
Vallie, Michael W.  CAD/Drafting, B.S. Western Michigan University
Vanderlaan, Robert  Cataloger/Librarian, B.A. Western Michigan University
VanVeenen, Theresa E.  Biology, B.S. Grand Valley State University, M.S. Michigan State University
Visconti, Laurence  Counselor (LPC), B.S. Grand Valley State University; M.A. Western Michigan
University
Wahamaki, Sheila Kulp  Theater, B.F.A. West Virginia University; M.A. Indiana State University
Wible, Andrew D.  Philosophy, B.A. Hanover College; M.A. Ohio University; Ph.D Wayne State
University

48
Wilson, Karen S. Chemistry/Mathematics, B.S. Ohio State University; M.S. Ohio State University
Wolters, Thomas L. Mathematics, B.S. Grand Valley State University; M.A. Western Michigan University
Yakes, Daniel James Anthropology/History, A.A. Port Huron Junior College; B.A. Western Michigan University; M.A. Western Michigan University; M.Ph. University of Kansas; Ph.D University of Kansas
Zarowitz, Jay N. Political Science, A.A. Long Beach City College; B.A. Washington State University; M.A. Washington State University
Zemke, Susan J. Nursing, R.N.; Diploma St. Luke's Hospital School of Nursing; B.S.N. Ferris State University; M.S.N. Michigan State University

ADMINISTRATION

PRESIDENT—Rule, David L. A.S. Schenectady County Community College; B.S. and M.S. College of St. Rose; Ph.D University at Albany, State University of New York
VICE PRESIDENT OF ADMINISTRATION—Ostborn, Diana R. A.A. Muskegon Community College; B.B.A. Grand Valley State University; M.S.A. Central Michigan University
VICE PRESIDENT FOR ACADEMIC AFFAIRS—Ferrantino, Robert C. B.S. Northern Illinois University, M.B.A. Northern Illinois University, J.D. Thomas M. Cooley Law School
VICE PRESIDENT FOR STUDENT SERVICES—Brooks, Janie P.A.A., Muskegon Community College; B.A. Western Michigan University; M.A. Western Michigan University
ASSOCIATE VICE PRESIDENT FOR ACADEMIC AFFAIRS—Sturkus, Teresa A. B.A. Olivet College; M.I.L.S. University of Michigan
ASSOCIATE VICE PRESIDENT OF ADMINISTRATION—Doyle, Joseph B.A. Western Michigan University; M.P.A. Western Michigan University
DIRECTOR OF PUBLIC INFORMATION—Loxterman, William M. B.S. Ohio University; M.P.A. Western Michigan University
CHIEF INFORMATION OFFICER (SunGard Higher Education Managed Services)—Sanhvi, Kamlesh B.S., M.B.A., M.S. M.I.S. Benedictine University
Director of Financial Services—Zink, Rosemary B.S. Central Michigan University; M.B.A. Grand Valley State University; C.P.A., C.M.A.
Director of Athletics—Gifford, Gene B.A. Olivet College; M.A. Central Michigan University
Director of Business and Industrial Service Center—O’Brien, Thomas B.A. Central Michigan University; M.A. (Industrial Education) Central Michigan University; M.A. (Industrial Management) Central Michigan University
Director of Financial Aid—Wierda, Bruce A.A. Muskegon Community College, B.S. Michigan Technological University
Director of Professional Programs—Panci, Cynthia A. B.A. College of Mount St. Joseph
Director of Records and Registration—Roberts, Jean M. B.B.A. Grand Valley State University, M.P.A. Western Michigan University
Director of Student Life and Community Outreach—Birken, Sally B.S. Central Michigan University
Director of Television—Mooney, David B.A. Central Michigan University; M.A. Central Michigan University
Manager of Graphics—Hoekema, Peter A.A. Muskegon Community College
Manager of Testing Center—Ottman, Mary A.A. Muskegon Community College
Coordinator of the Center for Teaching and Learning—Bogema, Don B.F.A. Stephens College
MCC ACADEMIC PROGRAMS

ASSOCIATE IN SCIENCE AND ARTS DEGREE PROGRAMS

Associate in Science and Arts ................................................................. Pg 55
Associate in Science and Arts - Criminal Justice ................................ Pg 59
Associate in Science and Arts - Early Childhood Education ............... Pg 59
Associate in Science and Arts - Nursing .............................................. Pg 59

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS

Criminal Justice ......................................................................................... Pg 60
Corrections Certificates ............................................................................ Pg 60

ALLIED HEALTH PROGRAMS (Degrees, Certificates, and Diplomas)

Nursing ........................................................................................................ Pg 62
Respiratory Therapy .................................................................................... Pg 66
Massage Therapy ...................................................................................... Pg 67

BUSINESS PROGRAMS (Degrees, Certificates, and Professional Development Credits)

Accounting/Office Management ............................................................... Pg 69
Management .............................................................................................. Pg 70
Marketing .................................................................................................. Pg 71
Entrepreneurship Program Certificate ..................................................... Pg 71
Customer Service Specialist Certificate ................................................ Pg 71

COMPUTER-RELATED PROGRAMS (Degrees and Certificates)

Computer Applications .............................................................................. Pg 73
Computer Network Technology ............................................................... Pg 79
Computer Networking Certificate .......................................................... Pg 80
Business Computer Programming ......................................................... Pg 75
RPG Programming Certificate ............................................................... Pg 76
C/Java Computer Programming .............................................................. Pg 77
C/Java Programming Certificate ............................................................ Pg 78
E-Business ................................................................................................. Pg 80

OFFICE SYSTEMS EDUCATION PROGRAMS

(Degrees, Certificates, and Professional Development Credits)

Office Systems Education - Administrative ........................................... Pg 8
Office Systems Education - Information Processing .............................. Pg 85
Office Systems Education - International ............................................... Pg 87
Office Systems Education - Legal ......................................................... Pg 89
Office Systems Education - Medical ..................................................... Pg 91
Office Systems Education - Office Support Specialist Certificate ........ Pg 93
Office Systems Education - Medical Clerk Certificate ........................ Pg 94
Administrative Voice Transcription - Professional Development Credit ... Pg 124
Legal Voice Transcription - Professional Development Credit .............. Pg 124
Medical Voice Transcription - Professional Development Credit .......... Pg 124
Office Skill Building - Professional Development Credit .................................................... Pg 125
Word Processing - Professional Development Credit ........................................................ Pg 125

EDUCATION PROGRAMS (Degrees and Certificates)
Child Development Associate ............................................................................................. Pg 97
Early Childhood Education Michigan School Age Credential ................................................ Pg 95
Early Childhood Education Instructional Assistant - Special Education ................................. Pg 95
Child Development Associate Certificate ............................................................................. Pg 99
Family Day Care Certificate ............................................................................................. Pg 100
Infant - Toddler Certificate .............................................................................................. Pg 100
MI School Age Certificate ................................................................................................. Pg 101
Instructional Assistant-Special Education Certificate ........................................................ Pg 101

INDUSTRIAL TECHNOLOGIES PROGRAMS (Degrees and Certificates)
Automotive Technology ..................................................................................................... Pg 102
Automotive Technology Certificate .................................................................................. Pg 103
Biomedical Electronics Technology ................................................................................... Pg 104
Computer-Aided Drafting and Design ............................................................................. Pg 105
Computer-Aided Drafting and Design Certificate .............................................................. Pg 106
Electronics Technology ..................................................................................................... Pg 107
Electronics Technology Certificate .................................................................................. Pg 108
Graphic Design ................................................................................................................ Pg 109
Graphic Design Certificates.............................................................................................. Pg 110
Industrial Technology ..................................................................................................... Pg 112
Industrial Technology Certificate ..................................................................................... Pg 113
Machining Technology ..................................................................................................... Pg 113
Machining Technology Certificate .................................................................................... Pg 114
Materials Technology ....................................................................................................... Pg 115
Pulp and Paper Science ................................................................................................... Pg 116
Pulp and Paper Science Certificate ................................................................................ Pg 117
Welding Technology ......................................................................................................... Pg 117
Welding Technology Certificate ...................................................................................... Pg 118
World Class Manufacturing/Business ............................................................................... Pg 119

Additional Industrial Technology Certificate Programs
Digital Electronics Technology Certificate .............................................................................. Pg 120
Industrial Electrical Maintenance Certificate ....................................................................... Pg 121
Alternative and Renewable Energy .................................................................................. Pg 121
Industrial Maintenance Certificate .................................................................................... Pg 121
Microprocessor Electronics Technology Certificate ........................................................ Pg 122
Production Supervision Certificate ................................................................................ Pg 122
Quality Assurance Certificate .......................................................................................... Pg 122

MCC/University Partnership Programs .............................................................................. Pg 126
MCC ACADEMIC PROGRAMS

Associate in Science and Arts Degree

This degree is for students intending to transfer to a four-year college or university. If you wish to major in a program that requires you to transfer to a four-year college, such as Social Work or Computer Science, the courses you need to take are outlined in the curriculum guides available online at www.muskegoncc.edu or in the Counseling Center, Room 101. These programs are planned to enable students to transfer to bachelor degree-granting colleges and universities with advanced standing. Students graduating from Muskegon Community College with an Associate in Science and Arts Degree are generally admitted to the bachelor degree-granting institutions with junior year standing.

Associate in Applied Science Degree

If you wish to major in an occupational program that requires only two years of study, such as Electronics or Office Systems, the courses you need to take are outlined in this catalog. You will want to pursue the Associate in Applied Science Degree. The Associate in Applied Science Programs (Business, Allied Health, Technology) were designed in conjunction with active advisory committees so that a student may reasonably expect employment upon successful completion of his/her degree work. The Associate in Applied Science Degree may also be used as a transfer degree to a limited number of baccalaureate programs, but A.A.S. degree programs are not specifically designed to transfer to four-year colleges or universities.

Diplomas, Certificates and Professional Development Credits

Certificates are offered in many of the same occupationally-oriented programs as the Associate in Applied Science Degrees but are not as comprehensive in nature. These certificate programs were developed with the assistance of an advisory committee, and students may reasonably expect employment upon completion of these programs. New certificate and professional development programs are continually being developed at Muskegon Community College. Students should check with counselors for information on other certificate and professional development programs which may be available.

IT IS STRONGLY RECOMMENDED THAT STUDENTS SEE A COUNSELOR TO DEVELOP A COURSE PLAN FOR PURPOSES OF TRANSFERRING TO A FOUR-YEAR INSTITUTION OR OBTAINING A TWO-YEAR DEGREE OR CERTIFICATE.

Students returning to Muskegon Community College after an absence of FIVE YEARS OR LONGER will be under the requirements of the CURRENT CATALOG.
ASSOCIATE IN SCIENCE AND ARTS DEGREE PROGRAMS

The College shares the view held by many that an education should prepare a person not only for a career, but also for life. It is primarily through the curriculum of the general education program for the Associate in Science and Arts Degree that the College seeks to help students acquire the knowledge and skills necessary to understand both themselves and the world in which we live. For a complete statement regarding the purposes of general education, please see pages 12 to 15 of this catalog. This degree automatically fulfills the MACRAO AGREEMENT.

*REQUIRED FOUNDAIONAL SKILLS

The College believes that a successful, meaningful experience in college courses occurs when students enter programs adequately prepared to meet their challenges. Therefore, you must demonstrate a minimum level of achievement, either by successful testing or satisfactory course completion (a grade of “C” or better), in four areas: writing, reading, math, and computers. See page 22 for information on testing.

BASED ON TEST RESULTS YOU MAY BE REQUIRED TO COMPLETE:

1. Writing ................................................................. English 085, 089, 091, and/or 114
2. Reading ................................................................................. Reading 040A or 040C
3. Mathematics ............................................................................. Math 050
4. Computers ............................................................................. CIS 100 or any other CIS course
   (Students are strongly recommended to complete CIS 110 or CIS 120A, or CIS 129.)

*You may test out of each of these requirements.

GENERAL EDUCATION REQUIREMENTS MINIMUM CREDIT

Communication

<table>
<thead>
<tr>
<th>Course</th>
<th>Minimum Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 101 and 102</td>
<td>6</td>
</tr>
</tbody>
</table>

Science/Math

Courses must be taken in more than one academic area and be numbered 100 level or above and include at least one 4-credit hour laboratory course. If Biology 100 is elected, four different one-credit hour modules are needed to satisfy the laboratory course requirement.

<table>
<thead>
<tr>
<th>Course</th>
<th>Minimum Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology 105</td>
<td></td>
</tr>
<tr>
<td>Astronomy 101, 105A (Same course as Physics 105A)</td>
<td></td>
</tr>
<tr>
<td>*Biology 100 – (10A,B,C,D,E,F,G,H,J)</td>
<td></td>
</tr>
<tr>
<td>*Biology 103, 105, 106, 109, 120, 122, 204, 207, 210</td>
<td></td>
</tr>
<tr>
<td>Biology 200</td>
<td></td>
</tr>
<tr>
<td>*Biology 200L</td>
<td></td>
</tr>
<tr>
<td>Business 105 (Same course as Mathematics 115)</td>
<td></td>
</tr>
<tr>
<td>!!!*Chemistry 100 (Lecture) &amp; 100A (Lab), 101 (Lecture) &amp; 101A (Lab), 102 (Lecture) &amp; 102A (Lab), 120 (Lecture) &amp; 120A (Lab), 130 (Lecture) &amp; 130A (Lab), 201E (Lecture) &amp; 201F (Lab), 202F (Lecture) &amp; 202G (Lab)</td>
<td></td>
</tr>
</tbody>
</table>

{All Chemistry classes must be taken with the accompanying Chemistry lab for laboratory credit.}
*Geography 101A, 215
*Geology 101, 102
Mathematics 105, 107, 109, 111, 112, 115 (Same course as Business 105), 151, 161, 162, 215, 274, 283, 295
*Physical Science 101A
*Physics 201, 202, 203, 204
Physics 105A (Same course at Astronomy 105A)

*These courses will satisfy the laboratory requirement.

!!!Chemistry placement test is required prior to taking Chemistry 101. Contact the Testing Center at 231.777.0394.

The Human Experience

Aesthetic Values ........................................................................................... 3
   Art 101, 104, 105, 107, 108, 109, 204, 205, 207, 208, 209, 211
   Communication 203 (Same course as English 208)
   Dance 100, 101, 102, 106, 200, 201, 213, 218
   English 208 (Same course as Communication 203), 223
   Music 103 and ALL other Music courses numbered 100 or above

Ethics and Logic ............................................................................................ 3
   Philosophy 101, 102, 104, 202, 204, 205

Social Relationships ..................................................................................... 3
   Economics 101, 102, 130
   Psychology 102, 201, 202, 203, 205A
   Sociology 101, 102, 202, 203, 206
   Women’s Studies 101

Human Cultures

Western World .............................................................................................. 3
   Art 198, 199, 202
   English 200, 201, 204, 205, 206, 210, 213, 225, 226, 227, 228
   History 101, 102, 204
   Humanities 195
   Music 103
   Political Science 203
   Theater 201

American ........................................................................................................ 3
   History 201, 202, 207, 211, 220
   Political Science 111, 205, 220
International ........................................................................................................ 3

If the credit hours from American Cultures and Social Relationships total less than 8 credits, the choices are:
Anthropology 103, 110
Geography 102C, 105
Political Science 202, 210, 211

If the credit hours from American Cultures and Social Relationships total 8 credits or more, then other options are:
English 207, 211, 218
French 101, 102, 201, 202
German 101, 102, 201, 202
History 210
Philosophy 203, 210
Spanish 101, 102, 201, 202

Physical Education ................................................................................................ 2
One credit hour from: PEA 101A, 103, 104A, 118, or 201 and one PEA/DNC
credit hour of choice.

MINIMUM GENERAL ED. CREDITS ........................................................................ 34

Electives
Electives are courses a student chooses, in addition to the other degree requirements, based on the anticipated major and the transfer school the student will be attending. Electives should be chosen carefully, with the advice of a counselor, who will provide a student with a curriculum guide which lists specific courses the four-year school wants students to take at the community college level.

NOTE: Some four-year colleges and universities require a second year proficiency in foreign language. Some graduate school admissions committees prefer candidates with a foreign language background. If you think you might one day seek admission to a graduate program you should consider studying a foreign language at Muskegon Community College.

To meet the College’s technology goals, students are strongly recommended to complete CIS 110, 120A, or 129.
For student numbers A04000 and above, a maximum of four credit hours of the following will count toward graduation:
ENG 085, 089, 091; RDG 040A, 040C, 040E; MATH 035 modules, 036A, 040.

If you are uncertain about your major, the College recommends that you complete your General Education Requirements first. All students, whether majoring in English or engineering, must complete the general education requirements.

Minimum Electives ........................................................................................................ 28

Minimum Total ............................................................................................................. 62
MACRAO AGREEMENT

MACRAO (Michigan Association of Collegiate Registrars and Admissions Officers) agreement:

Students who complete the general education requirements for the Associate in Science and Arts degree will receive the MACRAO stamp on their transcript which makes transferring to many Michigan colleges and universities easier. Colleges and universities who are a part of this agreement will exempt transfer students from their freshman-level general education requirements if the student has met the general education requirements at Muskegon Community College. The agreement does not cover elective courses. Some colleges and universities have limitations and provisos; all students should consult with a counselor regarding the four-year college of their choice.

In special cases, it may be in the best interest of a student to take courses at Muskegon Community College which result in receiving the MACRAO stamp but do not meet the requirements for the Associate in Science and Arts degree. All students should consult with a counselor.

FOREIGN LANGUAGE

Some four-year colleges and universities require a second-year proficiency in a foreign language. Some graduate school admissions committees prefer candidates with a foreign language background. Students who think they might one day seek admission to a graduate program should consider studying a foreign language at Muskegon Community College.

CURRICULUM GUIDES

Curriculum guides tell you what courses to take at Muskegon Community College before transferring to a senior college. There are curriculum guides available for the most popular majors and transfer schools.

For example, if you want to study engineering and transfer to the University of Michigan, there is a curriculum guide that will tell you which courses the University of Michigan wants you to take at MCC before transferring. The guides are prepared jointly by our counselors and the admissions offices at the transfer colleges, and are available online at www.muskegoncc.edu or in the Counseling Center, Room 101.
ASSOCIATE IN SCIENCE AND ARTS - CRIMINAL JUSTICE

GENERAL EDUCATION REQUIREMENTS

A minimum of 34 credits of General Education requirements must be fulfilled. Please refer to previous Associates in Science and Arts degree information for specific course numbers and information.

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>6</td>
</tr>
<tr>
<td>Science/Math</td>
<td>8</td>
</tr>
<tr>
<td>The Human Experience</td>
<td></td>
</tr>
<tr>
<td>Aesthetic Values</td>
<td>3</td>
</tr>
<tr>
<td>Ethics and Logic</td>
<td>3</td>
</tr>
<tr>
<td>Social Relationships</td>
<td>3</td>
</tr>
<tr>
<td>Human Cultures</td>
<td></td>
</tr>
<tr>
<td>Western World</td>
<td>3</td>
</tr>
<tr>
<td>American</td>
<td>3</td>
</tr>
<tr>
<td>International</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td></td>
</tr>
<tr>
<td>PEA and PEA/DNC</td>
<td>2</td>
</tr>
</tbody>
</table>

Minimum 34

In addition, 24 Criminal Justice credit hours are required for completion of A.S.A. - Criminal Justice.

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ 101 Intro to Law Enforcement</td>
<td>3</td>
</tr>
<tr>
<td>CJ 102 Police Administration I</td>
<td>3</td>
</tr>
<tr>
<td>CJ 104 Criminology</td>
<td>3</td>
</tr>
<tr>
<td>CJ 109 Crime Prevention and Juvenile Delinquency</td>
<td>3</td>
</tr>
<tr>
<td>CJ 201 Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>CJ 202 Police Administration II</td>
<td>3</td>
</tr>
<tr>
<td>CJ 204 Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>CJ 205 Interrogation and Case Preparation</td>
<td>3</td>
</tr>
<tr>
<td>CJ 206 Evidence and Criminal Procedure</td>
<td>3</td>
</tr>
<tr>
<td>CJ 207 Police and Community Relations</td>
<td>3</td>
</tr>
<tr>
<td>CJ 208 Police Science Laboratory I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

CRIMINAL JUSTICE ELECTIVES: Select a minimum of three courses from one of the following options:

CRIMINAL JUSTICE OPTION

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ 202 Police Administration II</td>
<td>3</td>
</tr>
<tr>
<td>CJ 204 Criminal Investigation</td>
<td>3</td>
</tr>
<tr>
<td>CJ 206 Evidence and Criminal Procedure</td>
<td>3</td>
</tr>
<tr>
<td>CJ 207 Police and Community Relations</td>
<td>3</td>
</tr>
<tr>
<td>CJ 208 Police Science Laboratory I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Minimum 9</td>
</tr>
</tbody>
</table>

CORRECTIONS OPTION

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ 250 Introduction to Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CJ 251A Legal Issues in Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CJ 252A Correctional Institutions/Facilities</td>
<td>3</td>
</tr>
<tr>
<td>CJ 257 Client Relations in Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CJ 258A Client Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Minimum 9</td>
</tr>
</tbody>
</table>

Total 62
ASSOCIATE IN SCIENCE AND ARTS - EARLY CHILDHOOD EDUCATION

This degree is intended for students who would like to work in a pre-kindergarten setting, such as a Head Start program. Please note it does not lead to a teaching certificate for K-12.

GENERAL EDUCATION REQUIREMENTS

A minimum of 34 credits of General Education requirements must be fulfilled. Please refer to previous Associates in Science and Arts degree information for specific course numbers and information.

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>6</td>
</tr>
<tr>
<td>Science/Math</td>
<td>8</td>
</tr>
<tr>
<td>The Human Experience</td>
<td></td>
</tr>
<tr>
<td>Aesthetic Values</td>
<td>3</td>
</tr>
<tr>
<td>Ethics and Logic</td>
<td>3</td>
</tr>
<tr>
<td>Social Relationships</td>
<td>3</td>
</tr>
<tr>
<td>Human Cultures</td>
<td></td>
</tr>
<tr>
<td>Western World</td>
<td>3</td>
</tr>
<tr>
<td>American</td>
<td>3</td>
</tr>
<tr>
<td>International</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td></td>
</tr>
<tr>
<td>PEA and PEA/DNC</td>
<td>2</td>
</tr>
</tbody>
</table>

Minimum 34

EARLY CHILDHOOD EDUCATION REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 111 Introduction to the Education of Young Children</td>
<td>3</td>
</tr>
<tr>
<td>ED 120 Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 214 Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>ED 220A Early Childhood Assessment</td>
<td>2</td>
</tr>
<tr>
<td>ED 230 Children’s Literature</td>
<td>3</td>
</tr>
<tr>
<td>ED 225 Child Development OR ED 250 Human Growth and Learning</td>
<td>3</td>
</tr>
</tbody>
</table>

17

RECOMMENDED ELECTIVES

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 107 Child Care: Operating a Successful Business</td>
<td>3</td>
</tr>
<tr>
<td>ED 109 The Parent-Child Connection</td>
<td>3</td>
</tr>
<tr>
<td>ED 118 Creative Curriculum for Children</td>
<td>3</td>
</tr>
<tr>
<td>ED 211 Behavior Management</td>
<td>3</td>
</tr>
<tr>
<td>ED 223 Child Care Administration</td>
<td>3</td>
</tr>
<tr>
<td>ED 226 Interdisciplinary Approaches to Early Interventions</td>
<td>3</td>
</tr>
<tr>
<td>ED 251 Health Needs of the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>ED 210 Child Care and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ED 290 CI Cooperative Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL 62
ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS

ASSOCIATE IN APPLIED SCIENCE - CRIMINAL JUSTICE

Students who prefer to enter the workforce after earning a two-year degree may choose the A.A.S. in Criminal Justice degree.

**GENERAL EDUCATION REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101</td>
<td>Business &amp; Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102</td>
<td>Advanced Business &amp; Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>MATH 109</td>
<td>College Algebra with Applications or BUS 126 Business Math</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127</td>
<td>Human Relations or COM 101 Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEOG 102C</td>
<td>Cultural Geography, PHIL 205 Business Ethics</td>
<td>3-4</td>
</tr>
<tr>
<td>PSCI 111</td>
<td>Intro. to American Government, PSCI 211 Comparative World Governments, PSYC 201 General Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC 102</td>
<td>Applied Psychology</td>
<td></td>
</tr>
<tr>
<td>CIS 110</td>
<td>Computer Concepts or CIS 120A Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>PEA/DNC</td>
<td>Physical Education and/or Dance (Required: One credit from PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC credit of choice)</td>
<td>2</td>
</tr>
</tbody>
</table>

**TOTAL 20-22**

**CRIMINAL JUSTICE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ 101</td>
<td>Intro to Law Enforcement</td>
<td>3</td>
</tr>
<tr>
<td>CJ 102</td>
<td>Police Administration I</td>
<td>3</td>
</tr>
<tr>
<td>CJ 104</td>
<td>Criminology</td>
<td>3</td>
</tr>
<tr>
<td>CJ 109</td>
<td>Crime Prevention and Juvenile Delinquency</td>
<td>3</td>
</tr>
<tr>
<td>CJ 201</td>
<td>Criminal Law</td>
<td>3</td>
</tr>
</tbody>
</table>

**LAW ENFORCEMENT OPTION REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ 202</td>
<td>Police Administration II</td>
<td>3</td>
</tr>
<tr>
<td>CJ 204</td>
<td>Criminal Investigations</td>
<td>3</td>
</tr>
<tr>
<td>CJ 205</td>
<td>Interrogation and Case Preparation</td>
<td>3</td>
</tr>
<tr>
<td>CJ 206</td>
<td>Evidence and Criminal Procedure</td>
<td>3</td>
</tr>
<tr>
<td>CJ 207</td>
<td>Police and Community Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

**CORRECTIONS OPTION REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ 250</td>
<td>Introduction to Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CJ 251A</td>
<td>Legal Issues in Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CJ 252A</td>
<td>Correctional Institutions/Facilities</td>
<td>3</td>
</tr>
<tr>
<td>CJ 257</td>
<td>Client Relations in Corrections</td>
<td>3</td>
</tr>
<tr>
<td>CJ 258A</td>
<td>Client Growth and Development</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 15**

*Student must select either the Law Enforcement or Corrections option.
NEW CLASSES
(Students will select a minimum of 10 credits from the following options.)

CJ 110 Defensive Tactics .............................................................. 2
CJ 112 Emergency Vehicle Operations ........................................ 1
CJ 120 Firearms ........................................................................... 2
CJ 122 Patrol Procedures ............................................................. 3
CJ 123 Traffic Enforcement ........................................................... 3
CJ 130 Tactical Communications .................................................. 3
CJ 193 HAZ-MAT Communications .............................................. 1
CJ 208 Police Science Lab ............................................................. 3
CJ 298 Instructor Skill Development ............................................. 3

Minimum credits required to earn the A.A.S. degree ...................... 62

CORRECTIONS OFFICER PROFESSIONAL DEVELOPMENT CREDITS
Since October 1, 1987 ALL Michigan State Corrections Officers hired are required to have 15 semester or 23 quarter college credit hours earned through one of the following options:

OPTION I.
Five (5) specific corrections courses as determined by the Michigan Correctional Officer’s Training Council.

OPTION I - M.C.C. CORRECTIONS PROGRAM CR. HRS.
CJ 250 Introduction to Corrections ............................................... 3
CJ 251A Legal Issues in Corrections .............................................. 3
CJ 252A Correctional Institutions/Facilities .................................. 3
CJ 257 Client Relations in Corrections ........................................... 3
CJ 258A Client Growth and Development .................................... 3

Total 15

Students completing Option I will receive an MCC Certificate in Corrections. Please contact the Instructional Affairs Office for your certificate.

OPTION II.
Fifteen credits in the following areas: Corrections, Criminal Justice, Guidance and Counseling, Educational Psychology, Family Relations, Psychology, Sociology. Each course must be passed with a minimum “C” grade (2.0 G.P.A.).

OPTION III.
A.S.A. degree in Criminal Justice is recommended. Program should include the five (5) Corrections courses listed in Option I. Each corrections course must be passed with a minimum “C” grade (2.0 G.P.A.).
ALLIED HEALTH PROGRAMS (Degrees, Certificates, & Diplomas)

Admission to the College does not guarantee admission to all programs within the College. Students wishing to enter the Nursing or Respiratory Therapy programs must submit an additional application. These may be obtained in Room 100.

NURSING

- Practical Nurse
- Graduate Nurse with an A.A.S. or A.S.A. Degree

RESPIRATORY THERAPY

- Respiratory Therapist - A.A.S. Degree

MASSAGE THERAPY

- Certificate program

INDIVIDUAL HEALTH RELATED COURSES

- AH 101 Medical Terminology
- AH 102 Basic Patient Care Skills
- AH 104 Medical Insurance Billing
- AH 105 Introduction to EKG
- AH/ED 251 Health Needs of the Young Child
- ELTR 212 Medical Instrumentation & Measurement
- PHIL 204 Biomedical Ethics
- HE 100A Community First Aid and Safety
- HE 102 Nutrition for Fitness and Sport
- HE 202A Sports Injuries and Prevention
- PEA 101A Fitness, Wellness, and Nutrition

NOTE: See also details on the Office System Education - A.A.S. Medical degree, Medical Clerk certificate, and Medical Voice Transcription Professional Development programs.

NURSING

MISSION: The Muskegon Community College Nursing Program is a ladder Associate Degree Nursing Program providing a foundation for lifelong Nursing Education. The Muskegon Community College Nursing Program is committed to partnerships with local community healthcare agencies and University partners to meet the intellectual, technical, and professional needs of a 21st century nursing workforce. The Muskegon Community College Nursing Program is committed to supporting student success, encouraging diversity, and stimulating intellectual curiosity, critical thinking, and the professional ethics and accountability necessary for persons to function as professional nurses and effective healthcare employees.

The Muskegon Community College Nursing Program offers a career ladder-nursing curriculum with three educational tracks. Students who choose to exit from the Program after completion of the first four terms of the curriculum will receive a Practical Nurse Diploma and will be eligible to write the National Council Licensure Examination for Practical Nurses (NCLEX-PN) to practice as a Licensed Practical Nurse (LPN). Students who choose to exit from the Program after completion of the first six terms of the curriculum will receive an Associate in Applied Science (A.A.S.) Degree. The A.A.S. Degree is primarily an occupationally oriented degree. Students who choose to exit from the Program after completion of all seven terms of the curriculum will receive an Associate in Science and Arts (A.S.A.) Degree. The A.S.A. Degree is primarily a transfer degree which enables students to transfer to baccalaureate degree-granting institutions with advanced standing.
Students who receive the A.A.S. or A.S.A. Degree will be eligible to write the National Council Licensure Examination (NCLEX-RN) for licensure to practice as a Registered Nurse (RN). The curriculum in each of the educational tracks includes courses in the natural, behavioral and social sciences, and nursing. The nursing courses provide for concurrent theory presentation and clinical practice. Clinical practice takes place in the three major community hospitals and other selected community health care settings.

Licensed Practical Nurses and other individuals with prior nursing education are afforded the opportunity to enter into the curriculum with advanced placement. Students seeking an Associate Degree in Nursing (ADN) who have previously obtained the LPN or LVN licensure must possess an unencumbered license and current work experience. Obtain additional information in Room 100 or call 231.777.0266.

ADMISSION

General Information
To better enable individuals to validate the course competencies required for admission into the Muskegon Community College Nursing Program, and to enhance their chance for success, the following high school educational preparation is recommended:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry</td>
<td>1</td>
</tr>
<tr>
<td>General Math</td>
<td>1</td>
</tr>
<tr>
<td>Algebra</td>
<td>2</td>
</tr>
<tr>
<td>English</td>
<td>3-4</td>
</tr>
<tr>
<td>Computer</td>
<td>1/2</td>
</tr>
</tbody>
</table>

Counseling services are available to assist students in career and educational planning. Prospective students are strongly advised to make an appointment in the Counseling office (Room 100, 231.777.0362).

Individuals interested in pursuing admission are advised to make early application as spaces are limited. When applicants complete the entry level requirements they are placed on a ready list and admitted on a first-come, first-served basis.

One hundred (100) spaces will be available for generic admission applicants each year. Students who are notified of admission may defer admission twice without losing their placement on the ready list. However, the student must enter on the third notification or be removed from the ready list and complete a new application. All requirements for coursework will be reactivated including the need to revalidate any coursework over eight years old.

Spaces vacated by generic students exiting from the program upon completion of Level I will be available for NUR 212A advanced placement applicants each Fall and Winter.

Spaces vacated through attrition will be available for applicants eligible for advanced placement into any nursing course. Students must demonstrate continued competency in previously learned nursing courses for readmission.

If the number of ready applicants exceeds the number of spaces available, the applicants with the earliest ready dates will be admitted.

Any applicants remaining, after the spaces available are filled, will be placed on the ready list for the next admission date.

Applicants on the ready list are encouraged to take the required non-nursing courses.

ENTRY LEVEL REQUIREMENTS
- Submit a completed College Admission Application. (Room 100, or call 231.777.0363).
- Submit a completed Nursing Program Admission Application. (Room 100, or call 231.777.0266).
- Submit official evidence of high school graduation or successful completion of the General Education Development (GED) tests. (Room 100, or call 231.777.0363).
- Validate a minimum of a GRADE 10 READING LEVEL competency in both vocabulary and comprehension on the Nelson-Denny Reading Test* or submit evidence of an ACT composite score of 22 or higher (Room 106, 231.777.0262).

Continued on next page.
PROGRAMS

• Validate ENG 091 competency on the MCC English Evaluation Examination*, submit evidence of an ACT composite score of 22 or higher (Room 106, or call 231.777.0262), or complete ENG 091 (or equivalent) with a minimum grade of C (2.0).
• Validate MATH 035 competency on the MCC MATH Diagnostic Test* or complete MATH 035 Modules A,B,C,D,E,F, and G or MATH 036A (or equivalent) with a minimum grade of C (2.0).
• Validate CIS 100 competency on the MCC Computer Literacy Test* or complete CIS 100 (or equivalent) with a minimum grade of C (2.0).
• Validate one year of high school chemistry competency by passing the Toledo Chemistry Placement Test* or complete CHEM 100 (or equivalent) with a minimum grade of C (2.0). Not needed for ready list; complete prior to term 5. Optional for individuals exiting upon completion of PN level.
• Complete CSS 100 (or equivalent) with a minimum grade of C (2.0) or have completed 30 credit hours of college level coursework with a minimum passing grade of C (2.0).
• Maintain a minimum cumulative grade point average of C (2.0) or better.

*Testing Center, Room 353, 777.0394

ADVANCED PLACEMENT APPLICANTS

Applicants with prior post-secondary nursing education are candidates for advanced placement admission into the Muskegon Community College Nursing Program. Admission requirements:
• Complete MCC Admission Application
• Complete MCC Nursing Program Application
• Meet with MCC Counselor
• Meet all of the generic admission entry level requirements
• Submit official evidence of prior post-secondary nursing education
• Validate competency in the required nursing and non-nursing courses, up to point of placement, on established competency examinations, or complete the required nursing and non-nursing courses (or equivalent), up to the point of placement, with a minimum grade of C (2.0).
• Students seeking the Associate Degree in Nursing (ADN) who have previously obtained the LPN or LVN licensure must possess an unencumbered license and current nursing experience. Any license action including restriction or suspension during the Nursing Program must be reported immediately to the Director of the Nursing Program.

ACCEPTANCE OF COURSE CREDIT

Credits for courses completed at Muskegon Community College or other post-secondary educational institutions will be accepted toward fulfillment of the nursing (PN and AAS) curriculum requirements provided that all of the following criteria are met:
• The courses are deemed equivalent to the courses required in the nursing curriculum.
• The courses were completed with a minimum grade of “C” (2.0).
• The courses were completed within eight years prior to ready date.

Official transcripts from institutions other than Muskegon Community College should be sent to the Records Auditor for credit evaluation (Room 104, 777.0204).

PROGRESSION AND RETENTION

To progress, students in the Muskegon Community College Nursing Program must attain a minimum grade of C (2.0) in each course in each term of the Nursing curriculum. All courses must be completed in sequence. Students failing to meet this progression requirement will be dismissed.
READMISSION
Students may apply for readmission providing they meet all general education and course competency requirements and have not repeated a nursing course more than once. When readmission requirements have been met, the student will be readmitted according to availability of space in the program. Failure to attain a passing grade in a repeated nursing course will render students ineligible for readmission.

GRADUATION
To be eligible for graduation from the nursing program, students must meet all of the following requirements:
1. Complete the nursing curriculum requirements for the diploma/degree with a minimum grade point of “C” (2.0) in each course.
2. Complete not less than 30 hours or the last 15 hours required in the nursing curriculum at Muskegon Community College.
3. File application for a graduation audit in the College Records Office no later than 90 days prior to the end of the term of anticipated graduation.

HEALTH STATUS EVALUATION
Students in the Muskegon Community College Nursing Program are required to have a health status evaluation done prior to beginning the first clinical nursing course. Each newly admitted student will be scheduled for the health status evaluation, including drug screens, TB, immunization status, and latex sensitivity screening. A health status evaluation fee will be assessed upon registration for selected nursing courses. Students are required to maintain health requirements throughout the program.

CRIMINAL BACKGROUND CHECK
Students are required by Michigan law to pass a criminal background check ensuring no felony history for the past 15 years and no history of misdemeanors including domestic violence, abuse, neglect, fraud, theft, or assault and battery within the past 10 years. Any student with a history of substance abuse or criminal conviction related to illegal drugs may be ineligible for nursing licensure. Any student who has not resided in Michigan for at least three or more years preceding application for admission to the Nursing Program is required to obtain an FBI fingerprint check. The student is responsible for the cost of the FBI check.

NURSING PROGRAM APPROVAL
The Muskegon Community College Nursing Program is approved by the Michigan Board of Nursing to provide a program of nursing education leading to the diploma in Practical Nursing and an Associate Degree in Nursing.
### ASSOCIATE IN SCIENCE AND ARTS DEGREE

1. **ENG 102** English Composition 3 Cr.
2. **Western World Cultures Group** 3 Cr.
3. **American Culture Elective** 3 Cr.
4. **Aesthetic Values Elective** 3 Cr.

If Chemistry competency is validated by examination, another Science/mathematics elective is required to fulfill the requirements of the ASA Degree.

5. **NUR 222A** Managing the Care of the Family 5 Cr.
6. **NUR 211A** Care of the Family in Psychological Crisis 4 Cr.
7. **ANTH 103** Cultural Diversity in Contemporary Society 3 Cr.
8. **NUR 212B** Care of the Family in Physiological Crisis 8 Cr.
9. **BIOL 207** Microbiology 3 Cr.
   Coreq: BIOL 207A Lab (Prereq: BIOL 105) 1 Cr.
10. **NUR 141B** Care of the Maturing Family 8 Cr.
11. **PHIL 204** Biomedical Ethics 3 Cr.
12. **PEA/DNC** PE Activity or Dance Elective 1 Cr.
13. **NUR 131B** Care of the Childrearing Family 8 Cr.
14. **BIOL 106** Anatomy & Physiology II (Prereq: BIOL 105) 4 Cr.
15. **NUR 125** Basic Physical Assessment 1 Cr.
16. **NUR 124A** Care of the Childbearing Family 4 Cr.
17. **NUR 123A** Intro. to Nursing Practice 3 Cr.
18. **NUR 121** Env. Stressors and Pharmacotherapeutics 1 Cr.
19. **ENG 101** English Composition 3 Cr.
20. **NUR 100** Overview of the Nursing Profession 1 Cr.
21. **AH 111** Env. Stressors and Nutrition 1 Cr.
22. **BIOL 105** Anatomy & Physiology I 4 Cr.
23. **COM 100** Principles of Communication 1 Cr.
24. **PEA 101A** Fitness, Wellness & Nutrition 1 Cr.
25. **PSYC 201** General Psychology 4 Cr.

#### ENTRY LEVEL COMPETENCIES

- **GRADE 10** Reading Level
- **ENG 091** Intro. to English Composition
- **CIS 100** Intro. to Personal Computers
- **CSS 100** College Success Seminar
- **MATH 035 or 036** Basic Mathematics

* Indicates course is optional for individuals exiting upon completion of PN Level; must be completed prior to Term 5 if pursuing AAS or ASA degree. If testing/coursework is over eight years old, competency must be validated on established examinations or by repeating the course. Courses in the Nursing Curriculum indicated by NUR or AH must be completed in sequence beginning with Term 1. Other non-nursing courses may be completed prior to entry into the Nursing sequence. Please see your advisor.
RESPIRATORY THERAPY

Muskogon Community College currently offers the student the Therapist level of instruction. The therapist student, after successfully completing more than two years of instruction, receives the Associate in Applied Science Degree (AAS). This level therapist must graduate from an approved college-based two or four-year respiratory therapy program and pass the advanced practical examination given by the National Board for Respiratory Therapy in order to receive credentials.

Applicants must show proficiency in MATH 040 and ENG 091 and must carry a GPA of at least 2.0 before they may enroll in the respiratory therapy program. If you have an ACT composite score of 22 or greater, and provide the College with proof of that score, the English and Reading placement tests will be waived. The math placement test is still required. NOTE: AH 101, Medical Terminology is not required, but is highly recommended prior to entry into the respiratory therapy program.

### 2 1/2 YEAR PROGRAM
#### A.A.S. DEGREE

**YEAR 1**

**Semester 1 (Fall) (Sept - Dec)**
- AH 102 Basic Patient Care Skills ....................... 3
- RT 101 RT Physics ............................................ 1
- BIOL 105 Anatomy & Physiology I L&L ............. 4
- MATH 050 Intermediate Algebra ....................... 4

**Semester 2 (Winter) (Jan - Feb)**
- CHEM 100 Fundamentals of Chemistry L&L ... 5
- RT 110 Equipment & Procedures I ................. 3
- RT 111 Intro to RT ............................................. 3

**Semester 3 (Spring) (May - June)**
- RT 130 Equipment & Procedures III .............. 3
- RT 131 Physiology ........................................... 2
- RT 132 Clinical I .......................................... 2

**Semester 4 (Fall) (Sept - Dec)**
- RT 141 Pulmonary Pathophysiology ................. 2
- RT 144 Adult Mechanical Ventilation ............. 3
- RT 152 Clinical IV ............................................. 5

**Semester 5 (Winter) (Jan - April)**
- BIOL 106 Anatomy & Physiology II L&L .......... 4
- RT 210 Cardiovascular & Renal Physiology ...... 4
- RT 220C Pediatric-Neonatal Critical Care ...... 4
- PHIL 204 Biomedical Ethics ......................... 3
- PEA/DNC *see below ........................................ 2

**Semester 6 (Spring) (May - June)**
- BUS 122 Principles of Management .................. 3
- RT 212 Advanced Clinical Practicum I ............ 3
- PSYC 201 General Psychology ....................... 4
- PSCI 111 or HIST 201 or HIST 202 *see below ... 3-4

**Semester 7 (Fall) (Sept - Dec)**
- RT 222A Clinical Rotation VII ....................... 3
- RT 230B Pulmonary Diagnostics .................... 2
- RT 240 Health Care Environment .................. 1
- BIOL 207 Microbiology L&L ......................... 4
- ENG 101 English Composition ..................... 3

**TOTAL**.................................................. 100-101

* PEA/DNC – one credit hour from PEA 101A, 103, 104A, 118 or 201 required, and one PEA/DNC credit hour of choice.
* PSCI III Intro to Government (4 cr.) or HIST 201 US to 1877 (3 cr.) or HIST 202 US from Reconstruction to Present (3 cr.).
MASSAGE THERAPY

Please be advised: the Massage Therapy Program is presently on inactive status. Please direct any questions or concerns to the Allied Health Department at 777.0223. It is our hope that the program will be reactivated soon. Watch the MCC website for more information.

Massage Therapy is a natural form of complimentary medicine with a wide range of practical benefits to the patient. It is known to promote relaxation, improve blood circulation, relieve muscle pain, tension and fatigue, relieve stiffness and improve mobility, and in general, promote good health and a feeling of well-being. It has become an important holistic tool in preventative medicine.

The Therapeutic Massage Program at MCC is a 10-month program and is designed to provide the student with training in both medical massage and wellness massage. Specific areas of study will include: Swedish, Connective Tissue/Myofascial, Sports, First Aid – CPR, Manual Lymphatic Drain, Neuromuscular Therapy, Assessments, Deep Tissue, Body Mechanics, Body/Mind/Brain Integration, Muscle Awareness, Chair Massage, Ethics and Professionalism, as well as Special Populations – Geriatrics, Pregnancy and Infant, Terminally Ill.

Graduates of the program will be eligible to write the National Certification Examination through the National Certification Board for Therapeutic Massage and Bodyworks.

Enrollment for the program is limited to 24 students. **(NOTE: If you have not taken the Intro to Massage Therapy course, you must also register for this 1 credit hour class.) Courses cannot be taken out of sequence. To complete this certificate program students must complete the following courses:

<table>
<thead>
<tr>
<th>Pre-Program</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSTH 100 Introduction to Massage Therapy</td>
<td>1</td>
</tr>
</tbody>
</table>

Fall Semester

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSTH 110 Massage I</td>
<td>4</td>
</tr>
<tr>
<td>MSTH 111A Bodywork Pathology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 105 Anatomy &amp; Physiology I</td>
<td>4</td>
</tr>
</tbody>
</table>

Winter Semester

<table>
<thead>
<tr>
<th>Winter Semester</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSTH 120 Massage II</td>
<td>4</td>
</tr>
<tr>
<td>MSTH 121 Bodywork Career Guide</td>
<td>2</td>
</tr>
<tr>
<td>MSTH 122 Clinical I</td>
<td>2</td>
</tr>
<tr>
<td>BIOL 106 Anatomy &amp; Physiology II</td>
<td>4</td>
</tr>
</tbody>
</table>

Spring Session

<table>
<thead>
<tr>
<th>Spring Session</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSTH 130 Massage III</td>
<td>2</td>
</tr>
<tr>
<td>MSTH 131 Bodywork Seminar</td>
<td>3</td>
</tr>
<tr>
<td>MSTH 132 Clinical II</td>
<td>1</td>
</tr>
</tbody>
</table>
BUSINESS PROGRAMS (Degrees, Certificates, &
Professional Development Credits)

(Degrees and Certificates — Including Accounting, Management, Marketing, Real Estate, Office
Systems Education, Criminal Justice, and Computer Information Systems)

ACCOUNTING/OFFICE MANAGEMENT – A.A.S.

The following program is for the A.A.S. Degree student. It is not designed for students
wishing to transfer to a four-year institution. Any student desiring to pursue a transfer program
in business should consult a counselor.

GENERAL EDUCATION REQUIREMENTS (20-22 CR. HRS.) CR.HRS.
BCOM 101 Business and Technical Communications ................................... 3
BCOM 102 Advanced Business and Technical Communications ................. 3
MATH 109 College Algebra with Applications OR MATH 111 Algebra with
Coordinate Geometry .................................................................................. 3-4
BUS 127 Human Relations OR COM 101 Oral Communications ............... 3
CIS 110 Computer Concepts OR CIS 120A Introduction to
Computer Information Systems ................................................................. 3
Select one course from the following: GEOG 102C Cultural Geography,
PHIL 205 Business Ethics, PSCI 111 Introduction to American Government,
PSCI 211 Comparative Governments, PSYC 201 General Psychology, or
PSYC 102 Applied Psychology ....................................................................... 3-4
PEA/DNC Physical Education and/or Dance (Required: One credit hour from:
PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC
credit hour of choice) ................................................................................. 2

BUSINESS CORE REQUIREMENTS (10 CR. HRS.)
BUS 101 Principles of Accounting I ........................................................... 4
BUS 121 Introduction to Business ............................................................... 3
BUS 200 International Business .................................................................. 3

Continued on next page.
CAREER PROGRAM REQUIREMENTS (26 CR. HRS.)
BUS 102 Principles of Accounting II ............................................................ 4
BUS 123 Business Law I ................................................................................ 3
CIS 101 Introduction to Electronic Spreadsheets ............................................ 1
CIS 102 Intermediate Electronic Spreadsheets ............................................... 1
CIS 193A Introduction to Operating Systems OR CIS 100 Introduction to
   Personal Computers ................................................................................... 1
BUS 180C Introduction to Word Processing Part I ........................................ 4
ECON 101 Principles of Economics ............................................................... 4
*BUS 103 Payroll Accounting & Business Taxes .........................................  3
*BUS 182C Office Procedures II – Document Production ............................. 2
*BUS 280C Word Processing Part II .............................................................. 3

RECOMMENDED ELECTIVES (4-6)
BUS 281C Office Procedures III - Desktop Publishing .................................. 3
BUS 273A Human Resource Management ......................................................... 3
BUS 290CI Cooperative Internship Program..................................................... 3

Minimum Total 62

*Students must obtain a grade of “C” or better in each of these three classes.

MANAGEMENT – A.A.S.

The following program is for the A.A.S. Degree student. It is not designed for the student
wishing to transfer to a four-year institution. Any student desiring to pursue a transfer program
in business should consult with a counselor.

The Management Program is a two-year curriculum focusing on Management Development
and Supervision. The program is designed to develop knowledge, attitudes, experience, and
leadership skills, which will enable both men and women to function in positions as supervisors
or managers in business and industry.

GENERAL EDUCATION REQUIREMENTS (20-22 CR. HRS.) CR. HRS.
BCOM 101 Business and Technical Communications ........................................ 3
BCOM 102 Advanced Business and Technical Communications .................. 3
BUS 126 Business Math or MATH 109 College Algebra with Applications 3-4
BUS 127 Human Relations OR COM 101 Oral Communications .................... 3
CIS 110 Computer Concepts OR CIS 120A Introduction to
   Computer Information Systems ..................................................................... 3
Select one course from the following: GEOG 102C Cultural Geography,
   PHIL 205 Business Ethics, PSCI 111 Introduction to American Government,
   PSCI 211 Comparative Governments, PSYC 201 General Psychology,
   or PSYC 102 Applied Psychology .............................................................. 3-4
PEA/DNC Physical Education and/or Dance (Required: One credit hour from:
   PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC
   credit hour of choice) ................................................................................. 2
### BUSINESS CORE REQUIREMENTS (10 CR. HRS.)
- BUS 101 Principles of Accounting I ............................................................... 4
- BUS 121 Introduction to Business ................................................................. 3
- BUS 200 International Business ................................................................. 3

### CAREER PROGRAM REQUIREMENTS (21 CR. HRS.)
- BUS 122 Principles of Management ............................................................... 3
- BUS 123 Business Law I ........................................................................... 3
- BUS 125 Supervision .................................................................................. 3
- BUS 127 Human Relations (if not taken as a Gen. Ed. Course) ...................... 3
- BUS 222 Fundamentals of Organizational Behavior .................................... 3
- BUS 260 Principles of Marketing ................................................................. 3
- BUS 273A Human Resource Management .................................................. 3

### SUGGESTED ELECTIVES (9 MINIMUM CR. HRS.)
- BUS 124 Business Law II ........................................................................... 3
- BUS 161A Effective Selling ......................................................................... 3
- BUS 166 Quality Customer Service ......................................................... 3
- BUS 274 International Studies in Human Resources ................................... 1
- BUS 221 Small Business Management ...................................................... 3
- BUS 102 Principles of Accounting II ........................................................... 4
- BUS 105 Business Statistics ...................................................................... 3
- BUS 114 Personal Finance ......................................................................... 3
- BUS/CIS 220 E-Business ......................................................................... 3
- CIS 101 Introduction to Electronic Spreadsheets ......................................... 1
- CIS 120A Introduction to Computer Information Systems ......................... 3
- QC 105 Quality/Productivity Using Statistical Process Control ................. 3
- BUS 290CI Cooperative Internship Program ............................................. 3

Minimum Total 62

### MARKETING – A.A.S.

The following program is for the A.A.S. Degree student. It is not designed for the student wishing to transfer to a four-year institution. Any student desiring to pursue a transfer program in business should consult with a counselor.

The Marketing Program is a two-year curriculum focusing on Marketing Applications and Supervision. The program is designed to develop knowledge, attitudes, experience, and leadership skills, which will enable both men and women to function in positions as supervisors or managers in business and industry.

Continued on next page.
### GENERAL EDUCATION REQUIREMENTS (22 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math or MATH 109 College Algebra with Applications</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations OR COM 101 Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 110 Computer Concepts OR CIS 120A Introduction to</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>*Select one course from the following: GEOG 102C Cultural Geography,</td>
<td></td>
</tr>
<tr>
<td>PHIL 205 Business Ethics, PSCI 111 Introduction to American Government,</td>
<td></td>
</tr>
<tr>
<td>PSCI 211 Comparative Governments, PSYC 201 General Psychology,</td>
<td></td>
</tr>
<tr>
<td>or PSYC 102 Applied Psychology</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>PEA/DNC Physical Education and/or Dance (Required: One credit hour from:</td>
<td>2</td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC</td>
<td></td>
</tr>
<tr>
<td>credit hour of choice)</td>
<td></td>
</tr>
</tbody>
</table>

### BUSINESS CORE REQUIREMENTS (10 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 101 Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 International Business</td>
<td>3</td>
</tr>
</tbody>
</table>

### CAREER PROGRAM REQUIREMENTS (24 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 260 Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 161A Effective Selling</td>
<td>3</td>
</tr>
<tr>
<td>BUS 162 Principles of Retailing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 123 Business Law I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 127 Human Relations (if not taken as a Gen. Ed. Course)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 263 Advertising Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>BUS 125 Supervision OR BUS 122 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 166 Quality Customer Service</td>
<td>3</td>
</tr>
</tbody>
</table>

### SUGGESTED ELECTIVES (MINIMUM 6 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 124 Business Law II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 221 Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 102 Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>BUS/CIS 220 E-Business</td>
<td>3</td>
</tr>
<tr>
<td>GR 104 Job Planning Layout and Design</td>
<td>3</td>
</tr>
<tr>
<td>BUS 105 Business Statistics</td>
<td>3</td>
</tr>
<tr>
<td>BUS 114 Personal Finance</td>
<td>3</td>
</tr>
<tr>
<td>CIS 120A Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>BUS 222 Fundamentals of Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>BUS 290CI Cooperative Internship Program</td>
<td>3</td>
</tr>
<tr>
<td>BUS 266 Customer Service II</td>
<td>3</td>
</tr>
</tbody>
</table>

Minimum Total 62
ENTREPRENEURSHIP PROGRAM CERTIFICATE

The purpose of the Entrepreneurship Program Certificate is to enable students to apply processes, procedures, strategies, and tactics utilized in small-business creations. Students will generate product ideas that will satisfy customer needs, utilize research strategies to determine enterprise and target market viability, implement business start-up activities, and develop a comprehensive business plan for the business opportunity. Students will implement their business plans in a second-year course.

BCOM 101 Business and Technical Communications ................................... 3
BUS 123 Business Law I ................................................................. 3
BUS 260 Principles of Marketing ..................................................... 3
BUS 166 Quality Customer Service .................................................. 3
BUS 221 Small Business Management .............................................. 3
CIS 100 Introduction to Personal Computers ...................................... 1
BUS 290 CI Cooperative Internship Program ..................................... 14
*BUS 297 EN Introduction to Entrepreneurship .................................. 3
*BUS 297 AE Accounting for Business Owners .................................. 3
*BUS 297 QB Quickbooks ................................................................. 1

*Courses Currently Under Development

CUSTOMER SERVICE SPECIALIST CERTIFICATE

BUS 127 Human Relations ................................................................. 3
BUS 161A Effective Selling .............................................................. 3
BUS 166 Quality Customer Service .................................................. 3
BUS 266 Quality Customer Service II ............................................... 3

This certificate is part of program leading to the Associate in Applied Science - Marketing Degree.

COMPUTER-RELATED PROGRAMS

COMPUTER APPLICATIONS - A.A.S.

The following program is for A.A.S. Degree students interested in careers which require extensive knowledge of microcomputer operations and personal productivity software. Students receiving an A.A.S. Degree in Computer Applications are expert users of word processing, electronic spreadsheet, and database software that operate on popular microcomputers. They learn to work within local-area networks and can develop new microcomputer-based applications using fourth-generation languages. This degree is not designed for students wishing to transfer to four-year institutions. Transfer-oriented students interested in working with computers should consult with a counselor.
### GENERAL EDUCATION REQUIREMENTS (20-22 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math or MATH 109 College Algebra with Applications</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations OR COM 101 Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>CIS 110 Computer Concepts or CIS 120A Introduction to Computer Information Systems</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Select one course from the following: GEOG 102C Cultural Geography, PHIL 205 Business Ethics, PSCI 111 Introduction to American Government, PSCI 211 Comparative Governments, PSYC 201 General Psychology, or PSYC 102 Applied Psychology

- PEA/DNC Physical Education and/or Dance (Required: One credit hour from: PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC credit hour of choice)  

### BUSINESS CORE REQUIREMENTS (10 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 101 Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 International Business</td>
<td>3</td>
</tr>
</tbody>
</table>

### CAREER PROGRAM REQUIREMENTS (30-32 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 101 Introduction to Electronic Spreadsheets</td>
<td>1</td>
</tr>
<tr>
<td>CIS 102 Intermediate Electronic Spreadsheets</td>
<td>1</td>
</tr>
<tr>
<td>CIS 109 Personal Computer Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>CIS 115 Introduction to Word Processing</td>
<td>1</td>
</tr>
<tr>
<td>CIS 177 Introduction to HTML Editors</td>
<td>1</td>
</tr>
<tr>
<td>CIS 143 Introduction to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CIS 153 Introduction to Database Management</td>
<td>1</td>
</tr>
<tr>
<td>CIS 163 Visual Basic for Applications</td>
<td>1</td>
</tr>
<tr>
<td>CIS 193A Introduction to Operating Systems</td>
<td>1</td>
</tr>
<tr>
<td>CIS 253A Database Design and Implementation</td>
<td>3</td>
</tr>
<tr>
<td>CIS 257 Designing Internet Applications or CIS187 Multimedia Digitizing</td>
<td>3</td>
</tr>
<tr>
<td>BUS179 Keyboarding</td>
<td>1</td>
</tr>
<tr>
<td>BUS290CI Cooperative Internship Program</td>
<td>3</td>
</tr>
</tbody>
</table>

Any programming course  

**ELECTIVES**  

- Minimum Total 62

**Recommended Electives: PHIL 104 Symbolic Logic or any CIS course.**
COMPUTER INFORMATION SYSTEMS (CIS) PROFESSIONAL DEVELOPMENT CREDITS

MICROSOFT OFFICE SUITE

CIS 100 Introduction to Personal Computers ................................................. 1
CIS 115WW Introduction to Word Processing, OR
  BUS 180C Introduction to Word Processing - Part I ................................ 1-4
CIS 101EW Introduction to Electronic Spreadsheets .................................... 1
CIS 119PP Introduction to Presentation Graphics ......................................... 1
CIS 153AW Introduction to Database Management ....................................... 1
CIS 163VB Visual Basic for Applications .................................................... 1
(See Course Schedule for any prerequisites.)

Total 6-10

BUSINESS COMPUTER PROGRAMMING - A.A.S.

The following program is for A.A.S. Degree students interested in computer programming business career opportunities. Students receiving an A.A.S. Degree in Computer Programming Business Focus learn to work with a midrange computer environment, which is commonly used by businesses to manage manufacturing, supply, distribution, customer relations, resource planning, and e-commerce internet servers. Students become familiar with at least two programming languages. The Computer Programming A.A.S. degree is not designed for students wishing to transfer to four-year institutions. Transfer-oriented students interested in working with computers should consult with a counselor.

GENERAL EDUCATION REQUIREMENTS (20-22 CR. HRS.)

<table>
<thead>
<tr>
<th>Course Name</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math OR MATH 109 College Algebra with Applications</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations OR COM 101 Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>CIS 110 Computer Concepts OR CIS 120A Introduction to Computer Information</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one course from the following: GEOG 102C Cultural Geography, PHIL 205 Business Ethics, PSCI 111 Introduction to American Government, PSCI 211 Comparative Governments, PSYC 201 General Psychology, or PSYC 102 Applied Psychology

3-4

PEA/DNC Physical Education and/or Dance (Required: One credit hour from:
  PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC credit hour of choice)........................................... 2

Continued on next page.
BUSINESS CORE REQUIREMENTS (10 CR. HRS.)
BUS 101 Principles of Accounting I ............................................................... 4
BUS 121 Introduction to Business ................................................................. 3
BUS 200 International Business .................................................................... 3

CAREER PROGRAM REQUIREMENTS (30-32 CR. HRS.)
CIS 101 Introduction to Electronic Spreadsheets .......................................... 1
CIS 121 File Design and Utilities for Midrange Computers.................................1
CIS 131 Operations and Commands for Midrange Computers .........................1
CIS 153 Introduction to Database Management ............................................ 1
CIS 170 RPG Programming................................................................................3
CIS 271 Advanced RPG Programming..........................................................3
CIS 210 Operating System Concepts ............................................................. 3
CIS 250 Developing Information Systems ..................................................... 3
CIS 251 Database Programming for Midrange Computers..................................3
BUS 290CI Cooperative Internship Program .................................................. 3
OTHER PROGRAMMING REQUIREMENTS.........................................................6

Choose one of the sequences below:
CIS 185 C Programming and CIS 280 Java Programming

OR

CIS 130 COBOL Programming and
CIS 230 Advanced COBOL Programming

OR

CIS 160 Programming Small Computers in BASIC and
CIS 260 Advanced BASIC Programming

ELECTIVES** ........................................................................................... 2-4

Minimum Total 62

**Recommended Electives: BUS 179 Keyboarding, BUS 102 Principles of Accounting II, PHIL 104 Symbolic Logic, or any 200-level CIS course.

RPG PROGRAMMING CERTIFICATE
CIS 120A Introduction to Computer Information Systems.................................3
CIS 121 File Design and Utilities for Midrange Computers..............................1
CIS 131 Operations and Commands for Midrange Computers.........................1
CIS 170 RPG Programming.............................................................................3
CIS 271 Advanced RPG Programming..........................................................3
CIS 210 Operating System Concepts ............................................................. 3
CIS 251 Database Programming for Midrange Computers..............................3
CIS 250 Developing Information Systems ..................................................... 3

20 Credits
C/Java COMPUTER PROGRAMMING - A.A.S

The following program is for A.A.S. Degree students interested in computer programming using procedural and object-oriented methodologies. Students receiving an A.A.S. degree in Computer Programming C/C++, Java learn the elements of the languages used for encryption algorithms, system utilities, and commercial computer applications. Students become familiar with at least two computer languages. This degree is not designed for students wishing to transfer to four-year institutions. Transfer-oriented students interested in working with computers should consult with a counselor.

GENERAL EDUCATION REQUIREMENTS (20-22 CR. HRS.)
CR. HRS.
BCOM 101 Business and Technical Communications ........................................ 3
BCOM 102 Advanced Business and Technical Communications ................... 3
BUS 126 Business Math OR MATH 109 College Algebra with Applications 3-4
BUS 127 Human Relations OR COM 101 Oral Communication ...................... 3
CIS 110 Computer Concepts or CIS 120A Introduction to
Computer Information Systems ................................................................. 3
Select one course from the following: GEOG 102C Cultural Geography,
PHIL 205 Business Ethics, PSCI 111 Introduction to American Government,
PSCI 211 Comparative Governments, PSYC 201 General Psychology, or
PSYC 102 Applied Psychology .................................................................. 3-4
PEA/DNC Physical Education and/or Dance (Required: One credit hour from:
PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC
credit hour of choice) ................................................................................. 2

BUSINESS CORE REQUIREMENTS (10 CR. HRS.)
BUS 101 Principles of Accounting I ............................................................. 4
BUS 121 Introduction to Business ............................................................... 3
BUS 200 International Business .................................................................. 3

CAREER PROGRAM REQUIREMENTS (30-32 CR. HRS.)
CIS 101 Introduction to Electronic Spreadsheets .......................................... 1
CIS 102 Intermediate Electronic Spreadsheets ........................................... 1
CIS 153 Introduction to Database Management ......................................... 1
CIS 185 C Programming ............................................................................. 3
CIS 280 Java Programming ........................................................................... 3
CIS 210 Operating System Concepts .......................................................... 3
CIS 250 Developing Information Systems ................................................... 3
CIS 253A Database Design and Implementation ......................................... 3
BUS 290CI Cooperative Internship Program .............................................. 3
OTHER PROGRAMMING REQUIREMENTS ..................................................... 6

Continued on next page.
Choose one of the sequences below:
CIS 170 RPG Programming and CIS 271 Advanced RPG Programming

OR
CIS 130 COBOL Programming and
CIS 230 Advanced COBOL Programming

OR
CIS 160 Programming Small Computers in BASIC and
CIS 260 Advanced BASIC Programming

ELECTIVES** ...........................................................................................................3-5

Minimum Total 62

**Recommended Electives: BUS 179 Keyboarding, PHIL 104 Symbolic Logic,
CIS 109 Personal Computer Maintenance, CIS 143 Introduction to Local Area
Networks or any 200-level CIS course.

C/Java PROGRAMMING CERTIFICATE
CIS 120A Introduction to Computer Information Systems..........................3
CIS 153 Introduction to Database Management.........................................3
CIS 185 C Programming...............................................................................3
CIS 210 Operating System Concepts .........................................................3
CIS 250 Developing Information Systems ..................................................3
CIS 253A Database Design and Implementation.........................................3
CIS 280 Java Programming.........................................................................3

19 Credits

COMPUTER NETWORK TECHNOLOGY - A.A.S
The following program is for A.A.S. Degree students interested in careers which require
extensive knowledge of the local and wide area networks. Students receiving an A.A.S. Degree in
Computer Network Technology can create, install and maintain local area networks and are
knowledgeable about the protocols and hardware used to transfer data across wide area
networks. They learn to work within different network environments and use the latest networking
technologies. This degree is not designed for students wishing to transfer to four-year institu-
tions. Transfer-oriented students interested in working with computers should consult with a
counselor.

GENERAL EDUCATION REQUIREMENTS (20-22 CR. HRS.) CR. HRS.
BCOM 101 Business and Technical Communications .................................3
BCOM 102 Advanced Business and Technical Communications .................3
BUS 126 Business Math or MATH 109 College Algebra with Applications 3-4
BUS 127 Human Relations OR COM 101 Oral Communication .................3
CIS 110 Computer Concepts OR CIS 120A Introduction to
Computer Information Systems ....................................................................3

Select one course from the following: GEOG 102C Cultural Geography,
PHIL 205 Business Ethics, PSCI 111 Introduction to American Government,
PSCI 211 Comparative Governments, PSYC 201 General Psychology, or
PSYC 102 Applied Psychology ............................................................... 3-4
PEA/DNC Physical Education and/or Dance (Required: One credit hour from:
PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC
credit hour of choice) ................................................................................. 2

BUSINESS CORE REQUIREMENTS (10 CR. HRS.)
BUS 101 Principles of Accounting I ............................................................... 4
BUS 121 Introduction to Business ............................................................... 3
BUS 200 International Business ............................................................... 3

CAREER PROGRAM REQUIREMENTS (30-32 CR. HRS.)
CIS 109 Personal Computer Maintenance ...................................................... 2
CIS 143 Introduction to Local Area Networks ............................................... 3
CIS 183 Networking Technologies ............................................................... 3
CIS 209 PC Maintenance II (A+ Certification) ............................................... 3
CIS 210 Operating System Concepts ............................................................ 3
CIS 243 Telecommunications ...................................................................... 3
CIS 283 Advanced Local Area Networks ..................................................... 3
CIS 293 Contemporary Issues In Networking Design .................................... 3
BUS 290CI Cooperative Internship Program ................................................ 3

ELECTIVES** ........................................................................................... 5-7

Minimum Total 62

**Recommended Electives: PHIL 104 Symbolic Logic, CIS 253A Database
Design and Implementation or any 200 level CIS course.

COMPUTER NETWORKING CERTIFICATE
BCOM 101 Business and Technical Communications ....................................... 3
BUS 121 Introduction to Business ............................................................... 3
CIS 109 Personal Computer Maintenance ...................................................... 2
CIS 120A Introduction to Computer Information Systems ................................ 3
CIS 143 Introduction to Local Area Networks ............................................... 3
CIS 183 Networking Technologies ............................................................... 3
CIS 209 Personal Computer Maintenance II .................................................. 3
CIS 210 Operating Systems Concepts ........................................................... 3
CIS 243 Telecommunications ...................................................................... 3
CIS 283 Advanced Local Area Networking .................................................... 3
CIS 293 Contemporary Issues in Networking Design .................................... 3

Total 32
E-BUSINESS – A.A.S.

The following program is for A.A.S. Degree students interested in careers which require extensive knowledge of the Internet. Students receiving an A.A.S. Degree in E-Business can create Web pages, install and maintain Web servers and are knowledgeable about the protocols and hardware used to transfer data across the Internet. They learn to work within wide-area networks and can develop new Web sites using HTML coding. This degree is not designed for students wishing to transfer to four-year institutions. Transfer-oriented students interested in working with computers should consult with a counselor.

**GENERAL EDUCATION REQUIREMENTS (20-22 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math or MATH 109 College Algebra With Applications</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations OR COM 101 Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>CIS 110 Computer Concepts or CIS 120A Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Select one course from the following: GEOG 102C Cultural Geography, PHIL 205 Business Ethics, PSCI 111 Introduction to American Government, PSCI 211 Comparative Governments, PSYC 201 General Psychology, or PSYC 102 Applied Psychology</td>
<td>3-4</td>
</tr>
<tr>
<td>PEA/DNC Physical Education and/or Dance (Required: One credit hour from: PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC credit hour of choice)</td>
<td>2</td>
</tr>
</tbody>
</table>

**BUSINESS CORE REQUIREMENTS (10 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 101 Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 International Business</td>
<td>3</td>
</tr>
</tbody>
</table>

**CAREER PROGRAM REQUIREMENTS (30-32 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRD 120 Introduction to Design</td>
<td>3</td>
</tr>
<tr>
<td>CIS 153 Introduction to Database Management</td>
<td>1</td>
</tr>
<tr>
<td>One of the following computer programming courses:</td>
<td>3</td>
</tr>
<tr>
<td>* CIS 160 Programming Small Computers in BASIC (using Visual Basic)</td>
<td></td>
</tr>
<tr>
<td>* CIS 185 C Programming</td>
<td></td>
</tr>
<tr>
<td>CIS 193A Introduction to Operating Systems</td>
<td>1</td>
</tr>
<tr>
<td>CIS 187 Multimedia Digitizing</td>
<td>3</td>
</tr>
<tr>
<td>CIS 253A Database Design and Implementation</td>
<td>3</td>
</tr>
<tr>
<td>CIS 257 Designing Internet Applications (using HTML)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 290CI Cooperative Internship Program</td>
<td>3</td>
</tr>
<tr>
<td>CIS 277 Internet Site Administration</td>
<td>3</td>
</tr>
<tr>
<td>CIS 220/BUS 220 E-Business</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTIVES**

| Minimum Total | 62 |

**Recommended Electives: CIS 177, CIS 183, CIS 210, CIS 250, or a 200-level programming class**
Web Design Certificate (25 CR. HRS.)
GRD 120 Introduction to Graphic Design ...................................................... 3
GRD 167/CIS 167 Introduction to Internet Animation..........................................1
GR 160 Digital Imaging .................................................................................. 3
CIS 120A Introduction to Computer Information Systems.....................................3
CIS 177 Introduction to HTML Editors................................................................ 1
CIS 193A Introduction to Operating Systems.......................................................1
CIS 217 Introduction to Java Script Programming.................................................1
CIS 220 E-Business...........................................................................................3
CIS 253A Database Design and Implementation..................................................3
CIS 257 Designing Internet Applications...............................................................3
CIS 280 Java Programming............................................................................. 3

OFFICE SYSTEMS EDUCATION PROGRAMS
(SEE “BUSINESS” FOR COURSE DESCRIPTIONS)
Many of the OSE courses are taught in the self-paced Office Systems Education computer lab (OSE Lab). Instructors using this system recognize that no two students are exactly alike in background, skills, and learning abilities. Students will find that this learning system can be adapted to their own special talents, needs, and objectives. Please note that all prerequisites, as listed in class schedules, must be met prior to enrolling in a Lab course.

This system of individualized instruction combines specialized software and printed materials in a sequence of learning activities. Students PROCEED AT THEIR OWN PACE WITH A DAILY SCHEDULE THAT THEY CREATE within the lab hours of operation and following a weekly schedule of assignments. The following courses are currently taught in the OSE Lab:

BUS 179 Keyboarding
BUS 188B Voice Transcription – Legal
BUS 181C Office Procedures I – Document Formatting
BUS 188D Voice Transcription – Medical Part I
BUS 182C Office Procedures II – Document Production
BUS 188E Voice Transcription – Medical Part II
BUS 281C Office Procedures III – Desktop Publishing
BUS 194 Business English Essentials
BUS 187A Electronic Records Management
BUS 280C Word Processing Part II
BUS 185B Electronic Calculator
BUS 188A1 Voice Transcription – Administrative
CIS 115WW Introduction to Word Processing (beginning Fall 2006)
CIS 119PP Introduction to Presentation Graphics (beginning Fall 2006)
CIS 101EW Introduction to Electronic Spreadsheets (beginning Winter 2007)
CIS 153AW Introduction to Database Management (beginning Winter 2007)
OSE Lab students design a schedule that allows them to finish comfortably the course or courses in which they enroll. Students can complete the course assignments in the Lab at any time that the Lab is open during the day or at night. For OSE Lab courses, students have up to 15 weeks in the Fall and Winter and up to 7.5 weeks in the spring to complete their course(s). Keyboarding and Records Management are always 7.5-week courses. It is possible to complete OSE Lab courses in less than the 15 weeks (or 7.5 weeks as mentioned above).

Students who enroll in an OSE Lab course should check the MCC class schedule to read about the scheduled date for the OSE Lab student orientation. This student orientation is required for all first-time OSE Lab students.

**A.A.S. Degree Programs**

- Office Systems - Administrative
- Office Systems - Information Processing
- Office Systems - International
- Office Systems - Legal
- Office Systems - Medical

**Professional Development Credits**

- Administrative Voice Transcription
- Legal Voice Transcription
- Medical Voice Transcription
- Office Skill Building
- Word Processing

**Certificates**

- Medical Clerk
- Office Support Specialist

**OFFICE SYSTEMS EDUCATION – ADMINISTRATIVE – A.A.S.**

The following program is for the A.A.S. Degree student. It is not designed for the student wishing to transfer to a four-year institution. Any student desiring to pursue a transfer program in business should consult with a counselor. This program will provide training in office systems education activities in order for the student to attain a high degree of competency and meet entry-level qualifications for an administrative office assistant position.

**GENERAL EDUCATION REQUIREMENTS (21-22 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math or MATH 109 College Algebra with Applications</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations OR COM 101 Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 110 Computer Concepts OR CIS 120A Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Select one course from the following: GEG 102C Cultural Geography, PHIL 205 Business Ethics, PSCI 111 Introduction to American Government, PSCI 211 Comparative Governments, PSYC 201 General Psychology, or PSYC 102 Applied Psychology</td>
<td>3-4</td>
</tr>
<tr>
<td>PEA/DNC Physical Education and/or Dance (Required: One credit hour from: PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC credit hour of choice)</td>
<td>2</td>
</tr>
</tbody>
</table>

**BUSINESS CORE REQUIREMENTS (10 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 101 Principles of Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUS 121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 International Business</td>
<td>3</td>
</tr>
</tbody>
</table>
CORE REQUIREMENTS (26 CR. HRS.)
1BUS 179 Keyboarding (See note below for placement) ....................... 1
2BUS 181C Office Procedures I–Document Formatting
   (See note below for placement) ........................................... 3
3BUS 180C Introduction to Word Processing Part I ........................ 4
4BUS 182C Office Procedures II–Document Production ................. 2
CIS 101 Introduction to Electronic Spreadsheets ................................. 1
CIS 153 Introduction to Database Management ...................................... 1
CIS 119PP Introduction to Presentation Graphics ................................... 1
BUS 185B Electronic Calculator .................................................... 2
BUS 187A Electronic Records Management ........................................... 2
BUS 280C Word Processing Part II .................................................. 3
BUS 281C Office Procedures III–Desktop Publishing ....................... 3
BUS 290CI Cooperative Internship Program ..................................... 3

CAREER PROGRAM REQUIREMENTS (4 CR. HRS.)
BUS 188A1 Voice Transcription – Administrative .......................... 3
BUS 194 Business English Essentials ............................................. 1

SUGGESTED ELECTIVES
(Dependent on individual student to meet 62 cr. hr. minimum.)
BUS 102 Principles of Accounting II ............................................... 4
BUS 122 Principles of Management .................................................. 3
BUS 166 Quality Customer Service .................................................. 3
CIS 100 Introduction to Personal Computers ..................................... 1
CIS 160 Programming Small Computers in BASIC ............................ 3
PSCI 202 International Relations .................................................... 3

Minimum Total 62

1BUS 179 Keyboarding – This course should be taken the first semester by the student with no formal
   training in correct keyboarding techniques. A student with a typing speed of at least 20-25 wpm should
   enroll in BUS 181C.

2BUS 181C Office Procedures I–Document Formatting – Designed for the student who has correct
typing techniques, types at least 25-35 wpm, and has basic word processing skills but lacks formal training
in formatting business documents. Student must obtain a grade of C- or better to advance.

3BUS 180C is a prerequisite for BUS 182C Office Procedures II–Document Production and BUS 281C
   Office Procedures III–Desktop Publishing, voice transcription courses, and advanced word processing
   courses. Attempt to enroll in this class your first semester.

4BUS 182C Office Procedures II–Document Production – Designed for the student with some formal
   training in document formatting, types 40 wpm or higher, and has a knowledge of Microsoft Word. Student
   must obtain a grade of C- or better to advance.

5Student must obtain a grade of C- or better to advance.

Please see the Business Department counselor or an OSE instructor for the recommended
sequence of classes for a semester.
OFFICE SYSTEMS EDUCATION–INFORMATION PROCESSING - A.A.S.

The following program is for the A.A.S. Degree student. It is not designed for the student planning to transfer to a four-year institution. Any student desiring to pursue a transfer program in business should consult with a counselor. This program will provide the student with training in office systems education activities in order for the student to attain a high degree of competency and meet entry-level qualifications for an administrative office assistant position with special skills in information processing.

GENERAL EDUCATION REQUIREMENTS (21-22 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math or MATH 109 College Algebra with Applications</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations OR COM 101 Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 110 Computer Concepts OR CIS 120A Introduction to</td>
<td>3</td>
</tr>
<tr>
<td>Computer Information Systems</td>
<td></td>
</tr>
<tr>
<td>Select one course from the following:</td>
<td></td>
</tr>
<tr>
<td>GEOG 102C Cultural Geography,</td>
<td></td>
</tr>
<tr>
<td>PHIL 205 Business Ethics,</td>
<td></td>
</tr>
<tr>
<td>PSCI 111 Introduction to American Government,</td>
<td></td>
</tr>
<tr>
<td>PSCI 211 Comparative Governments,</td>
<td></td>
</tr>
<tr>
<td>PSYC 201 General Psychology,</td>
<td></td>
</tr>
<tr>
<td>PSYC 102 Applied Psychology</td>
<td></td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC</td>
<td>2</td>
</tr>
<tr>
<td>Physical Education and/or Dance (Required: One credit hour from:</td>
<td></td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC</td>
<td></td>
</tr>
<tr>
<td>Physical Education and/or Dance (Required: One credit hour from:</td>
<td></td>
</tr>
</tbody>
</table>

BUSINESS CORE REQUIREMENTS (10 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 101 Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 International Business</td>
<td>3</td>
</tr>
</tbody>
</table>

CORE REQUIREMENTS (26 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 179 Keyboarding (See note below for placement)</td>
<td>1</td>
</tr>
<tr>
<td>BUS 181C Office Procedures I–Document Formatting</td>
<td></td>
</tr>
<tr>
<td>(See note below for placement)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 180C Introduction to Word Processing Part I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 182C Office Procedures II–Document Production</td>
<td>2</td>
</tr>
<tr>
<td>CIS 101 Introduction to Electronic Spreadsheets</td>
<td>1</td>
</tr>
<tr>
<td>CIS 153 Introduction to Database Management</td>
<td>1</td>
</tr>
<tr>
<td>CIS 119PP Introduction to Presentation Graphics</td>
<td>1</td>
</tr>
<tr>
<td>BUS 185B Electronic Calculator</td>
<td>2</td>
</tr>
<tr>
<td>BUS 187A Electronic Records Management</td>
<td>2</td>
</tr>
<tr>
<td>BUS 280C Word Processing Part II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 281C Office Procedures III–Desktop Publishing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 290CI Cooperative Internship Program</td>
<td>3</td>
</tr>
</tbody>
</table>
CAREER PROGRAM REQUIREMENTS (4 CR. HRS.)
CIS 100 Introduction to Personal Computers .......................................................... 1
CIS 102 Intermediate Electronic Spreadsheet ................................................ 1
CIS 163 Introduction to BASIC Programming Language ...................................... 1
CIS 177 Introduction to HTML Editors ................................................................. 1

SUGGESTED ELECTIVES
(Dependent on individual student to meet 62 cr. hr. minimum.)
BUS 102 Principles of Accounting II ............................................................. 4
BUS 122 Principles of Management ............................................................... 3
BUS 166 Quality Customer Service ..................................................................... 3
BUS 194 Business English Essentials ............................................................ 1
PSCI 202 International Relations ...................................................................... 3
Minimum Total  62

1BUS 179 Keyboarding – This course should be taken the first semester by the student with no formal training in correct keyboarding techniques. A student with a typing speed of at least 20-25 wpm should enroll in BUS 181C.

2BUS 181C Office Procedures I–Document Formatting – Designed for the student who has correct typing techniques, types at least 25-35 wpm, and has basic word processing skills but lacks formal training in formatting business documents. Student must obtain a grade of C- or better to advance.

3BUS 180C is a prerequisite for BUS 182C Office Procedures II–Document Production and BUS 281C Office Procedures III–Desktop Publishing, voice transcription courses, and advanced word processing courses. Attempt to enroll in this class your first semester.

4BUS 182C Office Procedures II–Document Production – Designed for the student with some formal training in document formatting, types 40 wpm or higher, and has a knowledge of Microsoft Word. Student must obtain a grade of C- or better to advance.

5Student must obtain a grade of C- or better to advance.

Please see the Business Department counselor or an OSE instructor for the recommended sequence of classes for a semester.
OFFICE SYSTEMS EDUCATION – INTERNATIONAL —A.A.S.

The following program is for the A.A.S. Degree student. It is not designed for the student wishing to transfer to a four-year institution. Any student desiring to pursue a transfer program in business should consult with a counselor. This program will provide training in office systems education activities in order for the student to attain a high degree of competency and meet entry-level qualifications for an administrative office assistant position; with specialized foreign language skills.

### GENERAL EDUCATION REQUIREMENTS (21-22 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math or MATH 109 College Algebra with Applications</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations OR COM 101 Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 110 Computer Concepts OR CIS 120A Introduction to Computer Information Systems</td>
<td>3-4</td>
</tr>
<tr>
<td>Select one course from the following:</td>
<td>3-4</td>
</tr>
<tr>
<td>GEOG 102C Cultural Geography, PHIL 205 Business Ethics, PSCI 111 Introduction to American Government, PSCI 211 Comparative Governments, PSYC 201 General Psychology, or PSYC 102 Applied Psychology</td>
<td></td>
</tr>
<tr>
<td>PEA/DNC Physical Education and/or Dance (Required: One credit hour from: PEY 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC credit hour of choice)</td>
<td>2</td>
</tr>
</tbody>
</table>

### BUSINESS CORE REQUIREMENTS (10 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 101 Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 International Business</td>
<td>3</td>
</tr>
</tbody>
</table>

### CORE REQUIREMENTS (26 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 179 Keyboarding (See note below for placement)</td>
<td>1</td>
</tr>
<tr>
<td>BUS 181C Office Procedures I–Document Formatting (See note below for placement)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 180C Introduction to Word Processing Part I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 182C Office Procedures II–Document Production</td>
<td>2</td>
</tr>
<tr>
<td>CIS 101 Introduction to Electronic Spreadsheets</td>
<td>1</td>
</tr>
<tr>
<td>CIS 153 Introduction to Database Management</td>
<td>1</td>
</tr>
<tr>
<td>CIS 119PP Introduction to Presentation Graphics</td>
<td>1</td>
</tr>
<tr>
<td>BUS 185B Electronic Calculator</td>
<td>2</td>
</tr>
<tr>
<td>BUS 187A Electronic Records Management</td>
<td>2</td>
</tr>
<tr>
<td>BUS 280C Word Processing Part II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 281C Office Procedures III–Desktop Publishing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 290CI Cooperative Internship Program</td>
<td>3</td>
</tr>
</tbody>
</table>
# Programs

## CAREER PROGRAM REQUIREMENTS (11 CR. HRS.)

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Language (See counselor for placement possibilities)</td>
<td>8</td>
</tr>
<tr>
<td>PSCI 211 Comparative Governments (if not taken as a General Education course) OR PSCI 202 International Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

## SUGGESTED ELECTIVES

### (Dependent on individual student to meet 62 cr. hr. minimum.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 102 Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>BUS 122 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 166 Quality Customer Service</td>
<td>3</td>
</tr>
<tr>
<td>CIS 100 Introduction to Personal Computers</td>
<td>1</td>
</tr>
<tr>
<td>PHIL 205 Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 105 World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 102C Cultural Geography (if not taken as Gen. Ed.)</td>
<td>3</td>
</tr>
<tr>
<td>PSCI 202 International Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

Minimum Total 62

1BUS 179 Keyboarding – This course should be taken the first semester by the student with no formal training in correct keyboarding techniques. A student with a typing speed of at least 20-25 wpm should enroll in BUS 181C.

2BUS 181C Office Procedures I–Document Formatting – Designed for the student who has correct typing techniques, types at least 25-35 wpm, and has basic word processing skills but lacks formal training in formatting business documents. Student must obtain a grade of C- or better to advance.

3BUS 180C is a prerequisite for BUS 182C Office Procedures II–Document Production and BUS 281C Office Procedures III–Desktop Publishing, voice transcription courses, and advanced word processing courses. Attempt to enroll in this class your first semester.

4BUS 182C Office Procedures II–Document Production – Designed for the student with some formal training in document formatting, types 40 wpm or higher, and has a knowledge of Microsoft Word. Student must obtain a grade of C- or better to advance.

5Student must obtain a grade of C- or better to advance.

Please see the Business Department counselor or an OSE instructor for the recommended sequence of classes for a semester.
OFFICE SYSTEMS EDUCATION – LEGAL — A.A.S.

The following program is for the A.A.S. Degree student. It is not designed for the student wishing to transfer to a four-year institution. Any student desiring to pursue a transfer program in business should consult with a counselor. This program will provide the student with training in office systems education activities in order to attain a high degree of competency and meet entry-level qualifications for an administrative office assistant position with specialized legal skills.

GENERAL EDUCATION REQUIREMENTS (21-22 CR. HRS.) …. CR. HRS.

1 BCOM 101 Business and Technical Communications ................................. 3
2 BCOM 102 Advanced Business and Technical Communications ............... 3
3 BUS 126 Business Math or MATH 109 College Algebra with Applications .... 3-4
4 BUS 127 Human Relations OR COM 101 Oral Communications ............... 3
5 CIS 110 Computer Concepts OR CIS 120A Introduction to
   Computer Information Systems ............................................................... 3
Select one course from the following: GEOG 102C Cultural Geography,
   PHIL 205 Business Ethics, PSCI 111 Introduction to American Government,
   PSCI 211 Comparative Governments, PSYC 201 General Psychology,
   or PSYC 102 Applied Psychology ....................................................... 3-4
6 PEA/DNC Physical Education and/or Dance (Required: One credit hour from:
   PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC
   credit hour of choice). ........................................................................ 2

BUSINESS CORE REQUIREMENTS (10 CR. HRS.)

1 BUS 101 Principles of Accounting I .......................................................... 4
2 BUS 121 Introduction to Business ............................................................. 3
3 BUS 200 International Business ............................................................... 3

CORE REQUIREMENTS (26 CR. HRS.)

1 BUS 179 Keyboarding (See note below for placement) ............................. 1
2 BUS 181C Office Procedures I–Document Formatting
   (See note below for placement) ............................................................... 3
3 BUS 180C Introduction to Word Processing Part I .................................... 4
4 BUS 182C Office Procedures II–Document Production ............................ 2
5 CIS 101 Introduction to Electronic Spreadsheets ....................................... 1
6 CIS 153 Introduction to Database Management ....................................... 1
7 CIS 119PP Introduction to Presentation Graphics ..................................... 1
8 BUS 185B Electronic Calculator ............................................................... 2
9 BUS 187A Electronic Records Management ............................................ 2
10 BUS 280C Word Processing Part II ........................................................ 3
11 BUS 281C Office Procedures III–Desktop Publishing .............................. 3
12 BUS 290CI Cooperative Internship Program .......................................... 3
CAREER PROGRAM REQUIREMENTS (6 CR. HRS.)

BUS 188B Voice Transcription – Legal .......................................................... 3
BUS 123 Business Law I ................................................................................ 3

SUGGESTED ELECTIVES
(Independent on individual student to meet 62 cr. hr. minimum.)

BUS 102 Principles of Accounting II ............................................................. 4
BUS 122 Principles of Management ............................................................... 3
BUS 166 Quality Customer Service ............................................................... 3
BUS 194 Business English Essentials............................................................. 1
CIS 100 Introduction to Personal Computers................................................... 1
PSCI 202 International Relations....................................................................... 3

Minimum Total 62

1BUS 179 Keyboarding – This course should be taken the first semester by the student with no formal training in correct keyboarding techniques. A student with a typing speed of at least 20-25 wpm should enroll in BUS 181C.
2BUS 181C Office Procedures I–Document Formatting – Designed for the student who has correct typing techniques, types at least 25-35 wpm, and has basic word processing skills but lacks formal training in formatting business documents. Student must obtain a grade of C- or better to advance.
3BUS 180C is a prerequisite for BUS 182C Office Procedures II–Document Production and BUS 281C Office Procedures III–Desktop Publishing, voice transcription courses, and advanced word processing courses. Attempt to enroll in this class your first semester.
4BUS 182C Office Procedures II–Document Production – Designed for the student with some formal training in document formatting, types 40 wpm or higher, and has a knowledge of Microsoft Word. Student must obtain a grade of C- or better to advance.
5Student must obtain a grade of C- or better to advance.

Please see the Business Department counselor or an OSE instructor for the recommended sequence of classes for a semester.
OFFICE SYSTEMS EDUCATION – MEDICAL — A.A.S.

The following program is for the A.A.S. Degree student. It is not designed for the student wishing to transfer to a four-year institution. Any student desiring to pursue a transfer program in business should consult with a counselor. This program will provide the student with training in office systems education activities in order to attain a high degree of competency and meet entry-level qualifications for an administrative office assistant position with specialized medical skills.

**GENERAL EDUCATION REQUIREMENTS (21-22 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math or MATH 109 College Algebra with Applications</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations OR COM 101 Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 110 Computer Concepts OR CIS 120A Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Select one course from the following: GEOG 102C Cultural Geography, PHIL 205 Business Ethics, PSCI 111 Introduction to American Government, PSCI 211 Comparative Governments, PSYC 201 General Psychology, or PSYC 102 Applied Psychology</td>
<td>3-4</td>
</tr>
<tr>
<td>PEA/DNC Physical Education and/or Dance (Required: One credit hour from: PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC credit hour of choice)</td>
<td>2</td>
</tr>
</tbody>
</table>

**BUSINESS CORE REQUIREMENTS (10 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 101 Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 International Business</td>
<td>3</td>
</tr>
</tbody>
</table>

**CORE REQUIREMENTS (26 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 179 Keyboarding (See note below for placement)</td>
<td>1</td>
</tr>
<tr>
<td>BUS 181C Office Procedures I—Document Formatting (See note below for placement)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 180C Introduction to Word Processing Part I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 182C Office Procedures II—Document Production</td>
<td>2</td>
</tr>
<tr>
<td>CIS 101 Introduction to Electronic Spreadsheets</td>
<td>1</td>
</tr>
<tr>
<td>CIS 153 Introduction to Database Management</td>
<td>1</td>
</tr>
<tr>
<td>CIS 119PP Introduction to Presentation Graphics</td>
<td>1</td>
</tr>
<tr>
<td>BUS 185B Electronic Calculator</td>
<td>2</td>
</tr>
<tr>
<td>BUS 187A Electronic Records Management</td>
<td>2</td>
</tr>
<tr>
<td>BUS 280C Word Processing Part II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 281C Office Procedures III—Desktop Publishing</td>
<td>3</td>
</tr>
<tr>
<td>BUS 290CI Cooperative Internship Program</td>
<td>3</td>
</tr>
</tbody>
</table>
**CAREER PROGRAM REQUIREMENTS (9 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 188D Voice Transcription – Medical, Part I</td>
<td>2</td>
</tr>
<tr>
<td>BUS 188E Voice Transcription – Medical, Part II</td>
<td>2</td>
</tr>
<tr>
<td>AH 101 Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td>AH 104 Medical Insurance Billing</td>
<td>2</td>
</tr>
</tbody>
</table>

**SUGGESTED ELECTIVES**

(Dependent on individual student to meet 62 cr. hr. minimum.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 194 Business English Essentials</td>
<td>1</td>
</tr>
<tr>
<td>BUS 102 Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>BUS 166 Quality Customer Service</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 103 Introductory Biology</td>
<td>4</td>
</tr>
<tr>
<td>CIS 100 Introduction to Personal Computers</td>
<td>1</td>
</tr>
<tr>
<td>PSCI 202 International Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

Minimum Total 62

1. **BUS 179 Keyboarding** – This course should be taken the first semester by the student with no formal training in correct keyboarding techniques. A student with a typing speed of at least 20-25 wpm should enroll in BUS 181C.

2. **BUS 181C Office Procedures I – Document Formatting** – Designed for the student who has correct typing techniques, types at least 25-35 wpm, and has basic word processing skills but lacks formal training in formatting business documents. Student must obtain a grade of C- or better to advance.

3. **BUS 180C** is a prerequisite for **BUS 182C Office Procedures II – Document Production** and **BUS 281C Office Procedures III – Desktop Publishing**, voice transcription courses, and advanced word processing courses. Attempt to enroll in this class your first semester.

4. **BUS 182C Office Procedures II – Document Production** – Designed for the student with some formal training in document formatting, types 40 wpm or higher, and has a knowledge of Microsoft Word. Student must obtain a grade of C- or better to advance.

5. **Student must obtain a grade of C- or better to advance.**

---

Please see the Business Department counselor or an OSE instructor for the recommended sequence of classes for a semester.
OFFICE SYSTEMS EDUCATION – CERTIFICATE PROGRAMS

The following one-year programs are designed for non-transfer students. Students with a desire to pursue a transfer program in business should consult a counselor.

OFFICE SUPPORT SPECIALIST CERTIFICATE

This program is designed to provide training and practice in information processing skills for an entry-level position in an office environment. Proficiency and speed in the performance of these skills will be measured.

<table>
<thead>
<tr>
<th>CAREER PROGRAM REQUIREMENTS</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 179 Keyboarding (See note below for placement)</td>
<td>1</td>
</tr>
<tr>
<td>CIS 100 Introduction to Personal Computers</td>
<td>1</td>
</tr>
<tr>
<td>BUS 181C Office Procedures I–Document Formatting (See note below for placement)</td>
<td>3</td>
</tr>
<tr>
<td>BUS 180C Introduction to Word Processing Part I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 101 Introduction to Electronic Spreadsheets</td>
<td>1</td>
</tr>
<tr>
<td>CIS 102 Intermediate Electronic Spreadsheets</td>
<td>1</td>
</tr>
<tr>
<td>CIS 153 Introduction to Database Management</td>
<td>1</td>
</tr>
<tr>
<td>BUS 182C Office Procedures II–Document Production</td>
<td>2</td>
</tr>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 119PP Introduction to Presentation Graphics</td>
<td>1</td>
</tr>
<tr>
<td>BUS 185B Electronic Calculator</td>
<td>2</td>
</tr>
<tr>
<td>BUS 187A Electronic Records Management</td>
<td>2</td>
</tr>
<tr>
<td>BUS 280C Word Processing Part II</td>
<td>3</td>
</tr>
<tr>
<td>SUGGESTED ELECTIVES (Dependent on individual student to meet 30 cr. hr. minimum.)</td>
<td></td>
</tr>
<tr>
<td>BUS 188AI Voice Transcription - Administrative</td>
<td>3</td>
</tr>
<tr>
<td>BUS 120A Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>BUS 121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 194 Business English Essentials</td>
<td>1</td>
</tr>
<tr>
<td>BUS 200 International Business</td>
<td>3</td>
</tr>
<tr>
<td>Minimum Total</td>
<td>30</td>
</tr>
</tbody>
</table>

1BUS 179 Keyboarding – This course should be taken the first semester by the student with no formal training in correct keyboarding techniques. A student with a typing speed of at least 20-25 wpm should enroll in BUS 181C.

2BUS 181C Office Procedures I–Document Formatting – Designed for the student who has correct typing techniques, types at least 25-35 wpm, and has basic word processing skills but lacks formal training in formatting business documents. Student must obtain a grade of C- or better to advance.

3BUS 180C is a prerequisite for BUS 182C Office Procedures II–Document Production and BUS 281C Office Procedures III–Desktop Publishing, voice transcription courses, and advanced word processing courses. Attempt to enroll in this class your first semester.

4BUS 182C Office Procedures II–Document Production – Designed for the student with some formal training in document formatting, types 40 wpm or higher, and has a knowledge of Microsoft Word. Student must obtain a grade of C- or better to advance.

5Student must obtain a grade of C- or better to advance.
MEDICAL CLERK CERTIFICATE

This program is designed to provide training and practice in medical office assistant skills and medical transcription. Proficiency and speed in the performance of these skills will be measured.

CAREER PROGRAM REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1BUS 179 Keyboarding (See note below for placement)</td>
<td>1</td>
</tr>
<tr>
<td>2BUS 181C Office Procedures I–Document Formatting (See note below for placement)</td>
<td>3</td>
</tr>
<tr>
<td>3BUS 180C Introduction to Word Processing Part I</td>
<td>4</td>
</tr>
<tr>
<td>4BUS 182C Office Procedures II–Document Production</td>
<td>2</td>
</tr>
<tr>
<td>5BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 100 Introduction to Personal Computers</td>
<td>1</td>
</tr>
<tr>
<td>CIS 101 Introduction to Electronic Spreadsheets</td>
<td>1</td>
</tr>
<tr>
<td>CIS 119PP Introduction to Presentation Graphics</td>
<td>1</td>
</tr>
<tr>
<td>CIS 153 Introduction to Database Management</td>
<td>1</td>
</tr>
<tr>
<td>BUS 185B Electronic Calculator</td>
<td>2</td>
</tr>
<tr>
<td>AH 101 Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td>AH 104 Medical Insurance Billing</td>
<td>2</td>
</tr>
<tr>
<td>BUS 187A Electronic Records Management</td>
<td>2</td>
</tr>
<tr>
<td>BUS 188D Voice Transcription-Medical – Part I</td>
<td>2</td>
</tr>
<tr>
<td>BUS 188E Voice Transcription-Medical – Part II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Minimum Total</td>
</tr>
</tbody>
</table>

SUGGESTED ELECTIVES

(Dependent on individual student to meet 30 cr. hr. minimum.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 194 Business English Essentials</td>
<td>1</td>
</tr>
<tr>
<td>BUS 280C Word Processing Part II</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 International Business</td>
<td>3</td>
</tr>
<tr>
<td>CIS 120A Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Minimum Total</td>
</tr>
</tbody>
</table>

1BUS 179 Keyboarding – This course should be taken the first semester by the student with no formal training in correct keyboarding techniques. A student with a typing speed of at least 20-25 wpm should enroll in BUS 181C.

2BUS 181C Office Procedures I–Document Formatting – Designed for the student who has correct typing techniques, types at least 25-35 wpm, and has basic word processing skills but lacks formal training in formatting business documents. Student must obtain a grade of C- or better to advance.

3BUS 180C is a prerequisite for BUS 182C Office Procedures II–Document Production and BUS 281C Office Procedures III–Desktop Publishing, voice transcription courses, and advanced word processing courses. Attempt to enroll in this class your first semester.

4BUS 182C Office Procedures II–Document Production – Designed for the student with some formal training in document formatting, types 40 wpm or higher, and has a knowledge of Microsoft Word. Student must obtain a grade of C- or better to advance.

5Student must obtain a grade of C- or better to advance.
OSE PROFESSIONAL DEVELOPMENT CREDITS

The following programs have been designed to help students update their current skills. Each program includes two or more courses, each one packaged differently to give students options. Students will be awarded a “Statement of Proficiency Award” upon completion of any program. In addition, a notation will be made on the student’s official transcript. Once a student has completed one of the programs, he/she may apply the credits toward a 30-credit hour certificate or a degree. Students must apply for an audit in the Records Office.

Courses must be taken in this sequence unless otherwise noted and all prerequisite courses must be completed. Students will have 18 months to complete courses to receive the award. All courses must be completed in the order shown below. No waivers or transfer classes are accepted.

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMINISTRATIVE VOICE TRANSCRIPTION</td>
<td></td>
</tr>
<tr>
<td>BUS 194 Business English Essentials</td>
<td>1</td>
</tr>
<tr>
<td>BUS 180C Introduction to Word Processing - Part I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 188A1 Voice Transcription, Administrative</td>
<td>3</td>
</tr>
<tr>
<td>(See Course Schedule for any prerequisites.)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
</tr>
<tr>
<td>LEGAL VOICE TRANSCRIPTION</td>
<td></td>
</tr>
<tr>
<td>BUS 194 Business English Essentials</td>
<td>1</td>
</tr>
<tr>
<td>BUS 180C Introduction to Word Processing - Part I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 188B Voice Transcription, Legal</td>
<td>3</td>
</tr>
<tr>
<td>BUS 123 Business Law (may be taken before or after sequence)</td>
<td>3</td>
</tr>
<tr>
<td>(See Course Schedule for any prerequisites.)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
</tr>
<tr>
<td>MEDICAL VOICE TRANSCRIPTION</td>
<td></td>
</tr>
<tr>
<td>AH 101 Medical Terminology</td>
<td>3</td>
</tr>
<tr>
<td>BUS 180C Introduction to Word Processing - Part I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 188D Medical Voice Transcription, Part I</td>
<td>2</td>
</tr>
<tr>
<td>BUS 188E Medical Voice Transcription, Part II</td>
<td>2</td>
</tr>
<tr>
<td>(See Course Schedule for any prerequisites.)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
</tr>
<tr>
<td>OFFICE SKILL BUILDING</td>
<td></td>
</tr>
<tr>
<td>BUS 194 Business English Essentials</td>
<td>1</td>
</tr>
<tr>
<td>BUS 180C Introduction to Word Processing - Part I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 182C Office Procedures II - Document Production</td>
<td>2</td>
</tr>
<tr>
<td>(See Course Schedule for any prerequisites.)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
</tr>
<tr>
<td>WORD PROCESSING</td>
<td></td>
</tr>
<tr>
<td>BUS 180C Introduction to Word Processing - Part I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 280C Word Processing Part II</td>
<td>3</td>
</tr>
<tr>
<td>(See Course Schedule for any prerequisites.)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
</tr>
</tbody>
</table>
**EDUCATION PROGRAMS (Degrees and Certificates)**

**EARLY CHILDHOOD EDUCATION**

**MICHIGAN SCHOOL-AGE CREDENTIAL – A.A.S.**

Muskegon Community College and the State of Michigan currently offer a certificate program preparing paraprofessional workers to work in various grades/classrooms, latchkey programs, and child care centers. It is an opportunity for students to gain professional recognition for demonstrating competence in their profession. The Education Department is pleased to announce that students who complete two years of instruction can now receive the Associate in Applied Science Degree (A.A.S.). Students desiring to transfer to a four-year institution should consult with a counselor. This curriculum is not designed as a transfer program.

**GENERAL EDUCATION REQUIREMENTS (20-22 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR.HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math</td>
<td></td>
</tr>
<tr>
<td>MATH 105 Math for Elementary Teachers</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td></td>
</tr>
<tr>
<td>COM 101 Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 120A Introduction to Computer Information Systems</td>
<td></td>
</tr>
<tr>
<td>CIS 110 Computer Concepts</td>
<td>3</td>
</tr>
<tr>
<td>Select one course from the following: GEOG 102C Cultural Geography, PHIL 205 Business Ethics, PSCI 111 Introduction to American Government, PSCI 211 Comparative Governments, PSYC 201 General Psychology, or PSYC 102 Applied Psychology</td>
<td>3-4</td>
</tr>
<tr>
<td>PEA/DNC Physical Education and/or Dance (Required: One credit hour from: PEA 101A, PEA 103, PEA 104A, PEA 118 or PEA 201 and one PEA/DNC credit hour of choice)</td>
<td>2</td>
</tr>
</tbody>
</table>

*CAREER PROGRAM REQUIREMENTS (31-32 CR. HRS.)*

<table>
<thead>
<tr>
<th>Course</th>
<th>CR.HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 101 Introduction to Education</td>
<td>2</td>
</tr>
<tr>
<td>ED 118 Creative Curriculum for Children</td>
<td>3</td>
</tr>
<tr>
<td>ED 202 Teaching of Reading in the Elementary School</td>
<td>3</td>
</tr>
<tr>
<td>ED 207 Principles of Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 106 Introduction to Outdoor Education OR</td>
<td></td>
</tr>
<tr>
<td>ED 219 Science in the Elementary Classroom</td>
<td>2-3</td>
</tr>
<tr>
<td>ED 211 Behavior Management OR</td>
<td></td>
</tr>
<tr>
<td>ED 221 Teaching Students with Learning and Behavior Problems</td>
<td>3</td>
</tr>
<tr>
<td>ED 230 Children’s Literature</td>
<td>3</td>
</tr>
<tr>
<td>ED 225 Child Development OR</td>
<td></td>
</tr>
<tr>
<td>ED 250 Human Growth and Learning</td>
<td>3</td>
</tr>
<tr>
<td>ED 210 Child Care and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ED 290 CI Cooperative Internship</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 202 Educational Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

*Total Fieldwork Hours: 480*
**SUGGESTED ELECTIVES (Minimum 8-9 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 103 Constructive Play for the Developing Child</td>
<td>1</td>
</tr>
<tr>
<td>ED 108 Creativity in the Classroom</td>
<td>2</td>
</tr>
<tr>
<td>ED 109 The Parent-Child Connection</td>
<td>3</td>
</tr>
<tr>
<td>ED 211 Behavior Management</td>
<td>3</td>
</tr>
<tr>
<td>ED 216 Educating the Exceptional Child and Young Adult</td>
<td>3</td>
</tr>
<tr>
<td>ED 217 Creative Dramatics</td>
<td>1</td>
</tr>
<tr>
<td>ED 221 Teaching Students with Learning and Behavior Problems</td>
<td>3</td>
</tr>
<tr>
<td>ED 224 Comparative Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 251 Health Needs of the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>ART 211 Art Education Workshop</td>
<td>3</td>
</tr>
<tr>
<td>CSS 100 College Success Seminar</td>
<td>2</td>
</tr>
<tr>
<td>MATH 050 Intermediate Algebra</td>
<td>4</td>
</tr>
<tr>
<td>MU 192 Music for the Classroom Teacher</td>
<td>4</td>
</tr>
<tr>
<td>SOC 101 Principles of Sociology</td>
<td>3</td>
</tr>
<tr>
<td>TH 108 Theater for Children</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62</strong></td>
</tr>
</tbody>
</table>

**CHILD DEVELOPMENT ASSOCIATE - A.A.S.**

Muskegon Community College currently offers a certificate program in Child Development. The purpose of the program is to enhance the quality of child care by defining, evaluating, and recognizing the competence of child care providers. The C.D.A. student, after successfully completing the program may apply to The Council for Professional Recognition in Washington, D.C. for assessment of the competency standards and earn a CDA Credential.

The Education Department is pleased to announce that students who complete two years of instruction can now receive the Associate in Applied Science Degree (A.A.S.). This level of graduate can function as lead teacher for 3-5 year old children in a center-based preschool.

Students desiring to transfer to a four-year institution should consult with a counselor. This curriculum is not designed as a transfer program.

**GENERAL EDUCATION REQUIREMENTS (20-22 CR. HRS.) CR.HRS.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math OR MATH 105 Math for Elementary Teachers</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations OR COM 101 Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>CIS 120A Introduction to Computer Information Systems OR CIS 110 Computer Concepts</td>
<td>3</td>
</tr>
<tr>
<td>Select one course from the following: GEOG 102C Cultural Geography, PHIL 205 Business Ethics, PSCI 111 Introduction to American Government, PSCI 211 Comparative Governments, PSYC 201 General Psychology, or PSYC 102 Applied Psychology</td>
<td>3-4</td>
</tr>
</tbody>
</table>
PEA/DNC Physical Education and/or Dance (Required: One credit hour from: PEA 101A, PEA 103, PEA 104A, PEA 118 or PEA 201 and one PEA/DNC credit hour of choice) ............................................................... 2

*CAREER PROGRAM REQUIREMENTS (26 CR. HRS.)
ED 111 Introduction to the Education of Young Children ................. 3
ED 120 Early Childhood Education ................................................... 3
ED 211 Behavior Management ............................................................. 3
ED 214 Infants and Toddlers ................................................................. 3
ED 220A Early Childhood Assessment ................................................. 2
ED 230 Children's Literature ............................................................... 3
ED 225 Child Development OR
   ED 250 Human Growth and Learning ............................................. 3
ED 210 Child Care and Guidance ...................................................... 3
ED 290 CI Cooperative Internship ..................................................... 3

*Total Fieldwork Hours: 480

SUGGESTED ELECTIVES (Minimum 14 CR. HRS.)
ED 103 Constructive Play for the Developing Child ....................... 1
ED 108 Creativity in the Classroom .................................................. 2
ED 109 The Parent-Child Connection ................................................. 3
ED 117 The Whole Child ................................................................. 3
ED 118 Creative Curriculum for Children ......................................... 3
ED 200 Literacy - Birth to Five Years ............................................... 3
ED 202 Teaching of Reading in the Elementary School .................. 3
ED 216 Educating the Exceptional Child and Young Adult .............. 3
ED 217 Creative Dramatics .............................................................. 1
ED 219 Science in the Elementary Classroom ................................. 3
ED 107 Child Care: Operating a Successful Business OR
   ED 223 Child Care Center Administration .................................. 3
ED 224 Comparative Education ....................................................... 3
ED 251 Health Needs of the Young Child ......................................... 3
ART 211 Art Education Workshop .................................................. 3
CSS 100 College Success Seminar ................................................. 2
MATH 050 Intermediate Algebra ..................................................... 4
MU 192 Music for the Classroom Teacher ...................................... 4
PSYC 202 Educational Psychology ............................................... 3
SOC 101 Principles of Sociology ................................................... 3
TH 108 Theater for Children ......................................................... 3

Total 62
**EARLY CHILDHOOD EDUCATION**  
**INSTRUCTIONAL ASSISTANT, SPECIAL EDUCATION - A.A.S.**

**GENERAL EDUCATION REQUIREMENTS (20-22 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR.HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 102 Advanced Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>BUS 126 Business Math OR</td>
<td></td>
</tr>
<tr>
<td>MATH 105 Math for Elementary Teachers</td>
<td>3-4</td>
</tr>
<tr>
<td>BUS 127 Human Relations OR</td>
<td></td>
</tr>
<tr>
<td>COM 101 Oral Communications</td>
<td></td>
</tr>
<tr>
<td>CIS 120A Introduction to Computer Information Systems OR</td>
<td>3</td>
</tr>
<tr>
<td>CIS 110 Computer Concepts</td>
<td></td>
</tr>
<tr>
<td>Select one course from the following: GEOG 102C Cultural Geography,</td>
<td>3-4</td>
</tr>
<tr>
<td>PHIL 205 Business Ethics, PSCI 111 Introduction to American Government,</td>
<td></td>
</tr>
<tr>
<td>PSCI 211 Comparative Governments, PSYC 201 General Psychology, or</td>
<td></td>
</tr>
<tr>
<td>PSYC 102 Applied Psychology</td>
<td></td>
</tr>
<tr>
<td>PEA/DNC Physical Education and/or Dance (Required: One credit hour</td>
<td></td>
</tr>
<tr>
<td>from: PEA 101A, PEA 103, PEA 104A, PEA 118 or PEA 201 and one</td>
<td>2</td>
</tr>
<tr>
<td>PEA/DNC credit hour of choice)</td>
<td></td>
</tr>
</tbody>
</table>

**CAREER PROGRAM REQUIREMENTS (26 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR.HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 101 Introduction TO Education</td>
<td>2</td>
</tr>
<tr>
<td>ED 106 Introduction to Outdoor Education OR</td>
<td></td>
</tr>
<tr>
<td>ED 219 Science in the Elementary Classroom</td>
<td>2-3</td>
</tr>
<tr>
<td>ED 118 Creative Curriculum for Children</td>
<td></td>
</tr>
<tr>
<td>ED 202 Teaching of Reading in the Elementary School</td>
<td>3</td>
</tr>
<tr>
<td>ED 207 Principles of Elementary Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 211 Behavior Management OR</td>
<td></td>
</tr>
<tr>
<td>ED 221 Teaching Students with Learning and Behavioral Problems</td>
<td>3</td>
</tr>
<tr>
<td>ED 216 Educating the Exceptional Child and Young Adult</td>
<td>3</td>
</tr>
<tr>
<td>ED 222 Educating the Deaf</td>
<td>3</td>
</tr>
<tr>
<td>ED 225 Child Development OR</td>
<td></td>
</tr>
<tr>
<td>ED 250 Human Growth and Learning</td>
<td>3</td>
</tr>
<tr>
<td>ED 230 Children’s Literature</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 202 Educational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>ED 210 Child Care and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ED 290 CI Cooperative Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

*Total Fieldwork Hours: 480*
SUGGESTED ELECTIVES (Minimum 2-5 CR. HRS.)
ED 103 Constructive Play for the Developing Child ........................................ 1
ED 108 Creativity in the Classroom ............................................................... 2
ED 109 The Parent-Child Connection ............................................................. 3
ED 217 Creative Dramatics ............................................................................ 1
ED 219 Science in the Elementary Classroom ................................................ 3
ED 220A Early Childhood Assessment ........................................................... 3
ED 224 Comparative Education ..................................................................... 3
ED 226 Interdisciplinary Approaches to Early Interventions ........................... 3
ED 251 Health Needs of the Young Child ..................................................... 3
ART 211 Art Education Workshop ................................................................. 3
CSS 100 College Success Seminar ............................................................... 2
**HE 100A Community First Aid................................................................. 2
30 hours minimum working with CIMo, CIS, SXI, AI
MATH 050 Intermediate Algebra ................................................................... 4
MU 192 Music for the Classroom Teacher ..................................................... 4
SOC 101 Principles of Sociology .................................................................... 3
TH 108 Theater for Children ......................................................................... 3
Total 62

**A valid First Aid and CPR card must be current at the time of graduation for all certificate programs. Approved prior experience may be counted for some fieldwork hours. All courses earn college credit.

An individualized Educational Planning Committee (IEPC) programs are:
- Moderate cognitive impairments (CIMo) -- 88 hours
- Severe cognitive impairments (CIS) -- 88 hours
- Severe multiple impairments (SXI) -- 88 hours
- Autistic Impairment (AI) -- 88 hours

The CIS and SXI programs operate year-round, while CIMo and AI are on a regular year calendar.

PROFESSIONAL EDUCATION CERTIFICATES
The national Child Development Associate (C.D.A.) and Muskegon Community College’s certificates provide competency-based professional preparation for individuals interested in becoming preschool teachers and paraprofessionals. The national C.D.A. certificates are recognized throughout the country. The preschool center-based program is accepted as alternate teacher certification in teaching 3-5 year old children in non-public school settings. The M.C.C., MI School Age, and Instructional Assistant-Special Education certificates prepare paraprofessional workers competent to work in various grades/classrooms. In an age when single-parent homes are increasing, or where both parents of an increasing number of children are working outside the home, placing children in an enriched and stimulating learning environment with well-trained workers is critical.
Past work experience and former academic coursework may be considered when programs are planned. More than one certificate may be obtained through individually designed programs. A certificate may be obtained as entry into the workforce, or the student may continue with the Associate in Science and Arts Degree or Associate in Applied Science Degree.

Please contact the Education Department office (231.777.0277) for more information concerning these certificate programs, and the Early Childhood Education sequence leading to the A.S.A degree or the A.A.S. degree.

Entry into any certificate program includes:
- Completion of an MCC application for admission
- Completion of a professional certificate program application
- MCC assessments in English, reading, and mathematics
- Interview with the Education Coordinator

In order to earn an Education Certificate, a student must maintain at least a “C” (2.0) grade in every course and have a 2.5 cumulative G.P.A. prior to enrolling for an independent study course.

NOTE: 15 fieldwork hours for every 1 credit hour of course work is required for all students. To avoid updating coursework, all courses in a certificate must be completed within five years.

**CHILD DEVELOPMENT ASSOCIATE CERTIFICATE (CDA)**

**CR.HRS.**

(Center-Based Preschool)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR.HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 111 Introduction to the Education of Young Children</td>
<td>3</td>
</tr>
<tr>
<td>ED 120 Early Childhood Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 211 Behavior Management</td>
<td>3</td>
</tr>
<tr>
<td>ED 214 Infants and Toddlers</td>
<td>3</td>
</tr>
<tr>
<td>ED 220A Early Childhood Assessment</td>
<td>2</td>
</tr>
<tr>
<td>ED 230 Children’s Literature</td>
<td>3</td>
</tr>
<tr>
<td>ED 225 Child Development OR</td>
<td></td>
</tr>
<tr>
<td>ED 250 Human Growth and Learning</td>
<td>3</td>
</tr>
<tr>
<td>ED 210 Child Care and Guidance</td>
<td>3</td>
</tr>
<tr>
<td>ED 290CI Cooperative Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 26**

Those pursuing a director’s position should also take Administrative Electives:

<table>
<thead>
<tr>
<th>Course</th>
<th>CR.HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 109 The Parent-Child Connection</td>
<td>3</td>
</tr>
<tr>
<td>ED 118 Creative Curriculum for Children</td>
<td>3</td>
</tr>
<tr>
<td>ED 107 Child Care: Operating a Successful Business OR</td>
<td>3</td>
</tr>
<tr>
<td>ED 223 Child Care Center Administration</td>
<td>3</td>
</tr>
<tr>
<td>ED 251 Health Needs of the Young Child</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 12**

Total Fieldwork Hours: 480

Students are required to successfully complete HE 100A Community First Aid or present a valid CPR and First Aid card.
### FAMILY DAY CARE CERTIFICATE (FDC)  
**CR. HRS.**  
ED 111 Introduction to the Education of Young Children ............... 3  
ED 120 Early Childhood Education ....................................................... 3  
ED 211 Behavior Management ................................................................. 3  
ED 214 Infants and Toddlers ................................................................. 3  
ED 107 Child Care: Operating a Successful Business OR  
   ED 223 Child Care Center Administration ........................................... 3  
ED 220A Early Childhood Assessment .................................................... 2  
ED 230 Children’s Literature ................................................................. 3  
ED 225 Child Development OR  
   ED 250 Human Growth and Learning .................................................. 3  
ED 210 Child Care and Guidance ............................................................. 3  
ED 290CI Cooperative Internship ............................................................. 3  

**Total 29**  

Total Fieldwork Hours: 480  
Students are required to successfully complete HE 100A Community First Aid or present a valid CPR and First Aid card.

### INFANT – TODDLER CERTIFICATE (ITC) (0-36 MONTHS)  
**CR. HRS.**  
ED 111 Introduction to Education of Young Children ....................... 3  
ED 120 Early Childhood Education ....................................................... 3  
ED 214 Infants and Toddlers ................................................................. 3  
ED 107 Child Care: Operating a Successful Business OR  
   ED 223 Child Care Center Administration ........................................... 3  
ED 220A Early Childhood Assessment .................................................... 2  
ED 230 Children’s Literature ................................................................. 3  
ED 225 Child Development OR  
   ED 250 Human Growth and Learning .................................................. 3  
ED 226 Interdisciplinary Approaches to Early Intervention ................. 3  
ED 210 Child Care and Guidance ............................................................. 3  
ED 290CI Cooperative Internship ............................................................. 3  

**Total 29**  

Total Fieldwork Hours: 480  
Students are required to successfully complete HE 100A Community First Aid or present a valid CPR and First Aid card.
**A valid First Aid and CPR card must be current at the time of graduation for all certificate programs. Approved prior experience may be counted for some fieldwork hours. All courses earn college credit.**
An individualized Educational Planning Committee (IEPC) programs are:

- Moderate cognitive impairments (CIMo) -- 88 hours
- Severe cognitive impairments (CIS) -- 88 hours
- Severe multiple impairments (SXI) -- 88 hours
- Autistic Impairment (AI) -- 88 hours

The CIS and SXI programs operate year-round, while CIMo and AI are on a regular year calendar.

The Instructional Assistant-Special Education Certificate is State of Michigan approved. Past work experience and former academic coursework may be considered when programs are planned. More than one certificate may be obtained through individually designed programs. A certificate may be obtained as entry into the workforce, or the student may continue with the Associate in Science and Arts or Associate in Applied Science degrees.
INDUSTRIAL TECHNOLOGY PROGRAMS
(Degrees and Certificates)

STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST. Students should be advised that it could be dangerous to wear contact lenses in any area where fumes from chemicals, solvents, gases, and areas where electrical flash may be present. You should plan to wear prescription eyeglasses if you take classes where these hazards exist.

AUTOMOTIVE TECHNOLOGY - A.A.S. (Two-Year Program)

This curriculum is designed to educate and train personnel to fill the mechanical, technical, and supervisory positions in the automotive industry. Successful completion of the program leads to the degree of Associate in Applied Science. (Students may elect only those courses required to develop a particular skill without enrolling in the entire program of study that leads to a degree.) Students who wish to complete a program in two years are advised to use a sequence of courses recommended by their counselor or by the instructor. If a student wishes to attend college on less than a full-time basis, the program may be extended beyond two years.

GENERAL EDUCATION REQUIREMENTS (20 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 &amp; 102 Business and Technical Communications</td>
<td>6</td>
</tr>
<tr>
<td>TMAT 101, 102, 201 Technical Math (choose two)</td>
<td>6</td>
</tr>
<tr>
<td>AMT 129 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201</td>
<td>1</td>
</tr>
<tr>
<td>HE 110 Industrial Safety and Workplace Training</td>
<td>1</td>
</tr>
</tbody>
</table>

AUTOMOTIVE TECHNOLOGY REQUIREMENTS (30 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT 120 Introduction to Electrical Systems I</td>
<td>3</td>
</tr>
<tr>
<td>AT 121 Electrical Systems II</td>
<td>3</td>
</tr>
<tr>
<td>AT 122 Fuel Systems and Emission Controls</td>
<td>3</td>
</tr>
<tr>
<td>AT 123 Engine Tune-Up (Engine Performance)</td>
<td>3</td>
</tr>
<tr>
<td>AT 114 Automotive Power Plants (Engine Rebuilding)</td>
<td>3</td>
</tr>
<tr>
<td>AT 210 Power Trains (Drivelines- Manual Drivetrains)</td>
<td>3</td>
</tr>
<tr>
<td>AT 211 Automatic Transmissions (FWD and RWD)</td>
<td>3</td>
</tr>
<tr>
<td>AT 212 Alignment and Suspension</td>
<td>3</td>
</tr>
<tr>
<td>AT 213 Brakes and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>AT 214 Service Management</td>
<td>3</td>
</tr>
</tbody>
</table>

NOTE: AT 120/AT 121 must be taken before AT 122/AT 123.

TECHNICAL-RELATED REQUIREMENTS (6 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>W 101 Basic Welding</td>
<td>3</td>
</tr>
<tr>
<td>MT 101A Basic Machining</td>
<td>3</td>
</tr>
</tbody>
</table>
ELECTIVES (Chosen to supplement the student’s major interest.) Electives must be chosen from the list of recommended electives or have departmental approval. (6 CR. HRS.)

- MET 101 Industrial Materials ................................................................. 3
- MET 201 Metallurgy. .............................................................................. 3
- MET 102 Basic Cast Metals .................................................................. 3
- HP 101 Hydraulics/Pneumatics .............................................................. 3
- CAD 150 Blueprint Reading .................................................................. 3
- CAD 100, 130, or 140 Drafting ............................................................... 3
- ELTC 101 Basic Electricity .................................................................... 3
- TECH 290CI Cooperative Internship .................................................... 3

Total 62

STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST.

AUTOMOTIVE TECHNOLOGY CERTIFICATE REQUIREMENTS

- TMAT 101 Technical Math ................................................................. 3
- AT 114 Automotive Power Plants (Engine Rebuilding) ....................... 3
- AT 120 Intro. to Electrical Systems I .................................................. 3
- AT 121 Electrical Systems II ............................................................... 3
- AT 122 Fuel Systems and Emission Controls ....................................... 3
- AT 123 Electrical Tune-Up ................................................................. 3
- AT 210 Power Trains (FWD & RWD Drivelines) ................................ 3
- AT 211 Automatic Transmissions ...................................................... 3
- AT 212 Alignment and Suspension .................................................... 3
- AT 213 Brakes and Air Conditioning .................................................. 3

Total 30

Note: AT 120/AT 121 must be taken before AT 122/AT 123.

BCOM 101 Business and Technical Communications is recommended.
BIOMEDICAL ELECTRONICS TECHNOLOGY - A.A.S.  
(Two-Year Program)

The biomedical electronics technician is a person knowledgeable in the theory of operation, the underlying physiological principles, and the safe clinical application of biomedical equipment. Responsibilities may include installation, calibration, inspection, preventive maintenance, and repair of general biomedical and related technical equipment. The technician might be involved in the operation of equipment and in equipment control, safety, and maintenance.

<table>
<thead>
<tr>
<th>GENERAL EDUCATION REQUIREMENTS (19 CR. HRS.)</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 &amp; 102 Business and Technical Communications</td>
<td>6</td>
</tr>
<tr>
<td>ELTR 111 Electronics Math</td>
<td>5</td>
</tr>
<tr>
<td>AMT 129 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201</td>
<td>1</td>
</tr>
<tr>
<td>HE 110 Industrial Safety and Workplace Training</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TECHNICAL RELATED REQUIREMENTS (45 CR. HRS.)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AH 101 Medical Technology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 105 Anatomy &amp; Physiology I, L&amp;L</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 106 Anatomy &amp; Physiology II, L&amp;L</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 101 Electronics-Basic</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 102A Active Devices &amp; Circuit Analysis</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 112 Digital Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 201A Communications (Principles &amp; Servicing)</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 202A Industrial Electronic Systems</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 205 Electronic Circuit Design</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 210 Introduction to Microprocessors</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 211A Microcomputer Interfacing</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 212 Medical Instrumentation &amp; Measurement</td>
<td>4</td>
</tr>
<tr>
<td>TECH 290CI Cooperative Internship Program</td>
<td>2</td>
</tr>
</tbody>
</table>

| ELECTIVES | 3-4 |

Total 64-65

STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST.
COMPUTER-AIDED DRAFTING AND DESIGN - A.A.S. (Two-Year Program)

Computer-Aided Design is a universal language used to communicate ideas of design and construction details through the use of lines, symbols and dimensions. Successful completion of the program leads to the Associate in Applied Science Degree. (Students may elect only those courses required to develop a particular skill without enrolling in the entire program of study that leads to a degree.)

Students who wish to complete a program in two years are advised to use a sequence of courses recommended by their counselor or by the instructor. If a student wishes to attend college on less than a full-time basis, the program may be extended beyond two years.

GENERAL EDUCATION REQUIREMENTS (20 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 &amp; 102 Business and Technical Communications                        6</td>
<td></td>
</tr>
<tr>
<td>TMAT 102, 201 Technical Math                             6</td>
<td></td>
</tr>
<tr>
<td>AMT 129 Introduction to Technology                             3</td>
<td></td>
</tr>
<tr>
<td>BUS 127 Human Relations                                   3</td>
<td></td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201                1</td>
<td></td>
</tr>
<tr>
<td>HE 110 Industrial Safety and Workplace Training               1</td>
<td></td>
</tr>
</tbody>
</table>

COMPUTER-AIDED DRAFTING & DESIGN REQUIREMENTS (24 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD 110 Introduction to Computer-Aided Drafting (2D)                     3</td>
<td></td>
</tr>
<tr>
<td>CAD 120 Descriptive Geometry                                                   3</td>
<td></td>
</tr>
<tr>
<td>CAD 130 Drafting Standards and Conventions I                                 3</td>
<td></td>
</tr>
<tr>
<td>CAD 140 Drafting Standards and Conventions II                                 3</td>
<td></td>
</tr>
<tr>
<td>CAD 210 Parametric Design I; Part Modeling                                     3</td>
<td></td>
</tr>
<tr>
<td>CAD 220 Parametric Design II; Assemblies                                       3</td>
<td></td>
</tr>
<tr>
<td>CAD 230 Tool Design                                                            3</td>
<td></td>
</tr>
<tr>
<td>CAD 240 Team Design Projects                                                   3</td>
<td></td>
</tr>
</tbody>
</table>

Students with no drafting experience will be required to take CAD 100 Introduction to Drafting.

TECHNICAL-RELATED REQUIREMENTS (12 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 201 Metallurgy                    3</td>
<td></td>
</tr>
<tr>
<td>MT 205 NC/CNC (Numerical Control/Computer Numerical Control)             3</td>
<td></td>
</tr>
<tr>
<td>MT 101A Basic Machining              3</td>
<td></td>
</tr>
<tr>
<td>W 101 Basic Welding                 3</td>
<td></td>
</tr>
</tbody>
</table>

Continued on next page.
ELECTIVES (chosen to supplement the student’s major interest.) Electives must be chosen from the list of recommended electives or have departmental approval. (6 CR. HRS. MINIMUM)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 179</td>
<td>Keyboarding (or demonstrate proficiency)</td>
<td>1</td>
</tr>
<tr>
<td>COM 101</td>
<td>Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>CAD 100</td>
<td>Introduction to Drafting</td>
<td>3</td>
</tr>
<tr>
<td>CAD 150</td>
<td>Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>CAD 151</td>
<td>Geometric Dimensioning &amp; Tolerancing</td>
<td>3</td>
</tr>
<tr>
<td>CAD 152</td>
<td>Residential Architecture</td>
<td>3</td>
</tr>
<tr>
<td>CAD 153</td>
<td>Commercial Architecture</td>
<td>3</td>
</tr>
<tr>
<td>CAD 250</td>
<td>Introduction to Solidworks 3D</td>
<td>3</td>
</tr>
<tr>
<td>CAD 251</td>
<td>Die Design</td>
<td>3</td>
</tr>
<tr>
<td>ELTC 101</td>
<td>Basic Electricity</td>
<td>3</td>
</tr>
<tr>
<td>HP 101</td>
<td>Hydraulics/Pneumatics</td>
<td>3</td>
</tr>
<tr>
<td>MET 101</td>
<td>Industrial Materials</td>
<td>3</td>
</tr>
<tr>
<td>MET 102</td>
<td>Basic Cast Metals</td>
<td>3</td>
</tr>
<tr>
<td>QC 101</td>
<td>Basic Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>TECH 290C1</td>
<td>Cooperative Internship Program</td>
<td>3</td>
</tr>
<tr>
<td>TMAT 202</td>
<td>Technical Math</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>62</strong></td>
</tr>
</tbody>
</table>

STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST.

COMPUTER-AIDED DRAFTING & DESIGN CERTIFICATE REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMAT 102, 201</td>
<td>Technical Math</td>
<td>6</td>
</tr>
<tr>
<td>CAD 110</td>
<td>Introduction to Computer-Aided Drafting (2D)</td>
<td>3</td>
</tr>
<tr>
<td>CAD 120</td>
<td>Descriptive Geometry</td>
<td>3</td>
</tr>
<tr>
<td>CAD 130</td>
<td>Drafting Standards and Conventions I</td>
<td>3</td>
</tr>
<tr>
<td>CAD 140</td>
<td>Drafting Standards and Conventions II</td>
<td>3</td>
</tr>
<tr>
<td>CAD 210</td>
<td>Parametric Design I; Part Modeling</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>

BCOM 101 Business and Technical Communications is recommended.
ELECTRONICS TECHNOLOGY - A.A.S. (Two-Year Program)

This curriculum is designed to prepare a student for employment as a technician in the industrial and customer service areas. Successful completion of the program leads to the Associate in Applied Science Degree. (Students may elect only those courses required to develop a particular skill without enrolling in the entire program of study that leads to a degree.) Students who wish to complete a program in two years are advised to use a sequence of courses recommended by their counselor or by the instructor. If a student wishes to attend college on less than a full-time basis, the program may be extended beyond two years.

GENERAL EDUCATION REQUIREMENTS (19 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 &amp; 102 Business and Technical Communications</td>
<td>6</td>
</tr>
<tr>
<td>ELTR 111 Electronics Mathematics</td>
<td>5</td>
</tr>
<tr>
<td>AMT 129 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201</td>
<td>1</td>
</tr>
<tr>
<td>HE 110 Industrial Safety and Workplace Training</td>
<td>1</td>
</tr>
</tbody>
</table>

ELECTRONICS TECHNOLOGY REQUIREMENTS (28 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELTR 101 Electronics-Basic</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 102A Active Devices &amp; Circuit Analysis</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 112 Digital Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 201A Communications (Principles and Servicing)</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 202A Industrial Electronic Systems</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 205 Electronic Circuit Design</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 210 Introduction to Microprocessors</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 211A Microcomputer Interfacing</td>
<td>3</td>
</tr>
</tbody>
</table>

TECHNICAL-RELATED REQUIREMENTS (3 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD 100 Introduction to Drafting</td>
<td>3</td>
</tr>
<tr>
<td>or CAD 130 Drafting Standards &amp; Conventions I</td>
<td></td>
</tr>
</tbody>
</table>

ELECTIVES (Chosen to supplement the student’s major interest.) Electives must be chosen from the list of recommended electives or have departmental approval. (12 CR. HRS. Minimum)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 101 Oral Communications</td>
<td>3</td>
</tr>
<tr>
<td>ELTC 150 Industrial Electricity</td>
<td>3</td>
</tr>
<tr>
<td>ELTC 160 Programmable Controllers</td>
<td>3</td>
</tr>
<tr>
<td>ELTR/CIS 109 Personal Computer Maintenance</td>
<td>2</td>
</tr>
<tr>
<td>ELTR 212 Medical Instrumentation &amp; Measurement</td>
<td>4</td>
</tr>
<tr>
<td>HP 101 Hydraulics/Pneumatics</td>
<td>3</td>
</tr>
<tr>
<td>BUS125 Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MET 101 Industrial Materials</td>
<td>3</td>
</tr>
<tr>
<td>TECH 290CI Cooperative Internship Program</td>
<td>3-6</td>
</tr>
</tbody>
</table>

Total 62-66
STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST.

**ELECTRONICS TECHNOLOGY CERTIFICATE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR.HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 111 Electronics Mathematics</td>
<td>5</td>
</tr>
<tr>
<td>ELTR 101 Electronics-Basic</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 102A Active Devices and Circuit Analysis</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 112 Digital Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 201A Communications (Principles &amp; Servicing)</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 202A Industrial Electronics Systems</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 205 Electronic Circuit Design</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 210 Introduction to Microprocessors</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 211A Microcomputer Interfacing</td>
<td>3</td>
</tr>
<tr>
<td>CAD 100 Introduction to Drafting</td>
<td></td>
</tr>
<tr>
<td>or CAD 130 Drafting Standards and Conventions I</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 39

**GRAPHIC DESIGN - A.A.S. (Two-Year Program)**

The Graphic Design curriculum is designed to prepare students for entry into the field of graphic design with a broad background and experience in the creation of a wide variety of media for advertising, displays, sign and computer graphics to fit clients’ needs. Though not fine artists, students need to be skilled in drawing and painting. Media creation and distribution is ever changing and so must be the knowledge and skills of the graphic designer. This program is not designed to transfer to a four-year institution. Any student wishing to transfer to a four-year college is urged to consult with an academic advisor. The certificate programs are intended to provide the student with foundation skills to gain immediate employment in the specialty, or continue in the AAS program.

**GENERAL EDUCATION REQUIREMENTS (20 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR.HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 &amp; 102 Business and Technical Communications</td>
<td>6</td>
</tr>
<tr>
<td>TMAT 101 &amp; TMAT 102 Technical Math</td>
<td>6</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>AMT 129 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118 OR PEA 201</td>
<td>1</td>
</tr>
<tr>
<td>HE 110 Industrial Safety and Workplace Training</td>
<td>1</td>
</tr>
</tbody>
</table>

**GRAPHIC DESIGN REQUIREMENTS (32 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR.HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRD 120 Introduction to Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>GRD 130 Drawing for Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>GRD 140 Introduction to Typography</td>
<td>3</td>
</tr>
<tr>
<td>GRD 160 History of Graphic Design</td>
<td>3</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>GR 160</td>
<td>Digital Imaging</td>
</tr>
<tr>
<td>CIS 187</td>
<td>Multimedia Digitizing</td>
</tr>
<tr>
<td>GR 110</td>
<td>Introduction to Graphic Reproduction</td>
</tr>
<tr>
<td>GR 220</td>
<td>Electronic Publishing</td>
</tr>
<tr>
<td>GR 270</td>
<td>Computer Imaging for the Printing Industry</td>
</tr>
<tr>
<td>GR 180DP</td>
<td>Digital Photography</td>
</tr>
<tr>
<td>GR 180PR</td>
<td>Photo Restoration</td>
</tr>
<tr>
<td>GRD290CI</td>
<td>Cooperative Internship</td>
</tr>
</tbody>
</table>

**TECHNOLOGY RELATED REQUIREMENTS (7 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 100</td>
<td>Introduction to Personal Computers (using Windows)</td>
<td>1</td>
</tr>
<tr>
<td>BUS 179</td>
<td>Keyboarding</td>
<td>1</td>
</tr>
<tr>
<td>GRD 107</td>
<td>Image Assembly</td>
<td>2</td>
</tr>
<tr>
<td>BUS 123</td>
<td>Business Law</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTIVES (3 CR. HRS.)** (Chosen to supplement the student’s major interest.) Electives must be chosen from the list of recommended electives or have departmental approval.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 287</td>
<td>Personal Computer Digital Video Editing</td>
<td>3</td>
</tr>
<tr>
<td>GR 180WF</td>
<td>Wide Format</td>
<td>1</td>
</tr>
<tr>
<td>CIS 119</td>
<td>Power Point</td>
<td>1</td>
</tr>
<tr>
<td>CIS 257</td>
<td>Designing Internet Applications</td>
<td>3</td>
</tr>
<tr>
<td>COM 212</td>
<td>Television Production</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 62**

**STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST.**

![Image of a person working on a laptop]
Graphic Design Certificate Programs

Display Advertising (33 CR. HRS.)
- GRD 120 Introduction to Graphic Design ...................................................... 3
- GRD 130 Drawing for Graphic Design ............................................................ 3
- GRD 140 Introduction to Typography ........................................................... 3
- GR 160 Digital Imaging .................................................................................. 3
- GR 270 Computer Imaging for the Printing Industry ...................................... 3
- GR 110 Introduction to Graphic Reproduction .............................................. 3
- CIS 100 Introduction to Personal Computers (using Windows) .................... 1
- GR 200 Black & White Photography ............................................................. 3
- GR 180DP Digital Photography ..................................................................... 1
- BUS 123 Business Law .................................................................................. 3
- GR 180VC Vinyl Cutting ................................................................................. 1
- GR 180PR Photo Restoration ......................................................................... 1
- GR 180WF Wide Format Printing ................................................................... 1
- BUS 179 Keyboarding ................................................................................... 1
- BUS 263 Advertising Dynamics ................................................................... 3

Printing Prepress (25 CR. HRS.)
- GRD 120 Introduction to Design ................................................................... 3
- GRD 130 Drawing for Design ......................................................................... 3
- GRD 140 Introduction to Typography ........................................................... 3
- GR 160 Digital Imaging .................................................................................. 3
- GR 220 Electronic Publishing ......................................................................... 3
- GR 110 Introduction to Graphic Reproduction .............................................. 3
- CIS 100 Introduction to Personal Computers (using Windows) .................... 1
- BUS 123 Business Law .................................................................................. 3
- GRD 107 Image Assembly .............................................................................. 2

Multimedia/Interactive (34 CR. HRS.)
- GRD 120 Introduction to Design ................................................................... 3
- GRD 130 Drawing for Design ......................................................................... 3
- GRD 140 Introduction to Typography ........................................................... 3
- GR 160 Digital Imaging .................................................................................. 3
- GR 270 Computer Imaging for the Printing Industry ...................................... 3
- CIS 100 Introduction to Personal Computers (using Windows) .................... 1
- CIS 280 Java Programming ............................................................................. 3
- CIS 119 Power Point ....................................................................................... 1
- BUS 123 Business Law .................................................................................. 3
- GRD 150 Multimedia Production .................................................................. 3
- GR 180DP Digital Photography ..................................................................... 1
- BUS 179 Keyboarding ................................................................................... 1
- CIS 287 Personal Computer Digital Video Editing .......................................... 3
- CIS 187 Digitizing for Multimedia .................................................................. 3
Web Design (25 CR. HRS.)
GRD 120 Introduction to Graphic Design ........................................... 3
GRD 167/CIS 167 Introduction to Internet Animation ......................... 1
GR 160 Digital Imaging ........................................................................ 3
CIS 120A Introduction to Computer Information Systems ................. 3
CIS 177 Introduction to HTML Editors .................................................... 1
CIS 193A Introduction to Operating Systems ............................................ 1
CIS 217 Introduction to Java Script Programming .................................. 1
CIS 220 E-Business .................................................................................. 3
CIS 253A Database Design and Implementation .................................. 3
CIS 257 Designing Internet Applications ............................................. 3
CIS 280 Java Programming ................................................................... 3

Video/Audio (29 CR. HRS.)
GRD 120 Introduction to Graphic Design ........................................... 3
GRD 130 Drawing for Graphic Design .................................................... 3
GRD 140 Introduction to Typography ..................................................... 3
CIS 100 Introduction to Personal Computers (using Windows) ......... 1
BUS 179 Keyboarding ........................................................................... 1
BUS 123 Business Law .......................................................................... 3
CIS 287 Personal Computer Digital Video Editing .......................... 3
CIS 187 Digitizing for Multimedia ....................................................... 3
COM 102 Mass Media ........................................................................... 3
COM 212 Television Production ........................................................... 3
COM 112 Audio Production ................................................................ 3

INDUSTRIAL TECHNOLOGY - A.A.S. (Two-Year Program)
This curriculum is designed to educate and train personnel to fill supervisory and technical positions related to industrial technology. Successful completion of the program leads to the degree of Associate in Applied Science. (Students may elect only those courses required to develop a particular skill without enrolling in the entire program of study that leads to a degree.) This degree is not designed for transfer.

GENERAL EDUCATION REQUIREMENTS (20 CR. HRS.) CR.HRS.
BCOM 101 & 102 Business and Technical Communications .......... 6
TMAT 102, 201 Technical Math ............................................................... 6
AMT 129 Introduction to Technology .................................................. 3
BUS 127 Human Relations .................................................................. 3
PEA 101A, PEA 103, PEA 104A, PEA 118 or PEA 201 ...................... 1
HE 110 Industrial Safety and Workplace Training ....................... 1

Continued on next page.
### TECHNICAL REQUIREMENTS (27 CR. HRS.)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 102</td>
<td>Basic Cast Metals</td>
<td>3</td>
</tr>
<tr>
<td>MET 201</td>
<td>Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MET 101</td>
<td>Industrial Materials</td>
<td>3</td>
</tr>
<tr>
<td>CAD 150</td>
<td>Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>ELTC 101</td>
<td>Basic Electricity</td>
<td>3</td>
</tr>
<tr>
<td>MT 101A</td>
<td>Basic Machining</td>
<td>3</td>
</tr>
<tr>
<td>W 101</td>
<td>Basic Welding</td>
<td>3</td>
</tr>
<tr>
<td>QC 101</td>
<td>Basic Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>QC 105</td>
<td>Quality &amp; Productivity Using SPC</td>
<td>3</td>
</tr>
</tbody>
</table>

### ELECTIVES (Chosen to supplement the student’s major interest.) Electives must be chosen from the list of recommended electives or have departmental approval. (16 CR HRS Minimum)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 125</td>
<td>Supervision</td>
<td>3</td>
</tr>
<tr>
<td>BUS 166</td>
<td>Quality Customer Service</td>
<td>3</td>
</tr>
<tr>
<td>CIS 157</td>
<td>Introduction to the Internet</td>
<td>1</td>
</tr>
<tr>
<td>CIS 160</td>
<td>Programming Small Computers in BASIC</td>
<td>3</td>
</tr>
<tr>
<td>CAD 130</td>
<td>Drafting Standards and Conventions I</td>
<td>3</td>
</tr>
<tr>
<td>CAD 110</td>
<td>Introduction to Computer-Aided Drafting (2D)</td>
<td>3</td>
</tr>
<tr>
<td>HP 101</td>
<td>Hydraulics/Pneumatic</td>
<td>3</td>
</tr>
<tr>
<td>MT 205</td>
<td>NC/CNC- Numerical Control/Computer Numerical Control</td>
<td>3</td>
</tr>
<tr>
<td>TECH 290CI</td>
<td>Cooperative Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 63**

**STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST.**

### INDUSTRIAL TECHNOLOGY CERTIFICATE REQUIREMENTS CR. HRS.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMAT 102</td>
<td>Technical Mathematics II</td>
<td>3</td>
</tr>
<tr>
<td>MET 102</td>
<td>Basic Cast Metals</td>
<td>3</td>
</tr>
<tr>
<td>MET 101</td>
<td>Industrial Materials</td>
<td>3</td>
</tr>
<tr>
<td>CAD 150</td>
<td>Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>ELTC 101</td>
<td>Electricity-Basic</td>
<td>3</td>
</tr>
<tr>
<td>MT 101A</td>
<td>Basic Machining</td>
<td>3</td>
</tr>
<tr>
<td>W 101</td>
<td>Basic Welding</td>
<td>3</td>
</tr>
<tr>
<td>QC 101</td>
<td>Basic Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>AMT 129</td>
<td>Introduction to Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 27**

BCOM 101 Business and Technical Communications is recommended.
MACHINING TECHNOLOGY - A.A.S. (Two-Year Program)

This curriculum is designed to prepare the student for that highly diversified area engaged in the production of machined objects required for the assembly of the products of modern industry. Successful completion of this program leads to the Associate in Applied Science Degree. (Students may elect only those courses required to develop a particular skill without enrolling in the entire program of study that leads to a degree.) Students who wish to complete a program in two years are advised to use a sequence of courses recommended by their counselor or by the instructor. If a student wishes to attend college on less than a full-time basis, the program may be extended beyond two years.

GENERAL EDUCATION REQUIREMENTS (20 CR HRS)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 &amp; 102</td>
<td>Business and Technical Communications ............</td>
<td>6</td>
</tr>
<tr>
<td>TMAT 101, 102, 201, 202</td>
<td>Technical Math (Choose two) .............</td>
<td>6</td>
</tr>
<tr>
<td>AMT 129</td>
<td>Introduction to Technology ................................</td>
<td>3</td>
</tr>
<tr>
<td>BUS 127</td>
<td>Human Relations .........................................</td>
<td>3</td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201</td>
<td>................</td>
<td>1</td>
</tr>
<tr>
<td>HE 110</td>
<td>Industrial Safety and Workplace Training ..........</td>
<td>1</td>
</tr>
</tbody>
</table>

MACHINING TECHNOLOGY REQUIREMENTS (20 CR HRS)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 101A</td>
<td>Basic Machining ...........................................</td>
<td>3</td>
</tr>
<tr>
<td>MT 102</td>
<td>Intermediate Machining ...................................</td>
<td>3</td>
</tr>
<tr>
<td>MT 103</td>
<td>Advanced Machining .......................................</td>
<td>3</td>
</tr>
<tr>
<td>MT 230</td>
<td>Basic Die Making ..........................................</td>
<td>3</td>
</tr>
<tr>
<td>MT 225</td>
<td>Mold Making ................................................</td>
<td>3</td>
</tr>
<tr>
<td>MT 206</td>
<td>2-D CAD/CAM Computer-Aided Design/Machining ...........</td>
<td>3</td>
</tr>
<tr>
<td>MT 216</td>
<td>3-D CAD/CAM Computer-Aided Design/Machining ...........</td>
<td>3</td>
</tr>
</tbody>
</table>

TECHNICAL-RELATED REQUIREMENTS (15 CR HRS)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 205</td>
<td>NC/CNC (Numerical Control/Computer Numerical Control)</td>
<td>3</td>
</tr>
<tr>
<td>CAD 100</td>
<td>Introduction to Drafting OR ..........................</td>
<td></td>
</tr>
<tr>
<td>CAD 130</td>
<td>Drafting Standards and Conventions I ..................</td>
<td>3</td>
</tr>
<tr>
<td>CAD 150</td>
<td>Blueprint Reading ........................................</td>
<td>3</td>
</tr>
<tr>
<td>W 101</td>
<td>Basic Welding ..............................................</td>
<td>3</td>
</tr>
<tr>
<td>CAD 110</td>
<td>Introduction to Computer-Aided Drafting (2D) .........</td>
<td>3</td>
</tr>
</tbody>
</table>

Continued on next page.
ELECTIVES (Chosen to supplement the student’s major interest.) Electives must be chosen from the list of recommended electives or have departmental approval. (6 CR. HRS. Minimum)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 101 Hydraulics/Pneumatics</td>
<td>3</td>
</tr>
<tr>
<td>MET 201 Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>QC 101 Basic Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>BUS 125 Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MET 102 Basic Cast Metals</td>
<td>3</td>
</tr>
<tr>
<td>MET 101 Industrial Materials</td>
<td>3</td>
</tr>
<tr>
<td>MT 240 Basic Machine Repair</td>
<td>3</td>
</tr>
<tr>
<td>MT 245 Advanced Machine Repair</td>
<td>3</td>
</tr>
<tr>
<td>TECH 290CI Cooperative Internship</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62</strong></td>
</tr>
</tbody>
</table>

STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST.

MACHINING TECHNOLOGY CERTIFICATE REQUIREMENTS  CR. HRS.

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMAT 102 Technical Math II</td>
<td>3</td>
</tr>
<tr>
<td>MT 101A Machining-Basic</td>
<td>3</td>
</tr>
<tr>
<td>MT 205 NC/CNC Numerical Control/Computer</td>
<td>3</td>
</tr>
<tr>
<td>MET 101 Industrial Materials</td>
<td>3</td>
</tr>
<tr>
<td>AMT 129 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>QC 101 Basic Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>MT 102 Intermediate Machining</td>
<td>3</td>
</tr>
<tr>
<td>MT 103 Advanced Machining</td>
<td>3</td>
</tr>
<tr>
<td>CAD 150 Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

MATERIALS TECHNOLOGY - A.A.S. (Two-Year Program)

Materials Technology is the study of new and modified materials emerging on the technology scene. The activities of the Materials Technologist are directed toward the understanding, testing, development, and applications of materials. These materials include metals, alloys, ceramics, semi-conductors, polymers, and composites. Materials Technology is basic to a wide range of industries, including automotive, electrical, and manufacturing, to name a few.

The mission of the Materials Technologist is to understand the underlying physical and chemical origins of the properties being evaluated. Covering all physical classes of materials, the program investigates the relationship between the structure and properties of materials and then applies the resulting knowledge to issues related to the design, processing, and performance of these materials.
### GENERALEDUCATION REQUIREMENTS (20 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 &amp; 102 Business and Technical Communications</td>
<td>6</td>
</tr>
<tr>
<td>TMAT 102 &amp; 201 Technical Math</td>
<td>6</td>
</tr>
<tr>
<td>AMT 129 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118 or PEA 201</td>
<td>1</td>
</tr>
<tr>
<td>HE 110 Industrial Safety and Workplace Training</td>
<td>1</td>
</tr>
</tbody>
</table>

### MATERIALS TECHNOLOGY REQUIREMENTS (21 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 101 Industrial Materials</td>
<td>3</td>
</tr>
<tr>
<td>MET 102 Basic Cast Metals</td>
<td>3</td>
</tr>
<tr>
<td>MET 201 Metallurgy</td>
<td>3</td>
</tr>
<tr>
<td>MET 202 Advanced Metals</td>
<td>3</td>
</tr>
<tr>
<td>MET 203 Materials Testing</td>
<td>3</td>
</tr>
<tr>
<td>MET 210 Pattern and Casting Design and Construction</td>
<td>3</td>
</tr>
<tr>
<td>MET 211 Gating and Risering</td>
<td>3</td>
</tr>
</tbody>
</table>

### TECHNICAL-RELATED REQUIREMENTS (14 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 101A Basic Machining</td>
<td>3</td>
</tr>
<tr>
<td>QC 101 Basic Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>CAD 150 Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 100 Fundamentals of Chemistry, L&amp;L</td>
<td>5</td>
</tr>
</tbody>
</table>

**ELECTIVES** (Chosen to supplement the students major interest.) Electives must be chosen from the list of recommended electives or have departmental approval. (9 CR. HRS. Minimum)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>W 101 Basic Welding</td>
<td>3</td>
</tr>
<tr>
<td>HP 101 Hydraulics/Pneumatics</td>
<td>3</td>
</tr>
<tr>
<td>ELTC 101 Electricity- Basic</td>
<td>3</td>
</tr>
<tr>
<td>BUS 125 Supervision</td>
<td>3</td>
</tr>
<tr>
<td>TECH 290C1 Cooperative Internship</td>
<td>3</td>
</tr>
<tr>
<td>MET 204 Plastics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total 64**

---

**PULP AND PAPER SCIENCE - A.A.S. (Two-Year Program)**

This program is designed to upgrade the knowledge base and skill levels of current and potential workers in the paper industry. It is a production-oriented program which includes a substantial concentration of MCC science and math courses, complemented with specific paper and engineering classes offered through Western Michigan University. Both a certificate and Associate in Applied Science degree are available.

*Continued on next page.*
### PROGRAMS

**GENERAL EDUCATION REQUIREMENTS (20 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 &amp; 102 Business and Technical Communications</td>
<td>6</td>
</tr>
<tr>
<td>TMAT 101 &amp; 102 Technical Math</td>
<td>6</td>
</tr>
<tr>
<td>AMT 129 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>PEA 101A Fitness, Wellness, and Nutrition</td>
<td>1</td>
</tr>
<tr>
<td>HE 110 Industrial Safety and Workplace Training</td>
<td>1</td>
</tr>
</tbody>
</table>

**TECHNICAL REQUIREMENTS (29 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 100 LEC Chemistry Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 100A Chemistry Fundamentals Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 101 LEC General and Inorganic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 101A General and Inorganic Chemistry Lab</td>
<td>1</td>
</tr>
<tr>
<td>PAPR 100 Introduction to Paper/Pulp Manufacturing (WMU)</td>
<td>4</td>
</tr>
<tr>
<td>CHEG 101 Introduction to Chemical Engineering (WMU)</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 203 Pulping/Bleaching (WMU)</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 204 Stock Prep/Papermaking (WMU)</td>
<td>4</td>
</tr>
<tr>
<td>QC 101 Basic Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>CSS 100 College Success Seminar</td>
<td>2</td>
</tr>
</tbody>
</table>

**ELECTIVES (Chosen to supplement the student’s major interest.)** Electives must be chosen from the list of recommended electives or have departmental approval. (11 CR. HRS. Minimum)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC 105 Quality and Productivity using SPC</td>
<td>3</td>
</tr>
<tr>
<td>BUS 125 Supervision</td>
<td>3</td>
</tr>
<tr>
<td>BUS 166 Quality Customer Service</td>
<td>3</td>
</tr>
<tr>
<td>BUS 200 International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 290 CI Cooperative Internship Program</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 205 Business Ethics</td>
<td>3</td>
</tr>
<tr>
<td>TMAT 201 Technical Math III</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 10H Ecology</td>
<td>1</td>
</tr>
<tr>
<td>PSCI 202 International Relations</td>
<td>3</td>
</tr>
<tr>
<td>PSCI 211 Comparative Government</td>
<td>3</td>
</tr>
</tbody>
</table>

*Minimum Total 62*
## Pulp and Paper Science Certificate Requirements  

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMAT 101 Technical Math I</td>
<td>3</td>
</tr>
<tr>
<td>TMAT 102 Technical Math II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 100 LEC Chemistry Fundamentals</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 100A Chemistry Fundamentals Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 101 LEC General and Inorganic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 101A General and Inorganic Chemistry Lab</td>
<td>1</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td></td>
</tr>
<tr>
<td>HE 110 Industrial Safety and Workplace Training</td>
<td>1</td>
</tr>
<tr>
<td>PAPR 203 Pulping/Bleaching (WMU)</td>
<td>4</td>
</tr>
<tr>
<td>PAPR 204 Stock Prep/Papermaking (WMU)</td>
<td>4</td>
</tr>
<tr>
<td>CSS 100 College Success Seminar</td>
<td>2</td>
</tr>
<tr>
<td>QC 101 Basic Quality Control</td>
<td></td>
</tr>
</tbody>
</table>

Minimum Total: 33

**STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST.**

## Welding Technology - A.A.S. (Two-Year Program)

Welding Technology is a diversified program of skills dealing with the fabrication of metal products from rolled, stamped, forged or cast shapes. The type of metal, position of weldments, and use of structural shapes will be handled in a manner similar to that used in industrial processing. Selection of the proper welding methods, materials and procedures required will provide training in solving realistic problems found in the welding field. Students who wish to complete a program in two years are advised to use a sequence of courses recommended by their counselor or by the instructor. If a student wishes to attend college on less than a full-time basis, the program may be extended beyond two years. Students may wish to complete only the certificate program in welding.

## General Education Requirements (20 CR HRS)  

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 &amp; 102 Business and Technical Communications</td>
<td>6</td>
</tr>
<tr>
<td>TMAT 101, 102, 201 Technical Math (Choose two courses)</td>
<td>6</td>
</tr>
<tr>
<td>AMT 129 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118 or PEA 201</td>
<td>1</td>
</tr>
<tr>
<td>HE 110 Industrial Safety and Workplace Training</td>
<td>1</td>
</tr>
</tbody>
</table>

Continued on next page.
WELDING TECHNOLOGY REQUIREMENTS (21 CR. HRS.)

W 101 Basic Welding ................................................................. 3
W 102 Welding - Advanced .................................................. 3
W 103 MIG/TIG Welding ...................................................... 3
W 201 Structural Welding .................................................... 3
W 202 Pipe Welding ............................................................... 3
W 203 Welding Maintenance ................................................ 3
W 204 Welding Supervision ................................................... 3

TECHNICAL-RELATED REQUIREMENTS (15 CR. HRS.)

MET 201 Metallurgy ............................................................... 3
CAD 100 Intro. to Drafting OR
CAD 130 Drafting Standards and Conventions I ................. 3
ELTC 101 Basic Electricity .................................................... 3
MT 101A Basic Machining .................................................... 3
CAD 150 Blueprint Reading .................................................. 3

ELECTIVES (Chosen to supplement the student’s major interest.) Electives must be chosen from the list of recommended electives or have departmental approval. (6 CR. HRS. Minimum)

QC 101 Basic Quality Control .............................................. 3
BUS 125 Supervision ............................................................. 3
BUS 101 Principles of Accounting I ................................... 4
MET 102 Basic Cast Metals .................................................. 3
BUS 161A Effective Selling .................................................. 3
TECH 290CI Cooperative Internship .................................... 3

Total 62-64

STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST. Students should be advised that it could be dangerous to wear contact lenses in any area where fumes from chemicals, solvents, gases, and areas where electrical flash may be present. You should plan to wear prescription eyeglasses if you take classes where these hazards exist.

WELDING TECHNOLOGY CERTIFICATE REQUIREMENTS

TMAT 101 Technical Math I ..................................................... 3
W 101 Basic Welding ............................................................. 3
W 102 Introduction to Advanced Welding ............................ 3
W 103 MIG/TIG Welding ...................................................... 3
W 201 Structural Welding .................................................... 3
CAD 150 Blueprint Reading .................................................. 3
ELTC 101 Electricity-Basic .................................................... 3
MT 101A Machining-Basic .................................................... 3

Total 24

BCOM 101 Business and Technical Communications is recommended.
WORLD CLASS MANUFACTURING/BUSINESS - A.A.S.
(Two-Year Program)

WCM is a concept of doing business that requires knowledge of manufacturing technology, employee involvement, global business practices and quality services. The WCM/B curriculum is intended to address these issues in an Associate Degree program. These concepts are not new to business and industry, but the emphasis and expectation for proficient skills are absolutely essential for job entry or advancement.

GENERAL EDUCATION REQUIREMENTS (20 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCOM 101 &amp; 102 Business and Technical Communications</td>
<td>6</td>
</tr>
<tr>
<td>TMAT 102 Technical Math II</td>
<td>3</td>
</tr>
<tr>
<td>AMT 129 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201</td>
<td>1</td>
</tr>
<tr>
<td>HE 110 Industrial Safety and Workplace Training</td>
<td>1</td>
</tr>
<tr>
<td>ECON 101 Principles of Economics</td>
<td>4</td>
</tr>
</tbody>
</table>

CORE REQUIREMENTS (18 CR. HRS.)

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 121 Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUS 122 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 166 Customer Service</td>
<td>3</td>
</tr>
<tr>
<td>QC 105 Quality &amp; Productivity Using SPC</td>
<td>3</td>
</tr>
<tr>
<td>CIS 101 Introduction to Electronic Spreadsheets</td>
<td>1</td>
</tr>
<tr>
<td>CIS 115 Introduction to Word Processing</td>
<td>1</td>
</tr>
<tr>
<td>CIS 153 Introduction to Database Management</td>
<td>1</td>
</tr>
</tbody>
</table>

SELECT ONE OF THE FOLLOWING TRACKS:

**TRACK I – BUSINESS (10 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 101 Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUS 125 Supervision</td>
<td>3</td>
</tr>
<tr>
<td>BUS 260 Principles of Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>

**TRACK II – MANUFACTURING (12 CR. HRS.)**

<table>
<thead>
<tr>
<th>Course</th>
<th>CR. HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAD 150 Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>BUS 125 Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MET 101 Industrial Materials</td>
<td>3</td>
</tr>
<tr>
<td>QC 101 Basic Quality Control</td>
<td>3</td>
</tr>
</tbody>
</table>

Continued on next page.
PROGRAMS

ELECTIVES (chosen from the approved list of the students major interest.)
Electives must be chosen from the list of recommended electives or have
departmental approval. (6-13 CR. HRS. minimum)
BUS 290CI Cooperative Internship Program ........................................... 3
MATH 115/BUS 105 Probability and Statistics ........................................... 3
CIS 160 Programming Small Computers in BASIC ..................................... 3
CAD 110 Introduction to Computer-Aided Drafting (2D) ......................... 3
MT 101A Basic Machining ........................................................................ 3
MT 205 NC/CNC (Numeric Control/Computer Numerical Control) ..... 3
ECON 102 Principles of Economics ........................................................... 3
QC 101 Basic Quality Control ................................................................. 3
QC 105 Quality & Productivity Using SPC ............................................... 3
GEOG 105 World Regional Geography .................................................... 4
PHIL 205 Business Ethics ...................................................................... 3
SOC 101 Principles of Sociology ............................................................. 3
FOREIGN LANGUAGE (Select one course: FRENCH, GERMAN, or
SPANISH) ................................................................................. 4

Total 62

STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST.

ADDITIONAL INDUSTRIAL TECHNOLOGY CERTIFICATE PROGRAMS
These certificate programs are designed to prepare the student for immediate employment.
The student may receive a certificate for completion of one or more courses in the programs.

STUDENTS MUST WEAR APPROVED SAFETY GLASSES WHERE HAZARDS EXIST.

DIGITALELECTRONICTECHNOLOGY CERTIFICATE REQUIREMENTS CR. HRS.
ELTR 101 Basic Electronics or Instructor Approval ................................ 4
ELTR 102A Active Devices and Circuit Analysis .................................. 4
ELTR 112 Digital Electronics I ......................................................... 3
ELTR 205 Electronic Circuit Design .................................................. 3
ELTR 210 Introduction to Microprocessors ........................................ 3
ELTR 211A Microcomputer Interfacing and Robotic ......................... 3

Total 20
## INDUSTRIAL ELECTRICAL MAINTENANCE

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 129</td>
<td>Intro to Technology</td>
<td>3</td>
</tr>
<tr>
<td>ELTR 101</td>
<td>Basic Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELTR 111</td>
<td>Electronics Mathematics</td>
<td>5</td>
</tr>
<tr>
<td>ELTR 102A</td>
<td>Active Devices and Circuit Analysis</td>
<td>5</td>
</tr>
<tr>
<td>ELTC 150</td>
<td>Industrial Electricity</td>
<td>3</td>
</tr>
<tr>
<td>ELTC 160</td>
<td>Programmable Logic Controllers</td>
<td>3</td>
</tr>
<tr>
<td>ELTC 152</td>
<td>National Electrical Code</td>
<td>3</td>
</tr>
<tr>
<td>ELTC 203</td>
<td>Advanced Programmable Controllers</td>
<td>3</td>
</tr>
<tr>
<td>HP 101</td>
<td>Hydraulics/ Pnuematics</td>
<td>3</td>
</tr>
<tr>
<td>W 101</td>
<td>Basic Welding</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
</tr>
</tbody>
</table>

## APPLIED ALTERNATIVE & RENEWABLE ENERGY CERTIFICATE

Muskegon Community College and Grand Valley State University are proud to announce a new and innovative partnership collaboration in the area of alternative and renewable energy systems. Recently, MCC and GVSU together began offering TECH 200 Applied Alternative and Renewable Energy, a course designed to introduce the concepts of alternative and renewable energy systems and provide real-world, practical perspectives on alternative energy technologies. The course was the first step toward the development of a new certificate program in Alternative and Renewable Energy, which MCC and GVSU now offer as a continuation of this joint venture. Please note a 2.0 (C) grade is required in each class listed.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 100</td>
<td>Chemistry Fundamentals OR</td>
<td></td>
</tr>
<tr>
<td>CHEM 101</td>
<td>General and Inorganic Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 100A</td>
<td>Chemistry Fundamentals Lab OR</td>
<td></td>
</tr>
<tr>
<td>ELTC 101</td>
<td>L&amp;L Electricity - Basic</td>
<td>1</td>
</tr>
<tr>
<td>TECH 200</td>
<td>Applied Alternative and Renewable Energy</td>
<td>3</td>
</tr>
<tr>
<td>TMAT 102</td>
<td>Math - Technical II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>
INDUSTRIAL MAINTENANCE
CERTIFICATE PROGRAM REQUIREMENTS

The Industrial Maintenance Certificate Program was developed in response to requests from local industrial employers. The changing nature of manufacturing processes has contributed to significant advancements in production technology with particular emphasis on quality and continuous improvement, thereby changing the approach to maintenance. This program will enhance maintenance expertise by providing reliable and consistent basic training, as well as performance-tested documentation of acquired skills.

<table>
<thead>
<tr>
<th>CR. HRS.</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TMAT102 Technical Math II</td>
</tr>
<tr>
<td></td>
<td>CAD 150 Blueprint Reading</td>
</tr>
<tr>
<td></td>
<td>MT 101A Machining-Basic</td>
</tr>
<tr>
<td></td>
<td>W 101 Welding-Basic</td>
</tr>
<tr>
<td></td>
<td>HP 101 Hydraulics/Pneumatics</td>
</tr>
<tr>
<td></td>
<td>ELTC 101 Electricity-Basic</td>
</tr>
<tr>
<td></td>
<td>HE 110 Industrial Safety and Workplace Training</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
</tr>
</tbody>
</table>

MICROPROCESSOR ELECTRONICS TECHNOLOGY
CERTIFICATE REQUIREMENTS

<table>
<thead>
<tr>
<th>CR. HRS.</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ELTR 101 Basic Electronics</td>
</tr>
<tr>
<td></td>
<td>ELTR 102A Active Devices and Circuit Analysis</td>
</tr>
<tr>
<td></td>
<td>ELTR 111 Electronic Mathematics</td>
</tr>
<tr>
<td></td>
<td>ELTR 112 Digital Electronics I</td>
</tr>
<tr>
<td></td>
<td>ELTR 113 Digital Electronics II</td>
</tr>
<tr>
<td></td>
<td>ELTR 205 Electronic Circuit Design</td>
</tr>
<tr>
<td></td>
<td>ELTR 210 Introduction to Microprocessors</td>
</tr>
<tr>
<td></td>
<td>ELTR 211A Microcomputer Interfacing and Robotics</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
</tr>
</tbody>
</table>

PRODUCTION SUPERVISION
CERTIFICATE REQUIREMENTS

<table>
<thead>
<tr>
<th>CR. HRS.</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TMAT 101 Technical Math I</td>
</tr>
<tr>
<td></td>
<td>AMT 129 Introduction to Technology</td>
</tr>
<tr>
<td></td>
<td>BUS 127 Human Relations</td>
</tr>
<tr>
<td></td>
<td>BCOM 101 Business and Technical Communications</td>
</tr>
<tr>
<td></td>
<td>QC 101 Quality Control</td>
</tr>
<tr>
<td></td>
<td>CAD 150 Blueprint Reading</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
</tr>
</tbody>
</table>
**Programs**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET 101 Industrial Materials</td>
<td>3</td>
</tr>
<tr>
<td>BUS 125 Supervision</td>
<td>3</td>
</tr>
<tr>
<td>*TECH 290CI Cooperative Internship</td>
<td>3-6</td>
</tr>
<tr>
<td><strong>Electives (Departmental Approval required)</strong></td>
<td>0-6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>27-36</td>
</tr>
</tbody>
</table>

**If the student is presently employed in a supervisory capacity** then appropriate elective courses may be chosen in place of the Cooperative Internship. Suggested electives may include credit for Life Experience in the supervision field, W 204 Welding Supervision, QC 105 Quality & Productivity Using SPC, or BUS 265 Total Quality Management.

### QUALITY ASSURANCE CERTIFICATE REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMAT 101 Technical Math I</td>
<td>3</td>
</tr>
<tr>
<td>BCOM 101 Business and Technical Communications</td>
<td>3</td>
</tr>
<tr>
<td>QC 101 Basic Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>CAD 150 Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>QC 105 Quality and Productivity using SPC</td>
<td>3</td>
</tr>
<tr>
<td>BUS 127 Human Relations</td>
<td>3</td>
</tr>
<tr>
<td>CIS 101 Introduction to Electronic Spreadsheets</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19</td>
</tr>
</tbody>
</table>
Muskegon Community College – University Programs

In addition to the many traditional transfer opportunities available to MCC students, the college also partners with five universities in unique programs allowing occupational students to transfer to a high quality baccalaureate program. In all transfer programs, be sure to see an MCC counselor for details.

Capella University - Computer Information Systems

MCC and Capella University, located in Minneapolis, Minnesota, offer an innovative 2 + 2 online Bachelor’s degree in Computer Information Systems. Students possessing an associate degree may complete all of their upper level classes in an online format, offering a convenient, timely method of study.

Ferris State University (www.ferris.edu/ucel)

Ferris State University provides Muskegon area residents access to three bachelor degree programs. The classes for these programs are offered in several formats, including one day a week, weekends, and online:

- **BS Computer Information Systems Management** - prepares you for leadership in all key areas of business and industry.
- **BAS Industrial Technology and Management** - If you have technical education, technical training, or military training in your background and if you are looking for a career move to an administrative role or an advanced technical position, this degree is definitely the one for you.
- **Nursing RN to BSN** - Be prepared to determine your impact on health care - whether you choose to remain in bedside nursing, or move to a management position.

In addition to degree programs offered locally, MCC and Ferris have many articulation plans for smooth transfer into many of the programs offered on the main campus in Big Rapids. For more information, call 231.777.0510 or visit our office in the Stevenson Center for Higher Education on the MCC Campus.

Franklin University (www.alliance.franklin.edu/go/muskegoncc)

Through a unique educational alliance with Muskegon Community College, you have the opportunity to earn a Bachelor of Science degree online from Franklin University in one of 12 majors. The CCA Program’s online format provides the flexibility to attend class and complete your coursework without leaving your community. Throughout the completion of your bachelor’s degree, Muskegon Community College and Franklin work together to provide all the resources you need to reach your educational goals.

Majors include: Accounting, Applied Management, Business Administration, Computer Science, Digital Communication, Healthcare Management, Human Resources Management, Information Technology, Management, Management Information Sciences, Marketing, and Public Safety Management. Students can also continue their education at the graduate level through Franklin University’s 17-month on-line MBA.
Grand Valley State University (www.gvsu.edu/ce)
MCC has partnered with GVSU for many years to develop programs which enable the student to easily transfer into a baccalaureate degree program. We can help you get started by providing assistance with degree planning, credit transfer, and enrollment procedures. For more information, call 231-777-0505 or visit our office in the Stevenson Center for Higher Education on the MCC campus.

In Muskegon we offer:
- Teacher Certification - Elementary Education - Social Sciences emphasis
- Bachelor of Business Administration - Core courses

Northwood University - Management (www.northwood.edu)
A unique 3 + 1 program exists between MCC and Northwood University. Students are able to enroll for three years of classes at MCC before transferring to Northwood’s Grand Rapids program for their senior year of study. Northwood University offers a Bachelor of Business Administration degree with an emphasis in Management.

Western Michigan University (www.mu.wmich.edu)

BSE Manufacturing Engineering
This degree is a cooperative partnership between MCC and WMU. All courses are offered in Muskegon and the entire degree can be completed in four years. Foundation and pre-engineering courses are offered by MCC, and manufacturing core classes are offered by WMU. Resident faculty are available for advising.

BS Interdisciplinary Health Services
This degree completion curriculum appeals to two audiences: licensed allied health providers who desire a baccalaureate degree, and people with a non-clinical associate degree who desire a baccalaureate degree to work in a health care setting.

BS Occupational Education Studies
This unique baccalaureate degree provides graduates with a Michigan vocational education endorsement. Admission is limited to those with an applied science associate degree. Some courses are offered only in Kalamazoo.

AAS Pulp and Paper Science
MCC and WMU partner to offer three programs in Pulp and Paper Science. Students who obtain MCC’s Associate in Applied Science in Pulp and Paper Science may transfer to WMU’s main campus in Kalamazoo to complete a BS Paper Science or BSE Paper Engineering.

MCC and WMU Transfer Credit Equivalencies may be found on the web at www.wmich.edu/ce.
Muskegon Community College
Course Numbering System

Courses offered at Muskegon Community College shall be numbered according to the following system:

1. Sequential courses (those that must be taken in specific order), shall be numbered so that the first course in the sequence carries the lowest number. If a course is part of a sequence, prerequisite courses shall be clearly stated in the Course Descriptions section of the catalog, and in the Schedule of Classes.

2. Courses numbered from within the range 000 to 099 can generally be considered as pre-college-level skills development or enhancement courses, designed to help prepare students for success in college level work. Students should check with an academic counselor, department chairperson, or program coordinator to determine whether such courses may be counted toward a degree, certification, or transfer requirements.

3. Courses numbered 100 to 199 are introductory courses intended primarily for first-year college students with no significant deficiencies in their academic background.

4. Courses numbered 200 to 299 are courses intended primarily for students who have successfully completed one year of college-level coursework. The number 297 shall be reserved for courses being taught on an experimental or temporary basis, before formal addition to the College catalog. The number 299 shall be reserved for independent study courses.

COURSE DESCRIPTIONS

READY TO SUCCEED

NOTE: In many courses, you must demonstrate, before enrolling, that you are READY TO SUCCEED by:

Scoring at an acceptable level on the reading placement test. (An acceptable level is 10th grade in both vocabulary and comprehension.)

OR

Attaining a grade-point average of 2.0 or better in 15 or more college credits (S.A.M. students are exempt).

OR

Having a composite score of 22 or greater on the ACT. A score of 22 would waive the reading and writing portion of the placement tests. The mathematics placement test must still be taken.

OR

Having a score of I or II on both the reading and writing portions of the MEAP test and scoring at an acceptable level on the reading placement test. (An acceptable level is 10th grade in both vocabulary and comprehension.)

If you have not tested or do not know your scores, call the Testing Center at 231.777.0394.
ACCOUNTING (See Business)

ALLIED HEALTH COURSES
(See also Health Education)
Several Allied Health courses may be taken that do not require a commitment to a program or a special application. Students take these courses to increase their knowledge and skills in special areas or to prepare themselves to enter a health-related position.

AH 101 Medical Terminology—3 Cr. Hrs. – 3 Contact Hrs. Designed to assist the beginning health student to master new medical terms and modes of communication. With an understanding of basic terms, the student can proceed to build a functional vocabulary while pursuing a career specialty. Basic anatomy and physiology will be an integral part of the course.

AH 102 Basic Patient Care Skills—3 Cr. Hrs. – 4 Contact Hrs. This course is designed as a general introduction to patient care. The student will master skills including: vital signs, medical asepsis, isolation techniques, proper body mechanics, and introduce the student to medical terminology, medical vocabulary, medical abbreviations and charting procedures.

AH 104 Medical Insurance Billing—2 Cr. Hrs. – 2 Contact Hrs. An introductory course designed to assist the student to quickly identify insurance coverage appropriately and accurately, complete insurance forms and become familiar with billing procedures. The content of this course is relevant to dental and other allied health insurance billing.

AH 105 Introduction to Electrocardiography (EKG)—3 Cr. Hrs. – 3 Contact Hrs. This course will provide the student with the necessary knowledge to perform basic cardiac technology skills. This course does not have prerequisites but students are encouraged to enroll in the Medical Terminology course. The course will be helpful to new students interested in a career in the health technologies as electrocardiographic and/or vascular technicians. The course will also provide more in-depth information for RNs, LPNs, EMTs and other health professionals. Offered only upon sufficient demand.

AH 111 Environmental Stressors and Nutrition—1 Cr. Hr. – 1 Contact Hr. Co-requisite: NUR 100. This course is designed to provide the student with the theoretical foundation for the clinical application of nutrition principles, in relation to stress adaptation, throughout the curriculum. The focus of the course is on the identification of the role of nutrients in maintaining man’s dynamic equilibrium and the use of therapeutic diets for clients.

AH 251 Health Needs of the Young Child—3 Cr. Hrs. – 3 Contact Hrs. The emphasis in this course is on identification, treatment, and prevention of common childhood illnesses, and the promotion of good health, safety and nutrition for the young child. Physical and dental health will be emphasized, along with signs and symptoms of illness within varying age groups. Treatment options and procedures for non-professionals will be discussed. Prevention will be focused on how to promote optimum health, how to prevent injuries, and nutritional requirements of young children.

AMERICAN SIGN LANGUAGE

ASL 101 American Sign Language I—3 Cr. Hrs. – 3 Contact Hrs. Study the various aspects of American Sign Language including finger spelling, interpreting, sign vocabulary, facial expression, body movement, and grammatical structure. This course is designed for students who are considering pursuing certification in interpreting.

ASL 102 American Sign Language II—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: ASL 101. Study the various aspects of American Sign Language including finger spelling, interpreting, sign vocabulary, facial expression, body movement, and grammatical structure. This course is designed for students who would like to pursue certification in interpreting.

(continued on next page)
Muskegon Community College Catalog

ASL 103 Finger Spelling—2 Cr. Hrs. – 2 Contact Hrs. Prerequisite: ASL 101 or instructor permission. This course is designed for students who would like to pursue certification in interpreting using American Sign Language. Students will develop fluency in receptive and expressive finger spelling and numbering. They will also learn the correct usage of finger spelling and numbering.

ANTHROPOLOGY

Before enrolling in these courses, you must demonstrate that you are ready to succeed.

ANTH 103 Cultural Diversity in Contemporary Society—3 Cr. Hrs. – 3 Contact Hrs. Cultural Diversity in Contemporary Society is an ethnographic analysis of various cultural groups and the regions where they originate. Such groups as African-American, Asian-American, Hispanic-American, and Native-American will be the focus. Emphasis will be placed on their cultural similarities and differences. Students will compare such topics as the cultures’ socialization process, education, gender roles, marriage and family living, religion, health, death and dying, etc.

ANTH 105 Introduction to Physical Anthropology/Archaeology—3 Cr. Hrs. – 3 Contact Hrs. Introduces the student to the fields of physical anthropology and archaeology through a study of man’s biological and cultural adaptation. Emphasis will be placed upon the prime fossil record, dating methods, the emergence of races as adaptations to different environments, molecular, and population genetics, and the prehistorical cultural sequence in both the Old and New Worlds.

ANTH 110 Introduction to Cultural Anthropology*—3 Cr. Hrs. – 3 Contact Hrs. Introduces the student to the field of cultural anthropology through a study of language, kinship, technology, political organization, social organization, religion and healing, among other topics. Emphasis will be placed upon an investigation of selected pre-modern groups representative of the world’s major cultural regions.

*Denotes course that contains an International component.

ART

Before enrolling in these courses, you must demonstrate that you are ready to succeed.

ART 101 Beginning Art—3 Cr. Hrs. – 6 Contact Hrs. Development of artistic skills through a broad range of studio experiences: drawing, printmaking, design, ceramics, sculpture and painting.

ART 104 Drawing I—3 Cr. Hrs. – 6 Contact Hrs. Concentrated attention on drawing as a fine arts medium with study in various subject matter.

ART 105 Design I—3 Cr. Hrs. – 6 Contact Hrs. The study of the basic elements of visual design and the principles of their organization.

ART 107 Painting I—3 Cr. Hrs. – 6 Contact Hrs. The study of oils or acrylics through diverse subject matter.

ART 108 Ceramics I—3 Cr. Hrs. – 6 Contact Hrs. A study of the nature of clay through hand building, pottery processes, and glazing, stressing skill development and expressive experimentation.

ART 109 Sculpture I—3 Cr. Hrs. – 6 Contact Hrs. An introduction to the basic materials and techniques of sculpture.

ART 198 Art History I*—3 Cr. Hrs. – 3 Contact Hrs. Ancient art to renaissance. A historical survey of art from Ancient times to 1400 tracing the development of styles and the influences of major social, religious and political events.

ART 199 Art History II*—3 Cr. Hrs. – 3 Contact Hrs. Renaissance to modern. A historical survey tracing the development of art from the Renaissance to the present with an emphasis on painting.

ART 202 Contemporary Art History—3 Cr. Hrs. – 3 Contact Hrs. A comprehensive survey of art and art styles of the 20th & 21st centuries. A study of backgrounds and origins of certain current styles, the course draws from examples in painting, sculpture and architecture of America and the world. Changing ideas and trends are analyzed through lecture and discussion.
ART 204 Drawing II—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: ART 104 or permission of instructor. A continuation of ART 104.

ART 205 Design II—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: ART 105 or permission of instructor. A continuation of ART 105 with emphasis in practical design problems involving color and two-and three-dimensional materials.

ART 207 Painting II—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: ART 107 or permission of instructor. Concentration in a particular medium of the student’s choice with a study of the nature of that medium through a creative approach to painting problems.

ART 208 Ceramics II—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: ART 108 or permission of instructor. A study of traditional pottery processes through concentrated work on the potter’s wheel, glazing, and firing experiences.

ART 209 Sculpture II—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: ART 109 or permission of instructor. A continuation of ART 109, with concentration in materials of individual interest.

ART 211 Art Education Workshop—3 Cr. Hrs. – 6 Contact Hrs. Experience through studio work with art materials and methods appropriate to grade school use.

*Denotes course that contains an International component.

ASTRONOMY
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

ASTR 101 General Astronomy—4 Cr. Hrs. – 4 Contact Hrs. This course is a broad, generally non-mathematical, survey of the science of astronomy. Topics include: historical astronomy, the mechanics and clockwork of the night sky, astronomical instruments, the solar system, stellar evolution, the Milky Way, galaxies and theories about the origin and evolution of the universe. There will be opportunities for observation of astronomical objects with observatory telescopes.

ASTR 105A Cosmology—4 Cr. Hrs. – 4 Contact Hrs. Prerequisites: MATH 050 or assignment by Math Placement Test. While Astronomy is concerned with the contents of the Universe, Cosmology is the science of the origin, current state and ultimate fate of the universe. In this course, the foundations of Modern Cosmology are presented from a historical perspective, covering the physical fundamentals, the impact of Einstein’s Theories of relativity on modern cosmologies and finally from the perspective of the most recent astronomical discoveries.

AUTOMOTIVE TECHNOLOGY
Students in these courses must have approved safety glasses.

AT 114 Automotive Power Plants (Engine Rebuilding)—3 Cr. Hrs. – 6 Contact Hrs. This course includes the proper procedures and machine operations necessary to service completely, overhaul, repair or rebuild the automotive engine. Theory of engine operation and construction are also dealt with.

AT 120 Introduction to Electrical Systems I—3 Cr. Hrs. – 6 Contact Hrs. Co-requisite: AT 121. A study of fundamentals of electricity, ignition (Electronic Computer Control including DIS), cranking and charging systems. Basic electrical test equipment is also covered.

AT 121 Electrical Systems II—3 Cr. Hrs. – 6 Contact Hrs. Co-requisite: AT 120. Covers testing and servicing of ignition, cranking and charging systems. Includes the use of modern electronic test equipment and industry diagnostic methods.

AT 122 Fuel Systems and Emission Controls—3 Cr. Hrs. – 6 Contact Hrs. Prerequisites: AT 120 and AT 121 or instructor permission. Co-requisite: AT 123. This course will cover a study of fuel system (including TBI and PFI) and emission controls (including 4 gas analyzer). Diagnosis and service of system components is also covered. The operation of 2-cycle and 4-cycle engine theory is introduced.
AT 123 Engine Tune Up (Driveability)—3 Cr. Hrs. – 6 Contact Hrs. Prerequisites: AT 120 and AT 121 or instructor permission. Co-requisite: AT 122. A study of the engine accessories included under electrical, ignition and fuel systems. Covers the diagnosis, servicing, and repair of these systems and component parts as related to the entire engine operation in the vehicle.

AT 210 Power Trains (Manual Drive Trains)—3 Cr. Hrs. – 6 Contact Hrs. This course gives the student experience in theory, diagnosis and repair of automotive drive trains. It includes study of clutches, drive shafts, universal joints, differentials, axles, and manual FWD & RWD transmissions.

AT 211 Automatic Transmissions—3 Cr. Hrs. – 6 Contact Hrs. A study of the theory of operations, hydraulic circuits, gearing adjustments, and repair of automatic transmissions, both FWD & RWD (including electronic controls).

AT 212 Alignment and Suspension—3 Cr. Hrs. – 6 Contact Hrs. This course covers theory, repair, and adjustment of steering and suspension systems as well as the operation of modern four-wheel alignment and wheel balancing equipment.

AT 213 Brakes and Air Conditioning—3 Cr. Hrs. – 6 Contact Hrs. This course covers theory, repair and adjustment of hydraulic and ABS brake systems and related machining equipment. Air conditioning both R12 and R134A diagnosis testing and service is covered.

AT 214 Service Management—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Must be second year automotive student. A course covering the responsibilities of a service manager in large and small service garages. Lectures, tours, and outside speakers emphasize industrial practice in customer, mechanic, and management relationships.

BIOLOGY

Before enrolling in these courses, you must demonstrate that you are ready to succeed.

Introductory Biology is offered in a modular format (BIOL 100: 10A – 10J) and as a semester course (BIOL 103) equivalent to modules 10A, 10E, 10F & 10G.

A student who plans to complete four (4) hours of introductory biology may enroll in any combination of four modules or BIOL 103.

A student who plans to complete one year (8 hours) of introductory biology should consult with a counselor or the Life Science Department before choosing either of the following options:

- any eight modules
- BIOL 103 and four modules (10B, 10C, 10D, 10H or 10J)

ATTENTION: These modules are being phased out and will be replaced with semester courses by Winter 2007. Contact counselors for more information.

BIOL 100 Introductory Biology – 1 to 8 Cr. Hrs. (NOTE: 1 Credit hour = 3 hours lecture & 4 hours lab for 3 ½ weeks; 7 contact hours per week, per module.) Introductory Biology is offered as a series of 1 Credit Hour modules, each on a different topic. Students must concurrently register for a closed laboratory consisting of two 2-hour session times. Course grade incorporates the laboratory grade. Modules 10A, 10B, 10C, 10D, 10E, 10F, 10G and 10H are offered fall and winter. Selected modules are offered spring session.

If Biology 100 is elected as the laboratory science course to satisfy the Natural Science laboratory requirement for the A.S.A. Degree, a minimum of four Biology 100 modules must be taken.

Module descriptions follow:

BIOL 10A CELLULAR PERSPECTIVES – 1 Cr. Hr. A study of the structure and function of plant and animal cells with emphasis on controls, reproduction, energetics, and membrane phenomena.

BIOL 10B THE PLANT KINGDOM – 1 Cr. Hr. A study of the classification, morphology, reproduction, evolution, and ecology of algae, bacteria, fungi, mosses and liverworts, ferns and seed plants.

BIOL 10C THE LIVING PLANT – 1 Cr. Hr. A study of the complementarity of structure and func-
tion in flowering plants. Basic physiological principles include photosynthesis, development, regulation and movement of materials.

**BIOL 10D THE ANIMAL KINGDOM** – 1 Cr. Hr.
A study of the classification, morphology, reproduction, evolution, and ecology of selected representatives of the animal kingdom.

**BIOL 10E THE HUMAN ORGANISM** – 1 Cr. Hr.
A study of the anatomy and physiology of selected human systems. Topics include human organization, musculoskeletal system, nervous system, circulatory system, respiratory system, digestive system, and excretory system.

**BIOL 10F HUMAN REPRODUCTION AND EMBRYOLOGY** – 1 Cr. Hr.
A study of the anatomy and physiology of reproduction and development. Topics include gamete formation, fertilization, hormonal control, the pattern of prenatal development, birth, contraception, and sexually transmitted diseases.

**BIOL 10G GENETICS** – 1 Cr. Hr.
A study of human heredity. Topics include structure and function of DNA, RNA, and chromosomes, mitosis, meiosis, dominant and recessive inheritance, blood genetics, metabolic disorders, and chromosomal aberrations.

**BIOL 10H ECOLOGY** – 1 Cr. Hr.
A study of the interrelationships of living things with their environment with special attention to ecosystems of the Muskegon area. The structure and function of ecosystems, population dynamics, and ecological succession are emphasized. The open laboratory includes three required field trips with follow-up laboratory studies.

**BIOL 10J ANIMAL BEHAVIOR** – 1 Cr. Hr.
A study of behavior from a biological perspective. Behavior is presented as the function of effectors, and behavioral components are presented as ecological phenomena. Currently offered as an independent study (BIOL 299).

**BIOL 103 Introductory Biology** – 4 Cr. Hrs. – 7 Contact Hrs.
A one-semester laboratory course in biological science. Biological concepts are studied as they relate to the human organism as part of the living world. Basic principles of organization of living matter, including cell structure and function, metabolism, human systems, reproduction, development, heredity and evolution are examined.

**BIOL 105 Anatomy and Physiology I** – 4 Cr. Hrs. – 6 Contact Hrs. Prerequisite: Previous biology, especially Module 10A (Cellular Perspectives) and Module 10E (The Human Organism) or BIOL 103 (Introductory Biology), and a course in medical terminology is strongly recommended. This laboratory course is designed to meet the needs of students in nursing and other health-related fields. The course deals primarily with the normal structure and function of organs and organ systems of the body. Cell biology, histology and introductory anatomy and physiology of the skeletal, muscular, nervous, digestive, cardiovascular, respiratory, urinary, endocrine and reproductive systems are studied.

**BIOL 106 Anatomy and Physiology II** – 4 Cr. Hrs. – 6 Contact Hrs. Prerequisite: BIOL 105. A course in Chemistry is recommended.) BIOL 105 and BIOL 106 may not be taken concurrently. This laboratory course is a continuation of BIOL 105 for students in nursing and other health-related fields that require an intensive study of the anatomy and physiology of the human organism. Emphasis is on the skeletal, muscular, nervous, digestive, cardiovascular, respiratory, urinary, endocrine and reproductive systems.

**BIOL 109 Food Technology** – 4 Cr. Hrs. – 4 Contact Hrs. A study of chemical, biological, and physical principles as they pertain to food preparation, processing and production. Students apply and study the concepts in a food preparation laboratory. This course is offered Spring Session only.

**BIOL 120 Flowering Plants of Southwestern Michigan** – 1 Cr. Hr. – 7 Contact Hrs., for 3 ½ weeks. A study of the identification, ecology and distribution of the flowering plants of southwestern Michigan. This course includes lectures, laboratory study, and field trips to a variety of habitats.

(continued on next page)
BIOL 122B Allied Health Microbiology**—2 Cr. Hrs. – 2 Contact Hrs. This is an introductory laboratory course primarily designed for students in Allied Health programs. It includes a study of pathogenic micro-organisms of respiratory and other systems, the means of disease transmission, immunity to disease, and physical and chemical agents that control micro-organism growth. This course is also recommended for students who plan to take BIOL 207 and want a background in microbiology.

BIOL 200 Introductory Evolution—1 Cr. Hr. – 1 Contact Hr. Prerequisite: Successful completion of BIOL 10G or BIOL 103, or instructor permission. This course is a preparatory study of the historical development, the evidence, and the mechanisms of the biological evolution theory. Scientific hypotheses on the origin of organic molecules will also be investigated along with the examples of biological evolution in today’s community. This course provides a learning experience on a central unifying concept of biology for non-majors and majors interested in exploring the diversity and similarities among living organisms.

BIOL 200L Introductory Evolution Laboratory —1 Cr. Hr. – 1 Contact Hr. In this laboratory course which is an optional co-requisite course for BIOL 200 Introductory Evolution, students will continue to explore biological evolution and its effects on biodiversity. A day field trip, perhaps to the Field Museum in Chicago, is required for this course and may extend contact time beyond the listed two hours per week. Laboratory students must also be registered for BIOL 200 Introductory Evolution, but students taking BIOL 200 are not required to take BIOL 200L. Lab fee includes cost of field trip.

BIOL 204 Field Biology & Ecology—4 Cr. Hrs. – 7 Contact Hrs. Prerequisite: 8 Cr. Hrs. of Biology. (CHEM 101 & 102 are recommended.) An investigation of living things in relation to the environment and to each other. Population dynamics and the structure and function of ecosystems are studied. Field studies include the collection and analysis of data for scientific reports. Field trips are required. Course offering contingent on demand. Contact the Life Science Department if interested.

BIOL 207 Microbiology Lecture—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: BIOL 105 or other biology course with permission of instructor. CHEM 100 and BIOL 106 are recommended. Co-requisite: BIOL 207A. This is a general microbiology course designed primarily for students in allied health programs. Emphasis is on the general characteristics of micro-organisms and the diseases they cause. Included are ways to control micro-organisms with antimicrobials, the immune system, and physical and chemical agents. Emerging diseases and bioterrorism are also covered.

BIOL 207A Microbiology Laboratory—1 Cr. Hr. – 3 Contact Hrs. Co-requisite: BIOL 207 LEC. This course is designed for students in allied health programs. It includes preparing stained smears, culturing micro-organisms, conducting immunology experiments, performing tests to identify bacteria and fungi, and studying microbial growth control methods.

BIOL 210 Fish & Wildlife of North America—5 Cr. Hrs. – 7 Contact Hrs. Introduction to fisheries and wildlife professions and the comparative study of fish and wildlife groups, including life history, morphology, habitats, identification, and population management principles. Course offering contingent on demand. Contact the Life Science Department if interested.

BIOL 299 Independent Study—Variable credit. Open to students who have successfully completed four hours of Biology, or with permission of the instructor. The independent study will include field or laboratory study and library research. The instructor will aid the student in the selection and development of the study in keeping with the philosophy, techniques and methods or research. Open enrollment.

**Biology 120, 122B, and 200 are not introductory biology modules** but will apply toward the Muskegon Community College Natural Science laboratory requirement for associate degrees.

Each student should check with his/her counselor to ensure that planned coursework meets the
requirements for graduation from Muskegon Community College as well as specific requirements of other institutions where a student may wish to transfer.

**BUSINESS**
(Accounting, Management, Marketing, Office Systems Education)

**BUS 100 Fundamentals of Accounting**—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: A 10th grade reading level on the Nelson-Denny Test is recommended. This course is an introductory basic bookkeeping and accounting class that emphasizes the accounting cycle. Day-to-day accounting activities are covered, through the preparation of the financial statements and the process of closing the financial records. Upon successful completion of this class, the student will be well prepared to take BUS 101 Principles of Accounting I. (Students having difficulty with BUS 101 may transfer to this class up to the sixth week of the semester with no loss of tuition.)

**BUS 101 Principles of Accounting I**—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. This course introduces principles of accounting including the accounting cycle with emphasis upon theory and financial statements. Other topics covered include cash, receivables, temporary investments, inventories, plant assets, intangible assets, and payroll.

**BUS 102 Principles of Accounting II**—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: A grade of “C-” or better in BUS 101 is recommended. A continuation of BUS 101 covering partnerships, corporations, and manufacturing accounting with emphasis on financial and cost accounting concepts.

**BUS 103 Payroll Accounting & Business Taxes**—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: BUS 101 or instructor permission. This course covers in detail the accounting and filing requirements for federal payroll taxes.

**BUS 105 Business Statistics** —3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: assignment by Math Placement Test, or two years of beginning and intermediate algebra, or a grade of “C” or better in MATH 050. Probability and statistics for business, social sciences, mathematics, and biological science majors. Topics include descriptive statistics, probability, probability distributions, hypothesis testing, analysis of variance, regression, and non-parametric statistics. Graphing calculator required (TI-83 or higher recommended.)

**BUS 114 Personal Finance**—3 Cr. Hrs. – 3 Contact Hrs. This course is oriented to the practical needs of the citizen-wage-earning-consumer. This course will consider the structure of the American economic system, the impact of government on this system, and prudent economic management of the individual’s finances, such as insurance, budgeting and the use of credit. This course is designed for the student’s personal needs in today’s society.

**BUS 121 Introduction to Business**—3 Cr. Hrs. – 3 Contact Hrs. This is a general course in business principles, problems, and practices, which provides an understanding of the operation of the American Business System and its place in the economy. Information concerning more effective use of business services in personal affairs is included as well as preparation for future business courses.

**BUS 122 Principles of Management**—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. A study of the managerial functions of planning, organizing, staffing, directing, and controlling with analysis of the on-going process; knowledge which a manager must have in order to achieve coordination for the attainment of company objectives.
COURSE DESCRIPTIONS

BUS 123 Business Law I—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. This course is a study of the Uniform Commercial Code Text and of the general laws applicable to business covering law and society contracts, agency and employment, commercial paper, personal property, bailments and sales.

BUS 124 Business Law II—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. Study of the Uniform Commercial Code Text concerning corporations, property sales, negotiable instruments, insurance and bankruptcy.

BUS 125 Supervision—3 Cr. Hrs. – 3 Contact Hrs. A review of basic leadership skills needed to effectively supervise people with emphasis on communications, human relations, and the supervisor’s role in employee recruitment, selection, training and evaluation. Role-playing and other participation methods will be used.

BUS 126 Business Math—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Math Placement Test is recommended. This course covers a review of basic computational skills, percentages, inventories, depreciation, and other financial applications. The course is designed to increase competence in fundamental mathematical skills which apply to business.

BUS 127 Human Relations—3 Cr. Hrs. – 3 Contact Hrs. A study of the problems of working with people in a business environment. The focus is on dealing positively with employee morale, motivation, leadership, group behavior, personality, productivity, hiring, and training.

BUS 161A Effective Selling—3 Cr. Hrs. – 3 Contact Hrs. This course includes an analysis of the sales transaction with classroom sales demonstrations. Attention is given to topics such as: consumer characteristics, buying motives, product performance, sales aids, overcoming customer objections, and closing the sale.

BUS 162 Principles of Retailing—3 Cr. Hrs. – 3 Contact Hrs. A survey of past and present retailing practices and procedures. Retail management methods are studied, along with retail store locations and layout, equipment, display advertising, personnel policies, maintenance, inventory and cost control.

BUS 166 Quality Customer Service—3 Cr. Hrs. – 3 Contact Hrs. A course in understanding what customer service is and how to implement it into today’s organization.

BUS 179 Keyboarding—1 Cr. Hr. – Variable Contact Hrs. This course is designed for the student with no previous formal typing instruction. A student with a typing speed of 20-25 wpm should enroll in BUS 181C. This course develops basic alpha and numeric touch keyboarding skills for persons who will be using computer terminals for processing information. This is an OSE LAB course.

BUS 180C Introduction to Word Processing Part I—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: BUS 179 or BUS 181C or instructor permission. Before enrolling in this course, you must demonstrate that you are ready to succeed. Introductory and intermediate word processing features and concepts are taught, as well as document formatting. Through extensive hands-on training, students will be given the opportunity to become proficient with Microsoft Word XP/2002 and be well prepared for Microsoft Office Word Core Certification.

BUS 181C Office Procedures I – Document Formatting—3 Cr. Hrs. – Variable Contact Hrs. Prerequisite: BUS 180C. Before enrolling in this course, you must demonstrate that you are ready to succeed. This course is designed for the person who has had no formal training in formatting business documents, has minimal word processing skills, and types 25-35 words per minute. The purpose of this course is to develop correct techniques and basic keyboarding skills to increase speed and accuracy. The major portion of the course covers correct formatting procedures for business correspondence, reports, and tables using Microsoft Word. Recommended for all persons regardless of major. This is an OSE LAB course.
BUS 182C Office Procedures II – Document Production—2 Cr. Hrs. – Variable Contact Hrs. Prerequisites: BUS 180C and BUS 181C (minimum grade of C-) or equivalent. Before enrolling in this course, you must demonstrate that you are ready to succeed. A student must achieve a grade of C- or higher to advance to BUS 281C. This course has two major objectives: to provide the student with skill-building opportunities through the use of specially designed software and to allow the student to integrate word processing and document formatting skills while improving production speed and accuracy. This is an OSE LAB course.

BUS 185B Electronic Calculator—2 Cr. Hrs. – 2 Contact Hrs. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. This is an introductory course in the operation of the electronic printing calculator. The student will learn the basic functions of the calculator with applications in practical business problems. This is an OSE LAB course.

BUS 187A Electronic Records Management—2 Cr. Hrs. – Variable Contact Hrs. Prerequisite: Typing I or keyboarding proficiency and experience within a Windows environment. Before enrolling in this course, you must demonstrate that you are ready to succeed. This course presents the principles of alphabetic, numeric, geographic, and subject systems of records management, as well as maintenance of records. Database applications, using Access, will be utilized to complete the microcomputer applications simulating records management in a typical office. This is an OSE LAB course.

BUS 188A1 Voice Transcription, Administrative—3 Cr. Hrs. – Variable Contact Hrs. Prerequisites: BUS 180C and BUS 182C or equivalent. Marketable skills are developed in the use of office transcribing machines and transcription techniques using word processing. Language skills (grammar and punctuation usage) are emphasized as necessary prerequisite skills for transcribing proficiency. The practice correspondence in the course provides realistic documents from career sites of some of the fastest-growing employment areas. This is an OSE LAB course.

BUS 188B Voice Transcription, Legal—3 Cr. Hrs. – Variable Contact Hrs. Prerequisites: BUS 180C and BUS 182C. This course helps the student to develop a marketable skill in the use of an office transcribing machine and transcription techniques using word processing, with particular emphasis on legal terminology and transcription of legal documents. This is an OSE LAB course.

BUS 188D Voice Transcription, Medical Part I—2 Cr. Hrs. – Variable Contact Hrs. Prerequisites: BUS 180C, BUS 182C, and AH 101. This course enables the student to develop a marketable skill in the use of a transcribing machine and transcription techniques using word processing, with particular emphasis on medical terminology and radiology, including histories and physicals, consultation reports, and special procedures. This is an OSE LAB course.

BUS 188E Voice Transcription, Medical Part II—2 Cr. Hrs. – Variable Contact Hrs. Prerequisite: BUS 188D (Part I - minimum grade of C-). This course enables the student to develop a marketable skill in the use of a transcribing machine and transcription techniques using word processing, with particular emphasis on medical terminology, including the transcription of operative and pathology reports, discharge summaries, and autopsies. This is an OSE LAB course.

BUS 194 Business English Essentials—1 Cr. Hr. – Variable Contact Hrs. Prerequisites: Basic keyboarding competency and a basic knowledge of a word processing software package. This course is designed for the student with a desire to improve grammar and punctuation skills to aid in composing business correspondence and business reports. This course will also develop general proofreading skills needed for any printed copy. This is an OSE LAB course.

(continued on next page)
BUS 200 International Business*—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. This is an introductory course designed to help students become familiar with, understand, and appreciate people from different cultures to promote a more effective basis for working together in the business world. Emphasis and application are placed upon business etiquette and business practice as they differ in various cultures. The course will explore reasons companies choose to enter the international market. Students will learn how companies use various strategic marketing approaches and government resources to expand their operations into the international market.

BUS 220 E-Business—3 Cr. Hrs. – 3 Contact Hrs. This course provides an overview of the aspects and opportunities of doing business on the Internet, by examining how e-business strategies differ from those of a land only based business. Topics include the history of business on the Internet, viability of a business using the Internet, what makes an effective web site, technology, marketing, payment, safety, security, customer service, regulation, ethics, intellectual property, and current issues facing businesses that use the Internet.

BUS 221 Small Business Management—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. This course is designed for those who wish to begin a small business as well as those already engaged in small business management. It deals with the nature of small business, the challenges and procedures of beginning a new business and analysis of the problems faced by ongoing small businesses. Emphasis will be placed on the practical problems and solutions facing small businesses in today’s highly competitive society.

BUS 222 Fundamentals of Organizational Behavior—3 Credit Hours – 3 Contact Hours. Prerequisite: BUS 122. Organizational Behavior will revolve around the seven major competencies essential to managing an organization. Managing self, managing communication, managing diversity, managing ethics, managing across cultures, managing teams, and managing change.

BUS 260 Principles of Marketing—3 Cr. Hrs. – 3 Contact Hrs. The study of the task and importance of marketing, the movement of goods from producer to consumer, channels of distribution, marketing functions and institutions, the ultimate consumer, the industrial consumer, and the retailing and wholesaling systems.

BUS 263 Advertising Dynamics—3 Cr. Hrs. – 3 Contact Hrs. This course presents methods and techniques in modern advertising strategy, providing information to prepare an entire advertising campaign including selection of media, copywriting and advertising decision-making.

BUS 266 Quality Customer Service II—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: BUS 166 or instructor permission. Measurement, Plan, and Action. This course will take the basic concepts of Customer Service taught in BUS 166 and allow students to measure the outcome that it has on customers. With the results of these surveys, individuals will then be able to formulate a customer service plan and then put this plan into action.

BUS 273A Human Resource Management—3 Cr. Hrs. – 3 Contact Hrs. Overview of personnel relationships in a business institution covering areas of recruiting, selecting, training, evaluating, motivating, and rewarding of employees and the process involved in the accomplishments of such objectives.

BUS 274 International Studies in Human Resources*—1 Cr. Hr. – 1 Contact Hr. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. This course is taught via the Internet. Approximately one-half of the students will be from MCC and one-half will be from a college located in another country. Through researching and responding to questions related to case problems, students will become familiar with global issues that impact the field of Human Resources, and how various HR practices differ from country to country.

BUS 280C Word Processing Part II—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: BUS 180C (minimum grade of C-) and BUS 182C or instructor per-
mission. This course builds on the skills and concepts learned in the introductory course. All advanced features of Word XP/2002 are covered, including graphics, templates, and merging. BUS 280C is a hands-on course and provides students the opportunity to be well prepared for Microsoft Office Word Expert Certification. This is an OSE LAB course.

**BUS 281C Office Procedures III - Desktop Publishing**—3 Cr. Hrs. – Variable Contact Hrs. Prerequisites: BUS 182C (minimum grade of C-) and BUS 280C. This course is required by OSE students enrolled in an A.A.S. degree program. This course gives students the opportunity to integrate several Microsoft applications with an emphasis on desktop publishing features using simulated office projects and tasks. The focus is also on increased speed and accuracy. Communication skills, decision-making, and working without supervision are also reinforced in realistic applications. This is an OSE LAB course.

**BUS 290CI Cooperative Internship Program**—1 – 4 Cr. Hrs. Prerequisite: BCOM 101, and student must have a GPA of 2.5 or better and have completed a minimum of six credits in their major field of study and 30 hours of credit toward a degree. The Cooperative Internship Program is a paid or non-paid field work experience in business and/or industry within the student’s major area of study. Variable credit may be earned dependent upon the number of work hours available from the employing organization. A student may sign up for as many internships as desired; however, the number of credit hours which can be applied toward a degree/certificate depends on the student’s course of study and departmental requirements. The maximum number of hours of cooperative internship is 12 credit hours depending upon the program. This course is offered on a pass/no pass basis.

* Denotes course that contains an International Component.

**BUSINESS AND TECHNICAL COMMUNICATIONS**
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

**BCOM 101 Business and Technical Communications**—3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: English Placement Test and knowledge of any word processing software. This course is designed for students who choose to specialize in a business or technological field. All phases of the communication process will be covered with major emphasis placed on effective written communication for business and industry, including intercultural communication strategies. Revision and proofreading skills necessary for appropriate business and technical correspondence are emphasized, and students will develop abilities to organize thoughts, which will allow them to write clearly, accurately, and quickly. Business and technical writing styles, formats, and techniques will be covered. Lab hours outside of the scheduled class time will be necessary. A grade of “C” or better required to advance.

**BCOM 102 Advanced Business and Technical Communications**—3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: A grade of C- or better in BCOM 101 and knowledge of any word processing software. This course is designed for business and technical students and for people already in the work force who want to become proficient in business and technical communications. Major emphasis is placed on writing effective reports, manuals, instructions, and directions for specific audiences using appropriate style and format. While development of effective writing is the purpose of any English class, no other course concentrates on specific business and technical reporting styles, formats, and techniques. Revision and proofreading skills necessary for appropriate business and technical correspondence are stressed. Lab hours outside of scheduled class time will be necessary.

* Denotes course that contains an International Component.
CHEMISTRY
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

CHEMISTRY NOTE: Students who have not successfully completed Chemistry 100 must take a Chemistry Placement Test before enrolling in Chemistry 101. This test can be taken in the Testing Center. Test results will help place a student correctly into the MCC chemistry sequence.

CHEM 100 LEC Fundamentals of Chemistry—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: MATH 050 or its equivalent as determined by the Math Placement Test. Co-requisite: CHEM 100A. A course emphasizing fundamentals, symbols, formulae, nomenclature, oxidation states, atomic structure, the periodic law, writing and balancing equations, stoichiometry, solutions, and gas law problems.

CHEM 100A Fundamentals of Chemistry Laboratory—1 Cr. Hr. – 3 Contact Hrs. Co-requisite: CHEM 100 LEC. Laboratory theory and practice of topics included in CHEM 100.

CHEM 101 LEC General and Inorganic Chemistry—4 Cr. Hrs. – 4 Contact Hrs. Prerequisites: CHEM 100 or its equivalent as determined by the Chemistry Placement test and MATH 109 or 111 or equivalent. Co-requisite: CHEM 101A. Course topics are: the physical states of matter, structure of matter, bonding, quantitative relationships involving mass and energy, solutions, ideal and real gases, gas mixtures, oxidation-reduction, and elementary thermodynamics.

CHEM 101A General and Inorganic Laboratory—1 Cr. Hr. – 3 Contact Hrs. Co-requisite: CHEM 101 LEC. Laboratory theory and practice of topics included in CHEM 101.

CHEM 102 LEC General and Inorganic Chemistry—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: CHEM 101 and CHEM 101A. Co-requisite: CHEM 102A. Topics of the course are kinetics, chemical equilibrium, acid-base chemistry, nuclear chemistry, electrochemistry, some introductory organic chemistry as well as advanced topics from thermodynamics (including entropy, spontaneity and free energy). Successful completion of CHEM 102A is required for transfer credit in CHEM 102.

CHEM 102A General and Inorganic Laboratory—1 Cr. Hr. – 3 Contact Hrs. Co-requisite: CHEM 102 LEC. Course divided between elementary qualitative analysis and laboratory theory and practice of topics covered in CHEM 102 LEC.

CHEM 120 LEC General, Organic, and Biochemistry I—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: CHEM 100 and 100A or their equivalent and MATH 109 or 111 or their equivalent. Co-requisite: CHEM 120A. This is an introductory level general and organic course designed particularly for allied health science students. The course stresses the basic understanding of general and preparative level organic chemistry which is required in the allied health and biological sciences. The course curriculum includes a discussion on the electronic structure of atoms, chemical bonding, chemical reactions, rates of chemical reactions and the chemical equilibrium. Also discussed is bonding in organic compounds, e.g. covalent and pi bonding in aliphatic hydrocarbons and benzene rings and their derivatives, and the preparation and properties of various organic compounds and studies on their chemical reactivity.

CHEM 120A General, Organic, and Biochemistry I Laboratory—1 Cr. Hr. – 3 Contact Hrs. Co-requisite: CHEM 120 LEC. Laboratory theory and practice of topics included in CHEM 120.

CHEM 130 LEC General, Organic and Biochemistry II—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: CHEM 101 LEC, CHEM 101A. Co-requisite: CHEM 130A. This is an introductory level organic and biochemistry course designed for allied health science students. The course stresses the basic understanding of preparative level organic and biochemistry which is required in the allied health and biological sciences. The course curriculum includes a discussion of chemical bonding as well as study of the preparation of and reactivity of simple organic compounds, such as alcohol ethers, and car-
boxylic acids. The knowledge of basic organic chemistry obtained in this course is then used to develop an understanding of the structure of lipids, polypeptides, proteins and nucleic acids, and their important roles in metabolic processes.

CHEM 130A General, Organic and Biochemistry Laboratory—1 Cr. Hr. – 3 Contact Hrs. Co-requisite: CHEM 130 LEC. Laboratory theory and practice of topics included in CHEM 130.

CHEM 201E Organic Chemistry Lecture—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: CHEM 101 LEC, CHEM 101A, CHEM 102 LEC, CHEM 102A. Co-requisite: CHEM 201F. Course covers the nomenclature, preparation, properties and reactions of saturated and unsaturated hydrocarbons, aldehydes, ketones, acids and their derivatives. Stereochemistry and IR, ultraviolet spectroscopy are also introduced.

CHEM 201F Organic Chemistry Laboratory—1 Cr. Hr. – 4 Contact Hrs. Co-requisite: CHEM 201E. Laboratory work includes the synthesis of compounds representing typical reactions, together with study of the chemical and physical properties and IR spectra of the substances prepared. Both macro and microscale techniques are employed.

CHEM 202F Organic Chemistry Lecture—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: CHEM 201E and CHEM 201F. Co-requisite: CHEM 202G. A continuation of CHEM 201. Course covers nomenclature, preparation, properties and reactions of aromatic hydrocarbons, phenols, organic nitrogen and sulfur-containing compounds, carbohydrates, proteins and synthetic polymers. Nuclear magnetic resonance spectroscopy are also introduced.

CHEM 202G Organic Chemistry Laboratory—1 Cr. Hr. – 4 Contact Hrs. Co-requisite: CHEM 202F. Laboratory work includes Diels Alder and ylid reactions, a multi-step synthesis, qualitative analysis of typical organic compounds using spectral evidence as well as simple tests.

COLLEGE SUCCESS CENTER
(SEE ENGLISH AND MATHEMATICS)

COLLEGE SUCCESS SEMINAR
CSS 100 College Success Seminar—2 Cr. Hrs. – 2 Contact Hrs. This course helps develop and reinforce the skills, abilities, and behaviors that promote academic and personal success: effective note taking, productive study skills, reading and remembering, critical thinking, library skills, basic computer skills, free career and job resources, stress management, relationships and winning attitudes.

COMMUNICATIONS
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

COM 100 Principles of Communication—1 Cr. Hr. – 1 Contact Hr. An introduction to the principles of communication. Study of perception, language, listening, and nonverbal interpersonal and intrapersonal communication.

COM 101 Oral Communications—3 Cr. Hrs. – 3 Contact Hrs. An introduction to the fundamentals of oral communications. Study and application of intrapersonal, interpersonal, small group, and public speaking. Class presentations are required.

COM 102 Mass Media—3 Cr. Hrs. – 3 Contact Hrs. To create an awareness and understanding of the history, structure and effect of mass media systems. (Includes newspapers, film, radio and television.)

COM 107 Introduction to Journalism—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: ENG 101 or permission of instructor. A basic course stressing the news-gathering techniques and news-writing style utilized by newspapers, radio and television. Includes an orientation to style, copy-reading, editing, headline writing, and page layout.

(continued on next page)
COM 112 Audio Production—2 Cr. Hrs. – 2 Contact Hrs. A basic course in the fundamentals, principles, practices, and techniques of radio production. Laboratory hours by arrangement.

COM 113 Practical Radio—1-2 Cr. Hrs. – Variable Contact Hrs. Prerequisite: COM 112. A continuation of COM 112 designed to give the student the opportunity to develop skill and experience at a local radio station.

COM 201 Public Speaking—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: COM 101. A consideration of the principles of public speaking with emphasis on the theories of argumentation and persuasion. Class performances required.

COM 202 Human Communication—3 Cr. Hrs. – 3 Contact Hrs. A study of everyday communication and how it affects perceptions, self, and environment. Emphasis is on dyadic and small group interaction.

COM 203/ENG 208 Introduction to Cinema—3 Cr. Hrs. – Variable Contact Hrs. An introduction to the art of film; the course will include representative foreign and domestic films, at least one documentary film, and several (2-4) experimental and/or underground films. In addition to thematic study of films, the course explores the various elements of movie-making (i.e., script, light, sound, color, acting, directing, editing).

COM 210 Introduction to Debate—3 Cr. Hrs. – 5 Contact Hrs. An introduction to the theory and practice of modern debate.

COM 212 Television Production—3 Cr. Hrs. – 4 Contact Hrs. A basic course designed to acquaint the student with the principles, practices, and techniques of television production. Laboratory experiences will be provided in production, scripting and performance.

COMPUTER-AIDED DRAFTING AND DESIGN

CAD 100 Introduction to Drafting—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: None. Formerly known as DFT 100. The purpose of this course is to provide an introduction to drafting and CAD for students with no prior CAD/drafting experience. Emphasis will be placed on sketching skills and basic fundamentals of computer-aided drafting.

CAD 110 Introduction to Computer-Aided Drafting (2D)—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: CAD 100, high school drafting, or instructor permission. Formerly known as DFT 206A Computer-Aided Design. This course is an introduction to basic computer-aided drafting using AutoCAD™. Basic 2D CAD drafting skills will be the primary focus of this course.

CAD 120 Descriptive Geometry—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: high school drafting, CAD 100, or instructor permission. Formerly known as DFT 201 Geometry of Drafting. Descriptive Geometry is the science of graphical representation and solution of spatial problems. Techniques used to develop solutions to point, line, and surface projections, intersections, and developments will be presented.

CAD 130 Drafting Standards and Conventions I—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: CAD 110. Formerly known as DFT 101 Fundamentals of Industrial Drafting. This course is an introduction to working drawings, orthographic projection, multi-view drawings, dimensioning, section views, auxiliary views, screw threads, and fasteners. ASME standards will be stressed throughout this course.

CAD 140 Drafting Standards and Conventions II—3 Cr. Hrs. – 6 Contact Hours. Prerequisites: CAD 130. Formerly known as DFT 102 Elements of Machine Drafting. This course involves advanced topics concerning ASME standards and conventions. Advanced dimensioning, tolerancing, and GD&T will be covered.
CAD 150 Blueprint Reading—3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: MATH 040 or TMAT 101. Formerly known as DFT 103. This course is designed to teach students how to read and interpret engineering drawings.

CAD 151 Geometric Dimensioning & Tolerancing—3 Cr. Hr. – 3 Contact Hrs. Prerequisite: CAD 150 or instructor permission. Formerly known as DFT 207A. This course is designed to teach how to read, interpret, and apply geometric dimensioning and tolerancing per ANSI Y14.5M standards.

CAD 152 Residential Architecture—3 Cr. Hrs. – 6 Contact Hrs. Prerequisites: CAD 110. Formerly known as DFT 106A. This course involves the basic construction details for framed residential buildings.

CAD 153 Commercial Architecture—3 Cr. Hrs. – 6 Contact Hrs. Prerequisites: CAD 110. Formerly known as DFT 107A. This course involves the layout of a small commercial building, the basic structure being concrete and steel.

CAD 210 Parametric Design I; Part Modeling—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: CAD 130. Formerly known as DFT 212 Three Dimensional Computer-Aided Design. This course is an introduction to 3-D modeling and parametric design. Working and presentation drawings will be produced, and rendering fundamentals will be presented.

CAD 220 Parametric Design II; Assemblies—3 Cr. Hrs. – 6 Contact Hrs. Prerequisites: CAD 210. Formerly known as DFT 205 Production Drafting. This course covers advanced part modeling concepts and multiple part assemblies. Rendering and animation fundamentals will be presented.

CAD 230 Tool Design—3 Cr. Hrs. – 6 Contact Hrs. Prerequisites: CAD 220. Formerly known as DFT 204 Jig and Fixture Design. This course covers design of drilling jigs and machining fixtures commonly used in industry.

CAD 240 Team Design Projects—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: CAD 220. Working as a team, students will collaborate to design assigned products. Working and presentation drawings will be created, and manufacturing costs, materials, and tolerancing will be critical requirements. Class presentations will be required.

CAD 250 Introduction to SolidWorks®—3 Cr. Hrs. – 6 Contact Hrs. Prerequisites: CAD 110 or instructor permission. This course is an introduction to 3D modeling and parametric design using SolidWorks®. Working and presentation drawings will be produced, and rendering fundamentals will be presented.

CAD 251 Die Design—3 Cr. Hrs. – 6 Contact Hrs. Prerequisites: CAD 110 and CAD 130. Formerly DFT 203 Introduction to Die Design. An introductory course in the basic fundamentals of sheet metal stamping dies. A simple blanking die, a compound blank and pierce die, and a progressive die will be designed by the student.

COMPUTER INFORMATION SYSTEMS

CIS 100 Introduction to Personal Computers—1 Cr. Hr. – 1 Contact Hr. Prerequisites: none. This course introduces students to the proper use and operation of the Intel-compatible microcomputers using the Windows operating system. Students learn to create documents using word processing programs, create line art using graphic programs, send and receive e-mail with attachments, access the Internet using a browser, and use online course management software. Common system activities that include customizing the desktop, formatting disks, using file management procedures, and creating back-ups are a part of the introduction to personal computer operating procedures. This course was formerly offered as CIS100A: Introduction to Windows 3.1, CIS 100B: Introduction to Windows 95 and CIS100 W98 Introduction to Personal Computers Using Windows 95/98.

(continued on next page)
CIS 101 Introduction to Electronic Spreadsheets—1 Cr. Hr. – 1 Contact Hr. Prerequisites: CIS 100 or proficiency with Intel-compatible microcomputer operations. Before enrolling in this course, you must demonstrate that you are ready to succeed. Suffixes: CIS101EW—Excel for Windows and CIS101LW—Lotus 1-2-3 for Windows. A “hands-on” course designed for people with little or no previous experience with electronic spreadsheets. The course begins with a blank worksheet and continues with steps and techniques in building a worksheet. Topics include worksheet, range, file, and print commands along with basic spreadsheet functions and design concepts. Students will apply all competencies needed for the Microsoft Office Excel Proficiency certification. This course was formerly offered as CIS101: Introduction to Lotus 1-2-3.

CIS 102 Intermediate Electronic Spreadsheets—1 Cr. Hr. – 1 Contact Hr. Prerequisites: CIS 101 or permission of instructor. Suffixes: CIS102EW—Excel for Windows and CIS102LW—Lotus 1-2-3 for Windows. In this course students use electronic spreadsheet commands to manipulate data within their worksheets and to create presentation graphics. Students sort data, develop simple macros and create data specific queries based on worksheet information. In addition, participants produce colorful pie charts, bar graphs, and line charts from data contained within their electronic spreadsheet. This course was formerly offered as CIS102: Intermediate Lotus.

CIS 109 Personal Computer Maintenance—2 Cr. Hrs. – 2 Contact Hrs. Prerequisites: CIS 110 or CIS 120A or permission of instructor. This course provides students with the skills needed in the upgrading and maintenance of personal computers. Students learn how to install integrated circuits for memory into a computer’s motherboard, upgrade video displays, upgrade disk controller boards, replace disk drives, and perform diagnostic tests on equipment. Common system problems are also covered as part of hands-on troubleshooting using Intel-based computers.

CIS 110 Computer Concepts—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: Before enrolling in this course, you must demonstrate that you are ready to succeed. A survey course on computer concepts and applications associated with the current generation of computer technology. In addition, technological trends and the potential impact computers have on careers and lifestyles are discussed. Computer Concepts also provides hands-on work with computers through the introduction of commonly used application packages—word processing, electronic spreadsheets, presentation graphics, image editing, and Internet browsing software within the Windows operating environment. Students interested in business applications and the introduction to computer programming should enroll in CIS 120A Introduction to Computer Information Systems.

CIS 115 Introduction to Word Processing—1 Cr. Hr. – 1 Contact Hr. Prerequisites: CIS 100 and BUS 179 or proficiency with Intel-compatible microcomputer operations. Before enrolling in this course, you must demonstrate that you are ready to succeed. Suffixes: CIS115WW—Word for Windows and CIS115PW—WordPerfect for Windows. Students in this course are introduced to word processing concepts and skills through hands-on experience. Common editing and formatting features are discussed, demonstrated, and then applied through the creation of professional-looking documents. Students with good typing skills have an advantage when learning to create, edit, and print documents using popular word processing software. Students will apply all competencies needed for the Microsoft Office Word Proficiency certification. This course was formerly offered as CIS111: Introduction to WordStar, CIS113: Introduction to Word and CIS115W: Introduction to WordPerfect.

CIS 119 Introduction to Presentation Graphics—1 Cr. Hr. – 1 Contact Hr. Prerequisite: CIS 100 or permission of instructor. Before enrolling in this course, you must demonstrate that you are ready to succeed. Suffix: CIS119PP—PowerPoint for Windows. This course is designed to introduce students to the fundamentals of creating, saving, and retrieving presentation using a computer; creating presentations using auto content help systems and style checkers; incorporating design elements
in constructing professional presentations; adding visual effects and animation to presentations; creating graphs and organizational charts; and packaging presentation for oral presentations. Students will apply all competencies needed for the Microsoft Office PowerPoint Expert certification.

CIS 120A Introduction to Computer Information Systems—3 Cr. Hrs. – 3 Contact Hrs. Pre-requisites: Keyboarding or equivalent. Before enrolling in this course, you must demonstrate that you are ready to succeed. A business-oriented introduction to data processing principles and information systems. Course topics include the analysis and design of business computer systems, the components of a computer system, the capabilities and limitations of computer technology, and careers for the information age. Students work with computers by learning to operate Internet browsers, electronic spreadsheets, and database systems within the Windows operating environment along with programming computers using popular programming languages. Students are expected to be able to use word processing software before enrolling in this course. This course was formerly offered as CIS120: Introduction to Data Processing.

CIS 121 File Design and Utilities for Midrange Computers—1 Cr. Hr. – 1 Contact Hr. Prerequisite: CIS 120A. This course introduces students to the fundamentals of file design in a midrange computing environment. Students learn a midrange data definition language and use the utilities of a midrange operating system to create and maintain physical and logical files, database relationships, and queries.

CIS 129 Introduction to Technology—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: none. This course provides an “integrated” introduction to the current computer-based technologies of manufacturing. Students will develop a foundation of understanding through hands-on experience in: basic microcomputer operations, Computer-Aided Design (CAD), Computer-Aided Machining (CAM), Computer Numerical Control (CNC), robotics, Computer Automated Process Control, spreadsheets, and word processing. The course also promotes problem solving, group process decision-making, and communication skills.

CIS 130 COBOL Programming—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 120A or permission of instructor. This first course in COBOL covers the fundamentals of designing and developing structured programs, sequential and indexed files, input validation techniques, branching, and conditional structures. Output includes detail, summary, and exception reports. Students design, write, test and document COBOL programs within a midrange operating environment.

CIS 131 Operations and Commands for Midrange Computers—1 Cr. Hr. – 1 Contact Hr. Prerequisite: CIS 120A. This course introduces students to a midrange operating system. Students learn fundamental skills necessary to interface with the system, including using control language commands, prompting, and handling job queues, output queues, and messages. Students will also become familiar with the operating system’s architecture, and will be briefly introduced to control language programming.

CIS 143 Introduction to Local Area Networks—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 110 or CIS 120A, CIS 193A or CIS 210 recommended. This course provides a comprehensive coverage of the skills necessary for network management. Topics include concepts related to the planning of network file systems, implementation of security, the installation of application software as well as more advanced concepts such as protocol support, server management and performance issues.

(continued on next page)
CIS 153 Introduction to Database Management — 1 Cr. Hr. – 1 Contact Hr. Prerequisites: CIS 100 or CIS 110 or CIS 120A or proficiency with Intel-compatible microcomputer operations. Before enrolling in this course, you must demonstrate that you are ready to succeed. Suffixes: CIS153AW—Access for Windows and CIS153PW—Paradox for Windows. This course is designed to be an introduction to database management software. Students taking this class are taught to create and manipulate databases of their own design. The development of user-oriented queries, forms and printed reports using database data is also discussed in detail. This course was formerly offered as CIS153: Introduction to dBase.

CIS 157 Introduction to the Internet — 1 Cr. Hrs. – 1 Contact Hr. Prerequisite: CIS 100 or CIS 110 or CIS 120A or permission of instructor. This course is designed to introduce students to the wide area network called the Internet. All of the skills required to navigate the Internet to find and retrieve information in an easy to understand format are covered. Students also learn how to communicate with other Internet users. This course provides hands-on experience using popular browser software.

CIS 160 Programming Small Computers in BASIC — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: CIS 120A or CIS 163 or permission of instructor. Suffixes: CIS160VB—Visual Basic. This course is designed to explore the BASIC programming language through the introduction of mathematical computations, data handling and editing, branching, subroutines, array manipulations and sequential file processing. Students use BASIC interpreters to design, write, test and document programs.

CIS 163 VB Visual Basic for Applications — 1 Cr. Hr. – 1 Contact Hr. Prerequisite: CIS 100 or CIS 110 or CIS 120A or proficiency with Intel-compatible microcomputer operations. This course is designed to be an elementary introduction to the BASIC programming language and editor. Students taking this class are taught to create programs that interact with the user. CIS 110 students with an interest in learning to program are advised to take this class. This class also serves as a prerequisite to CIS 160.

CIS 165 FORTRAN Programming — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: CIS 120A or CIS 125 or CSCI 125 or permission of instructor. A general introduction to the concepts, basic features, capabilities, and limitations of the FORTRAN programming language. Students will write code to perform computations, data manipulation, and file processing. Emphasis is placed on the development of structured programs, thorough program testing, and user-oriented documentation. Offered on demand or as independent study.

CIS 167 Introduction to Internet Animation — 1 Cr Hr. – 1 Contact Hr. Prerequisite: CIS 100, CIS 110, or CIS 120A. Suffix: CIS 167FL--Flash. This course provides students with hands-on experience creating web-based animation using an animation editor. Topics include working with the various tools and objects available in the editor, creating and manipulating multi-layered graphics, an introduction to scripting, working with animation frames and tweening, and publishing the graphics for use on the Internet.

CIS 170 RPG Programming — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 120A or permission of instructor. This course covers fundamentals of designing and developing computer programs written using the RPG IV programming language. Topics include program logic, arithmetic operations, decision-making structures, external input and output definitions, sequential processing of batch files, and an introduction to interactive programming. Students design, write, test and document RPG IV programs within the IBM iSeries (formerly known as the AS/400) operating environment.

CIS 177 Introduction to HTML Editors — 1 Cr Hr. – 1 Contact Hr. Prerequisites: CIS100 or CIS110 or CIS120A. Suffixes: CIS177FP - FrontPage and CIS177DW – Dreamweaver. This course introduces students to creating and managing web sites and pages through the use of an HTML editor. Students will learn to maintain a site by utilizing an HTML editor to create and edit HTML documents. This includes changing text properties, adding and
Course Descriptions

deleting design elements, creating hyperlinks to other web pages and inserting multimedia objects. Students learn to work with HTML code through class demonstration and completing assignments.

**CIS 183 Networking Technologies**  – 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: CIS 110 or CIS 120A. CIS 143 recommended. This course focuses on essential issues related to data communications and networking technologies. Topics include established networking standards and terminology, the OSI model, physical and logical network topologies, the use and function of various networking hardware, media, protocols, and the fundamentals of internetworking.

**CIS 185 C Programming** — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 120A or permission of instructor. The major elements of the C programming language are introduced through a series of applications featuring C program structure, variables, integer and floating point arithmetic, looping, conditionals, arrays, functions, strings, pointers, structures and sequential file syntax. Syntactical, structural and procedural differences of C++ object-oriented methodologies are integrated into the course after a firm foundation in standard C is presented.

**CIS 187 Multimedia Digitizing** — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 100 or CIS 110 or CIS 120A or permission of instructor. This course serves as an introduction to many of the multimedia devices that allow the acquisition, manipulation, and storage of non-text media. Devices and topics include full-color, flatbed scanners, slide and negative scanners, frame-grabbers, digital camera use, audio digitizing, video digitizing, Zip drives, USB Flash drives, and CD-DVD burners. The class uses state of the art devices and software to manipulate the digital data. Additional costs include a pair of stereo headsets, blank CD and DVD disks, a blank VHS videotape, and removable read/write media as dictated by the current syllabus. This course was formerly offered as CIS297DD: Introduction to Digital Data.

**CIS 193A Introduction to Operating Systems** — 1 Cr. Hr. – 1 Contact Hr. Prerequisite or Co-requisite: CIS 110 or CIS 120A. This course surveys disk operating systems for Intel-compatible microcomputers. Students learn to take advantage of a microcomputer’s disk operating system by working with common commands and utility programs. In class discussions and demonstrations will focus on terms and basic concepts of memory management, hard disk management and personalizing computer operations.

**CIS 195 Assembler Programming** — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: CIS 120A and at least one programming course or permission of instructor. Students should be proficient with another programming language before enrolling in this course which covers the use of a low-level command language. Students write instructions for mathematical computations, data handling, branching, looping, indexing and other assembler operations.

**CIS 200 Comprehensive Windows** — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: CIS 100 or CIS 110 or CIS 120A or permission of instructor. Suffix: CIS200B—Windows 95/98. This course presents a thorough treatment of Windows concepts and skills by providing discussion, demonstrations and hands-on student/software interaction. Class content ranges from basic introductory skills to customization of an individual student’s Windows environment. Topics include in-depth discussion of Windows’ built-in applications, file management, object linking and embedding, use of peripherals, and error analysis and recovery.

**CIS 209 Personal Computer Maintenance II (A+ Certification)** — 3 Cr. Hrs. – 5 Contact Hrs. Prerequisite: CIS 109, ELTR 109 or permission of instructor. This course is designed to take the successful PC Maintenance student to the next, more in-depth level of PC maintenance and repair. The Web presentations, text assignments, demonstrations, and related CD-ROM teaching materials will help prepare the student to be competent to pass the A+ Certification written exam. The related labs will provide the needed hands-on experience to develop system understanding and competent analysis and repair procedures. Lab experience will include the building of a complete computer system, with troubleshooting and analysis of the system. It is recommended that CIS 143 be taken to provide more network background before taking the A+ exam.
CIS 210 Operating Systems Concepts — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 110 or CIS 120A or CIS 193A or permission of instructor. This course takes a functional view of the essential concepts relative to computer operating systems. Topics include principles of memory management, processor management, concurrent processes, device management, file management, and system management. The course incorporates how these essential principles are applied to Personal Computer (PC) operating systems in practice with a hands-on approach. Primary operating systems studied included MS-DOS and Windows operating systems.

CIS 217 Introduction to JavaScript Programming — 1 Cr. Hr. – 1 Contact Hr. Prerequisites: CIS 257 and one computer programming class (CIS 125, CIS 130, CIS 160, CIS 170, or CIS 185). Students will learn how to program by using JavaScript. Students will learn how to write JavaScript programs that use the latest language techniques. Students will also learn how to write programs that are compatible with previous versions of the language and are cross-browser compatible. They will also be required to implement scripts on a web page and publish a web site on the Internet using File Transfer Protocols (FTP).

CIS 220 E-Business — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: none. This course provides an overview of the aspects and opportunities of doing business on the Internet, by examining how e-business strategies differ from those of a land only based business. Topics include the history of business on the Internet, viability of a business using the Internet, what makes an effective web site, technology, marketing, payment, security, customer service, regulation, ethics, intellectual property, and current issues facing businesses that use the Internet.

CIS 230 Advanced COBOL Programming — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 130. Advanced COBOL programming concepts using a midrange operation environment are introduced as students design, write, test and document batch and interactive programs. Topics will include random file processing, file maintenance, interactive programming (includes screen design), arrays, and tables. Functional programs that are well-designed and documented are the main emphasis of the course.

CIS 235 Telecommunications — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: CIS 110 or CIS 120A, CIS 143 or CIS 183 recommended. This course provides an introduction to telecommunication concepts and network configurations. Students learn standard procedures and protocols for data transmission over various communication channels and study the components of a telecommunications system. Network architectures and designs are examined through the use of discussion and case studies.

CIS 247 Advanced COBOL Programming — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 130. This course covers a midrange integrated database management system. Students learn fundamental relational database modeling and implement efficient solutions for storing and manipulating large volumes of data. Through the implementation of these models, students will become proficient with using DB2 Universal Database, Structured Query Language, and trigger programs.

CIS 250 Developing Information Systems — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 120A and previous (or current) enrollment in an advanced level programming course. This course reviews and applies traditional systems development methodologies implemented by project teams. Classroom discussion centers on the design and development of user-oriented information systems. Course content includes feasibility studies, systems analysis, design concepts, and implementation strategies.

CIS 251 Database Programming for Midrange Computers — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 121. This course covers a midrange integrated database management system. Students learn fundamental relational database modeling and implement efficient solutions for storing and manipulating large volumes of data. Through the implementation of these models, students will become proficient with using DB2 Universal Database, Structured Query Language, and trigger programs.

CIS 253A Database Design and Implementation — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: CIS 153 and a programming course. This course provides students with systems development experience within a database environment. Fourth-generation languages, report generators, and other system design tools are used in conjunction with case studies to provide real-life applications of the systems development process.

CIS 257 Designing Internet Applications — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 110 or CIS
COURSE DESCRIPTIONS

120A or CIS 157 or permission of instructor. Before enrolling in this course, you must demonstrate that you are ready to succeed. This course is designed to help students learn the fundamentals of the Hyper Text Markup Language (HTML), Extensible Hyper Text Markup Language (XHTML), and web page design. Students will learn how to use Internet browsers, graphic editors and to markup text, graphics, and pictures for the Internet using text editing software, like Microsoft Notepad. They will also learn to create a web page and publish a small web site on the Internet using File Transfer Protocols (FTP). Students will be expected to critique other web pages and time permitting, there will be demonstrations of Javascript, animated GIF files, and other Internet tools.

CIS 260 Advanced BASIC Programming—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 160. Suffixes: CIS260VB—Visual Basic. Advanced BASIC programming concepts are introduced as students design, write, test and document a system of interactive programs. This course emphasizes the inter-relationship between programs and data in a business environment. The use of utility programs, string manipulations, file-handling routines for updating random files and screen design utilities are introduced along with design considerations for user-oriented input, output and documentation.

CIS 271 Advanced RPG Programming—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 170. Students taking this course write interactive RPG IV programs. Structured design and coding techniques are emphasized as students design screen formats, online queries, and file maintenance routines for relational databases. Students design, write, test, and document RPG IV programs within the IBM iSeries (formerly known as the AS/400) operating environment.

CIS 277 Internet Site Administration—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: (CIS 110 or CIS 120A) and CIS 193A and CIS 257. Suffixes: CIS277LA – Linux and Apache and CIS 277MS – Microsoft’s Networking Technologies. This class is designed to teach students how to setup and administer an Internet Web server using popular operating system and server software. Students will set up their own Web server by installing the operating system software, establishing user accounts and rights, creating designated work spaces, and installing appropriate server software. In addition, students use the server software to establish an Internet domain, support HTML documents, and run server side programs.

CIS 280 Java Programming—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 185. This course addresses advanced level object-oriented programming techniques using the Java programming language. Coverage includes construction of basic Java programs, use of input/output and other common instance and static methods, unique syntactical constructs, conditions and iteration, differences between the C++ environment and the Java environment, the acquisition and installation of the Java compiler and runtime platform, and the interpretation of common errors and warnings. These concepts are presented through the use of extensive examples and assignments.

CIS 283 Advanced Local Area Network Administration—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: CIS 143 and either CIS 183 or CIS243, or permission of instructor. This course covers the fundamentals of designing and installing network hardware and software for a small LAN. Topics include network adapters and cabling, disk expansion, common network problems, and troubleshooting. Students are provided with a series of lecture and lab exercises intended to develop ability to design, implement, troubleshoot and solve network problems.

CIS 285 Advanced C Programming—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 185. This course concentrates on the design, writing, and testing of specific utility programs, and the creation of a multi-program, user-oriented, semester programming project. The student must demonstrate a thorough knowledge of the application and the C/C++ programming tools required to create it. Structures, unions, pointers, recursive calls, sorting techniques, sequential and binary searches, stack considerations, operating system calls, advanced-level memory management, accessing memory-mapped video and window creation are used as tools for creating projects. Random data file creation and updating techniques are discussed.
CIS 287 Personal Computer Digital Video Editing—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 110 or CIS 120A or permission of instructor. This course serves as an introduction to video editing on the PC. Topics covered include PC hardware and software selection, construction, configuration, and installation required for video editing, capturing, codecs, editors, audio editing, cutting scenes, moving scenes, manipulating the timeline, rendering, transitions, crossfades, fade to and from black, basic and advanced titling, graphics, overlays, keying, manipulating still images, interlace removal, slow and fast motion, color balance, brightness, contrast, and exporting projects from computer to videotape. Additional costs include a pair of stereo headsets, blank CD and DVD disks, digital and analog video tapes, and removable read/write media as dictated by the current syllabus.

CIS 293 Contemporary Issues In Networking Design—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: CIS 283 and all other courses in the Networking curriculum or permission of the instructor. This course is offered as a topics seminar where issues will be examined that concern a more advanced application of computer networking. It is a capstone class where students will apply the summation of their knowledge from all previous networking courses to the study and analysis of the chosen topics. This course is designed as a research and discussion course.

CRIMINAL JUSTICE

CJ 101 Introduction to Law Enforcement —3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. A study of the organization and jurisdiction of local, state, and federal law enforcement, judicial, and correctional systems. Also includes the history and philosophy, career opportunities and qualifying requirements, terminology and constitutional limitations of the system.

CJ 102 Police Administration I—3 Cr. Hrs. – 3 Contact Hrs. A study of the principles of police administration and organization; administration of staff units; function and activities of Criminal Justice Agencies.

CJ 104 Criminology—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. The study of deviance and society’s role in defining behavior. Theories of criminality and the economic, social, and psychological impact of crime, victimization, and relationships between statistics and crime trends.

CJ 109 Crime Prevention and Juvenile Delinquency —3 Cr. Hrs. – 3 Contact Hrs. A practical study of the history and development of juvenile justice theories, procedures and institutions. Problems of juvenile delinquency, theories of causation and prevention programs. Police prevention programs, juvenile courts, federal, state and local treatment and prevention.

CJ 110 Defensive Tactics—2 Cr. Hrs. – 4 Contact Hrs. Prerequisites: Passing pre-admission physical test, student must be enrolled in a certified police academy or be a sworn peace officer. The focus of attention in this course will be the use of basic techniques. Each technique demonstrated by the instructor will have a variety of uses. All techniques will be designed to incapacitate the object of focus as quickly and professionally as possible. The importance of documentation followed by court testimony techniques will be strictly emphasized throughout the entire course. 1 lecture hour / 3 lab hours.

CJ 112 Emergency Vehicle Operations—1 Cr. Hr. – 1 Contact Hr. Prerequisites: Valid driver’s license, enrolled in a certified police academy or be sworn officer or certified EMS provider. This course is designed for Emergency and Commercial vehicle operators. The course will emphasize the legal aspects of emergency vehicle operation, vehicle dynamics, vehicle maintenance, vehicle inspections and human dynamics. The practical exercise of the course will be conducted at an outdoor site, where the student will practice, then demonstrate their individual proficiency in operating the type of vehicle appropriate for their individual operation. The outdoor course will be set up in conformance with the recommended National Law Enforcement Driver’s Training Guide and Federal Emergency Management Agency Training Guide. 1 hour lecture.
CJ 120 Firearms Certification—2 Cr. Hrs. – 4 Contact Hrs. Prerequisites: Student must be registered as part of a law enforcement or corrections program. This course will prepare a student to use firearms safely. The course will be conducted in compliance with the curriculum set forth by the National Rifle Association Police Practical Course. It will cover areas such as semiautomatic handguns, shotguns, use of force, safe handling of guns, ballistics, malfunctions and overall safety. 1 hour lecture and 3 hours lab.

CJ 122 The Police Patrol Function—3 Cr. Hrs. – 5 Contact Hrs. Prerequisites: Student must be enrolled in the Law Enforcement AAS degree Program. A study of the history, theory, duties and responsibilities of the patrol division; communications, development of observational powers, care and use of protective weapons, patrol vehicles & other equipment. Handling of emergency request for assistance, vehicle stops, burglary, robbery, sex offenses, the mentally ill and other kinds of situations. 2 hours lecture / 3 hour lab.

CJ 123 Traffic Enforcement—3 Cr. Hrs. – 5 Contact Hrs. Prerequisites: Student must be enrolled in the Law Enforcement AAS degree program. This course provides the student with the knowledge needed to analyze traffic control problems and the fundamentals of traffic accident investigations. The course will include motor vehicle laws in the state of Michigan. 2 hours lecture / 3 hours lab.

CJ 130 Tactical Language—3 Cr. Hrs. – 3 Contact Hrs. The class focuses on a basic introduction to tactical Spanish with an emphasis on commands and informational phrases for the Emergency and Law Enforcement personnel. This allows them to handle situations, to acquire information about what they see, and to read necessary information to others in Spanish. 3 hours lecture.

CJ 193 HAZ-MAT Communications—1 Cr. Hr. – 1 Contact Hr. A study of the 29 Codes of Federal Regulations (CFR), Section 1910.1200 and the Hazard Communications (Right to Know) Regulation. The course focuses on the impact these regulations have on the occupational workforce. Requirements for the implementation and monitoring of the regulations are examined. Also included are the studies of Federal Regulations cited in Section 301, Title III, Superfund Amendments and Reauthorization Act (SARA) of 1968, Right To Know Act of 1968. 1 lecture hour.

CJ 201 Criminal Law—3 Cr. Hrs. – 3 Contact Hrs. The study of the philosophy of legal sanctions and their historical development, from common law to modern American criminal law. Includes the judicial process, classification of crimes, elements of and parties to crimes, general definitions of crimes, and common defenses.

CJ 202 Police Administration II—3 Cr. Hrs. – 3 Contact Hrs. The study of theories, procedures and methods of operation of public police with emphasis on discretionary powers. This course is a study of the administration of police line operations; including theories, types and methods of patrol, liaison between units, enforcement policy, manpower distribution and analysis of operations. We will discuss the operation of the detective and juvenile divisions and such problems as organized crime, vice, etc. Also includes a review of career opportunities and current trends in law enforcement.

CJ 204 Criminal Investigation—3 Cr. Hrs. – 3 Contact Hrs. An introduction to criminal investigation procedures including theory of investigation, conduct at crime scene, collecting and preservation of criminal evidence. Methods in the use of police science laboratory, fingerprinting, ballistics, documents, report writing and procedures in the courtroom are covered. Additionally, study in case preparation, interviewing, and basic investigative techniques will be included.
COURSE DESCRIPTIONS

CJ 205 Interrogation and Case Preparation — 3 Cr. Hrs. – 3 Contact Hrs. Comprehensive study of Miranda decision; principles of psychology of questioning, interrogation of suspects, interviewing witnesses and informants, preparation of statements, declarations and confessions, problems in case preparation, and mechanical means of deception.

CJ 206 Evidence and Criminal Procedure — 3 Cr. Hrs. – 3 Contact Hrs. This course deals with rules of evidence of particular import at the operational level in law enforcement and with criminal procedures in important areas such as arrest, force and search and seizure. An introduction to major court holdings, procedural requirements that stem from these holdings, and their effects on daily operations of the criminal justice system.

CJ 207 Police and Community Relations — 3 Cr. Hrs. – 3 Contact Hrs. The primary objective of this course is to acquaint the student with the need for the police to become a part of the community rather than apart from it. An examination of the attitude of people towards the police, as well as the feelings of the police about the community they are sworn to protect will be made. Public relations will be distinguished from community relations. The image of the police will be examined as well as the current methods being used by police agencies to better their relations with the community. A study of the police officer’s role in attaining and maintaining public support. Including recognition and understanding of community problems, community action programs, methods of coping with crisis situations, victimology, ethics and minority cultures, environments, crime prevention and police operations.

CJ 208 Police Science Laboratory I — 3 Cr. Hrs. – 3 Contact Hrs. General course in police laboratory techniques: photography, recording the crime scene, collection and preservation of evidence and fingerprints, development of studies in the area of firearms, hair microscopy and chemistry.

CJ 205 Interrogation and Case Preparation — 3 Cr. Hrs. – 3 Contact Hrs. Comprehensive study of Miranda decision; principles of psychology of questioning, interrogation of suspects, interviewing witnesses and informants, preparation of statements, declarations and confessions, problems in case preparation, and mechanical means of deception. History, development and philosophy of corrections; tribal and biblical antecedents; Western adaptations; developments in the U.S.; current forms and approaches to include probation, parole, medium security concepts; the work of related agencies.

CJ 251-A Legal Issues in Corrections — 3 Cr. Hrs. – 3 Contact Hrs. Exploration of probation, sentencing and philosophies, legal concepts applicable to probation, parole, sentencing and incarceration; objectives of the correctional process and factors influencing correctional decision-making.

CJ 252-A Correctional Institutions/Facilities — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Before enrolling in this course, you must demonstrate that you are ready to succeed. This course is designed to provide a more in-depth study of corrections as part of the Criminal Justice System and specific discussions of the evolution of corrections, organization and development of jails in America, alternatives to incarceration, probation, parole and the concept of community-based corrections. Emphasis will be placed on community-based corrections and corrections as it could be in the year 2000. The course will provide the student with a background for coursework in corrections. Particular emphasis will be placed on the Michigan Department of Corrections with some discussions of alternatives to the current correctional philosophy in Michigan.

CJ 257 Client Relations in Corrections — 3 Cr. Hrs. – 3 Contact Hrs. This course is designed to examine the growth and development of the correctional client, with particular emphasis on early environment, psychological and sociological factors. Specific problems such as substance abuse, sexual
deviations, medical disorders and mental disorders will be discussed. Intervention strategies will be considered.

**CJ 290CI Criminal Justice Cooperative Internship**—Variable 1-4 Cr. Hrs. Prerequisites: The student must have a GPA of 2.5 or higher. The student must have completed a minimum of 6 credit hours in their major field of study and 30 credit hours toward a degree. The Cooperative Internship Program is a paid or non-paid field work experience in the industry within the student’s major area of study. Variable credit (1-4 cr. hrs. per semester) may be earned dependent upon the number of work hours available from the employing organization. A student may sign up for as many internships as desired, however, the number of credit hours which can be applied towards a degree/certificate depends on the student’s course of study and departmental requirements. The maximum number of hours of cooperative internship is 12 credit hours depending upon the program. This course is offered on a pass/no pass basis.

**CJ 298 Instructor Skill Development**—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: Student must be a certified law enforcement or corrections officer, currently employed by an agency. This course is designed to impart a wide range of teaching skills, concepts, and techniques specific to the law enforcement trainer. Topics covered include adult learning, training needs, research methodology, instructional methodology, and evaluation techniques. 3 lecture hours.

**DANCE**

Before enrolling in these courses, you must demonstrate that you are ready to succeed.

**DNC 100 Modern Dance I**—1 Cr. Hr. – 2 Contact Hrs. Basic exercises and technique for the beginning student in modern dance. Movement, rhythmic and compositional forms will be studied.

**DNC 101 Modern Jazz Dance I**—1 Cr. Hr. – 2 Contact Hrs. Basic dance exercises, technique, and jazz sequences will be taught in this course. Students will gain the ability to recognize appropriate music and various phases of jazz dance history.

**DNC 102 Ballet I**—1 Cr. Hr. – 2 Contact Hrs. Beginning and intermediate level Ballet dance exercises, techniques, and Ballet dance sequences will be taught in this course.

**DNC 106 Social Dance**—1 Cr. Hr. – 2 Contact Hrs. Beginning dance steps and techniques relating to social dance, including ballroom and contemporary novelty dances. A study of the history, music and rhythms that are related to social dance.

**DNC 200 Modern Dance II**—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: DNC 100 or permission of instructor. Intermediate work in modern dance composition and technique. History of modern dance is also studied as well as different dance forms used in composing dance.

**DNC 201 Modern Jazz Dance II**—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: DNC 101 or permission of instructor. Continuation of beginning and intermediate level jazz dance exercises, techniques and sequences will be taught in this course.

**DNC 213 Modern Jazz Dance III**—2 Cr. Hrs. – 4 Contact Hrs. Prerequisite: DNC 201 or permission of instructor. Continuation of intermediate and advanced level modern jazz exercises, techniques and sequences will be taught in this course.

**DNC 218 Dance Choreography and Design**—2 Cr. Hr. – Variable Contact Hrs. Prerequisite: DNC 100 or permission of instructor. Application of choreographic knowledge in the design of a dance work to include the principles of dance composition, direction and performance.

**ECONOMICS**

Before enrolling in these courses, you must demonstrate that you are ready to succeed.
ECON 101 Principles of Economics*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: MATH 40. A course appropriate for economics, social science, business administration, and engineering majors, and any other students interested in how their economic system works. This is a course in macroeconomics, which attempts to show how a market system determines levels of employment and unemployment, and the factors affecting inflation and economic growth. Various theories of the macro economy are examined. Government attempts at economic stabilization, including the role of the Federal Reserve System are discussed.

ECON 102 Principles of Economics*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: MATH 40. A course in microeconomics, especially suited for social science, business and engineering majors. Various types of competition and how these affect decision making by the firm are discussed. Price and output determination by the firm are also examined. Other topics include the pricing of resources, the role of trade unions, international trade and finance, income distribution and poverty, and the basic characteristics of the economic systems of selected countries other than the United States.

ECON 130 Money and Banking—3 Cr. Hrs. – 3 Contact Hrs. A course appropriate for anyone interested in the role of money in an economic system. This course examines the working of the banking system and the role of the Federal Reserve System. The historical development of money and the U.S. banking system is examined. Some attention is given to the various types of financial institutions, practical bank management, government efforts at economic stabilization and developments in our monetary and banking systems.

*Denotes course that contains an International Component.

EDUCATION

ED 101 Introduction to Education—2 Cr. Hrs. – 2 Contact Hrs. A comprehensive survey of preschool, elementary and secondary teaching, stressing objectives and philosophy, student guidance, curriculum study, and methods of teaching. Opportunities to explore professional education as a career, directed observation, and professional readings are included. Twenty-five hours of field work are required.

ED 103 Constructive Play for the Developing Child—1 Cr. Hr. – 1 Contact Hr. This course will examine the dynamics of play relative to early childhood education. We will discover how young children develop through play. Students will learn to recognize play as a learning medium, study educational theories of play, and learn how to create a meaningful play environment. Fifteen hours of field work are required. (May be used towards CDA renewal.)

ED 106 Introduction to Outdoor Education—2 Cr. Hrs. – 2 Contact Hrs. This course presents information, techniques and activities for exploring the positive relationships between the individual and the natural environment of the outdoor world. It provides students hands-on learning experiences and teaches learning functions of community living and cooperation away from home. Emphasis is placed upon living and learning with children in an outdoor educational environment. Twenty-five hours of on-site field work are required. (May be taken for CDA renewal.)

ED 107 Child Care: Operating a Successful Business—3 Cr. Hrs. – 3 Contact Hrs. Existing licensed centers and child care providers will develop an understanding of administrative and business responsibilities, record keeping, taxes, curriculum development, personnel, parent involvement and the developmental growth needs of child care setting. Twenty-five hours of field work are required. (May be used for CDA renewal.)

ED 108 Creativity in the Classroom—2 Cr. Hrs. – 2 Contact Hrs. Creativity will be explored as a potential/need of every human person, as a necessity for living fully in today’s world, and as an essential element in the education of children. Our model for education will be the creative learning process. A philosophical foundation and practical ideas/materials for stimulating creativity will be provided in this course. Twenty-five hours of field work are required. (May be used for CDA renewal.)
ED 109 The Parent-Child Connection—3 Cr. Hrs. – 3 Contact Hrs. This course will develop an understanding of the parenting process and present content and research basic to the fundamental concepts, issues and skills in child rearing. Twenty-five hours of field work are required. (May be used for CDA renewal.)

ED 111 Introduction to the Education of Young Children—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: An interview with the program coordinator. The course is designed to introduce students to the field of early childhood education, and to the certificate programs offered by the Education Department. The education of young children will be examined from a broad perspective. Various philosophies, program models and current trends in early childhood education will be emphasized. Criteria for “safe”, “healthy”, exemplary early childhood programs, developmentally appropriate practices, and learning environments – including multicultural and special needs – will be examined. Training prescriptions will be developed for all students. Field trips to day care centers or preschools, and twenty-five hours of field work are required. ED 111 is a prerequisite for all students seeking the CDA Certificate.

ED 116 Children’s Poetry—1 Cr. Hrs. – 1 Contact Hr. Formerly ED 206. Poetry will be reviewed as a natural phenomenon in the lives of children. It is seen as necessary for living fully in today’s world and is an essential element in the education of children. The course will focus on the nature of poetry as it relates to the developmental stages of childhood. Subject matter, intent, sensory relationships, mechanics and form will be explored. Fifteen hours of field work are required. (May be used for CDA renewal.)

ED 117 The Whole Child—3 Cr. Hrs. – 3 Contact Hrs. This on-line and video series covers topics of central importance to the education and development of your children. Watch the interaction of teachers and children in a variety of settings. Real caregivers work with children from multi-cultural backgrounds and all developmental levels. (Computer/Internet skills are needed.) Twenty-five hours of field work are required. Before enrolling in this course, you must demonstrate that you are ready to succeed.

ED 118 Creative Curriculum for Children—3 Cr. Hrs. – 3 Contact Hrs. Formerly ED 215. Designed for home day care and MI School Age credential. Program development will be offered in the areas of science, social studies, art, music, outdoor environment, language arts, math, multi-cultural learning, and reading. Instructional techniques, curriculum materials, guidance, school/family relationships, and community resources will be investigated. Twenty-five hours of field work are required. (May be used for CDA renewal.)

ED 120 Early Childhood Education—3 Cr. Hrs. – 3 Contact Hrs. Formerly ED 205. An introduction to current practices in early childhood education as related to the total growth and development of young children. Professional staff responsibility, program development, scheduling, evaluation and instructional techniques will be investigated. Curriculum materials, guidance, school-family relationships, community resources and significant child development research will be explored. Twenty-five hours of field work are required. Before enrolling in this course, you must demonstrate that you are ready to succeed.

ED 200 Literacy Birth to Five—3 Cr. Hrs. – 3 Contact Hrs. Emphasis will be placed on developing literacy in the young child age 0-5 through appropriate practices, processes, and contexts. Theory and Practice will be linked for success; and Evaluating and Directing Learning will occur. Twenty-five hours of field work are required.

ED 202 Teaching of Reading in the Elementary School*—3 Cr. Hrs. – 3 Contact Hrs. A study of current philosophies, instructional strategies and materials in the teaching of reading from preschool through middle school grades. Lectures, discussions, readings, research, workshops, and classroom observation/participation will be included. Particular interests in reading at specific age/grade levels may be pursued in depth. Twenty-five hours of field work are required.

(continued on next page)
ED 207 Principles of Elementary Education — 3 Cr. Hrs. – 3 Contact Hrs. Appropriate for the elementary school curriculum, this course will include educational philosophies, learning theories, teaching strategies, teaching and support staff responsibilities, parent/community/volunteer involvement, curriculum modeling, trends and innovations, behavior management, scheduling and evaluation, multi-cultural learning opportunities, developmental and special learning and growth needs of children with different learning abilities, special topics, and current research. Particular interests at specific age/grade levels may be pursued in depth. Twenty-five hours of field work are required.

ED 210 Child Care and Guidance — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Departmental approval. This is the culminating course in the early childhood education sequence. Instruction is provided in competency and guidance techniques for the young child. Students will write, have proofed and finalize the six “competency goals”. These are required for the credential, in preparation for the final evaluation. Their autobiography and an individualized training prescription will be written by the field advisor following the on-site observation. Counseling, evaluations and recommendations for the completion of the program are provided. A twenty-five hour internship is required.

ED 211 Behavior Management — 3 Cr. Hrs. – 3 Contact Hrs. A comprehensive review of the theory and practice of behavior management in applied settings. Emphasis will be placed on the development of entry-level competency in behavior analysis and treatment. This will include, but not be limited to, an introduction to the principles of behavior modification as well as the theories and techniques associated with the psychodynamic, biophysical, and environmental perspectives as they relate to the broad field of behavior management. Twenty-five hours of field work are required. (May be used for CDA renewal.)

ED 214 Infants and Toddlers — 3 Cr. Hrs. – 3 Contact Hrs. The development of the newborn to 36-month-old child is examined in this course. Current research practices and publications of leading child specialists are reviewed as they relate to the cognitive, language, social, emotional and sensorimotor growth of the infant and toddler. Twenty-five hours of field work are required.

ED 216 Educating the Exceptional Child and Young Adult — 3 Cr. Hrs. – 3 Contact Hrs. A comprehensive survey of professional research, practice, trends and laws in the education of people with special needs. Areas of impairment studied include mental, hearing, visual, physical, emotional, and learning disabled. The exceptionality of gifted and talented are examined as well. Twenty-five hours of field work are required. (May be used for CDA renewal.)

ED 217 Creative Dramatics — 1 Cr. Hr. – 1 Contact Hr. This course is an introduction to creative dramatics appropriate for the classroom, home and community. The goals and concerns of creative drama will be explored as well as methods for incorporating these techniques into a curriculum. Focus will be centered on the activities that are the basis of every creative dramatics program. A particular interest will be centered on the novice who needs practical advice on how to begin teaching creative thinking and problem-solving. Fifteen hours of field work are required. (May be used for CDA renewal.)

ED 219 Science in the Elementary Classroom — 3 Cr. Hrs. – 3 Contact Hrs. The focus of this course is on learning science concepts and methods relating to the physical environment, and learning to teach the concepts to children. Basic life, earth and physical science content will be taught, as well as instructional methods for application in the elementary school classroom. Students will gain practical knowledge through field work and on-site investigations. The course is designed for prospective elementary school classroom teachers, and is a part of the elementary school curriculum in many colleges. Twenty-five hours of field work are required.

ED 220A Early Childhood Assessment — 2 Cr. Hrs. – 2 Contact Hrs. An introduction to techniques and strategies assessing the behavior, achievement and performance of young children. The importance and value of observations of children, types and varieties of assessment, role of assessment in
multi-cultural settings, importance of portfolio development and observation systems will be discussed. Twenty-five hours of field work are required.

**ED 221 Teaching Students with Learning and Behavior Problems**—3 Cr. Hrs. – 3 Contact Hrs. This course is designed to enable students to effectively teach children with learning disabilities and emotional or behavioral impairments. The emphasis is on teaching skills and content areas, methods and procedures, interventions and strategies helpful in educating children at risk. The course is required of students enrolled in the Instructional Assistant – Special Education and MCC MI School Age Certificate Programs. It is highly desirable and recommended for any student who plans to work with special needs children, or in inclusive classrooms. Twenty-five hours of field work are required.

**ED 222 Educating the Deaf**—3 Cr. Hrs. – 3 Contact Hrs. This course deals with the educational, social and psychological implications of deafness. Historical perspectives and contemporary practices in elementary, secondary and post-secondary deaf education will be explored. Causal factors relative to deafness will be investigated along with current developments in treatment. An additional focus of the course will be interpersonal relationships of deaf members. “No-voice” class assignments and examinations will be designed to develop basic competency in receptive (seeing and understanding) and expressive (signing) use of American Sign Language (ASL). The course could be used as an elective in the A.S.A. degree or in any of the certificate programs, or as an alternative to ED221 in the Instructional Assistant–Special Education Certificate sequence. Twenty-five hours of field work with hearing impaired are required. (May be used for CDA renewal.)

**ED 223 Child Care Center Administration**—3 Cr. Hrs. – 3 Contact Hrs. This course is designed for those who wish to begin a child care business as well as those already engaged in working as a child care center director. It deals with the nature of childcare, the challenges and procedures of building a new center, classroom design, and analysis of the problems faced by a start up business. Emphasis will be placed on solving practical problems by developing a personnel notebook, parent/guardian notebook, center notebook, a budget/business plan, designing room space and being prepared to order age appropriate equipment and materials. Twenty-five hours of field work are required.

**ED 224 Comparative Education**—3 Cr. Hrs. – 3 Contact Hrs. An introduction to educational philosophies, methods, patterns of control, financing, organization and relationship with the larger society in selected countries of the world, including the United States. The emphasis is upon comparison, and a comprehensive social science methodology is utilized which examines historical, political, economic, and social factors that serve as the foundation for the educational systems of nations. Systems to be compared are drawn from all regions of the world and are representative of prevailing economic, political, and social conditions. Twenty-five hours of field work are required.

**ED 225 Child Development**—3 Cr. Hrs. – 3 Contact Hrs. Formerly ED 114. Basic issues in the development of infants and children, and methods of studying children will be discussed. In-depth exploration of the physical, behavioral, psychological and cognitive development of children will be viewed from a multi-cultural perspective. This course may be used in addition to, or in place of ED250 (Human Growth and Learning) to fill the requirements of all Education Department certificate and degree programs. It may also be used to meet the academic requirements of C.D.A. certificate renewal. Twenty-five hours of field work are required.

(continued on next page)
ED 226 Interdisciplinary Approaches to Early Interventions—3 Cr. Hrs. – 3 Contact Hrs. Before enrolling in this course, you must demonstrate that you are ready to proceed. This course is a comprehensive review of the needs, services and issues for infants and toddlers ages 0-3 at risk and with special needs. The students will begin to understand/develop a team base and collaborative approaches when working with and providing services to children with special needs. In addition, the role of parents and caregivers will also be emphasized. Twenty-five hours of field work are required, including lab experiences at selected sites.

ED 230 Children's Literature—3 Cr. Hrs. – 3 Contact Hrs. This course will investigate literature for children, and appropriate learning activities suitable for the preschool, elementary and middle school student. Relationships are explored between child development, school curricula, instructional strategies, language arts, multi-cultural activities, and literature. Particular interests in the practical application of literature with specific age/grade levels may be pursued in depth. Twenty-five hours of field work are required.

ED 250 Human Growth and Learning—3 Cr. Hrs. – 3 Contact Hrs. A comprehensive study of the human life cycle will be explored. This course will include all stages of growth and development—from birth to death, language acquisition and information processing, learning theories and basic theoretical models. Domains of cognitive, affective, physical and social development will be explored. Current research in the field will be investigated. Students may pursue in-depth interests in human growth/learning at specific age/grade/ability levels. Twenty-five hours of field work are required. (May be used for CDA renewal.)

ED 251 Health Needs of the Young Child—3 Cr. Hrs. – 3 Contact Hrs. The emphasis in this course is on identification, treatment, and prevention of common childhood illnesses, and the promotion of good health, safety and nutrition for the young child. Physical and dental health will be emphasized, along with signs and symptoms of illness within varying age groups. Treatment options and procedures for non-professionals will be discussed. Prevention will be focused on how to promote optimum health, how to prevent injuries, and nutritional requirements of young children. Twenty-five hours of field work are required. (May be used for CDA renewal.)

ED 290C1 Cooperative Internship for CDA/Michigan School Age Credential Certificates—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Successful completion of ED 210 and 2.5 GPA or better. Before taking this course, the student must have completed 21 credit hours toward their CDA certificate or 28 credit hours toward their Michigan School Age certificate as well as 480 hours of paid or non-paid fieldwork hours within the student's choice of certificate program. The instructor will meet with the student three times during the semester, and will perform two on site observations of the student working in the appropriate childcare setting. The student will work with the instructor and the work site supervisor chosen to supervise the internship. The student should expect to spend 45 hours during the semester. Credit is awarded only when the student, the instructor and the work supervisor have completed evaluations/observations and supporting academic requirements.

*Denotes course that contains an International Component.

EDUCATION RELATED, courses which may be used for CDA renewal.
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

ART 211 Art Education Workshop—3 Cr. Hrs. – 6 Contact Hrs. Experience through studio work with art materials and methods appropriate to grade school use.

MATH 105 Mathematics for Elementary Teachers—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Assignment by Math Placement Test, or must have earned a grade of “C” or better in Math 050. Not a “methods” course. A general course for students majoring in elementary education. The basic ideas behind our number system and geometric concepts are discussed. Topics include: problem solving,
sets, system of numeration, the real number system, geometry and metric measure.

MU 192 Music for the Classroom Teacher — 4 Cr. Hrs. – 4 Contact Hrs. Co-requisite: MU 190C, unless requirements can be met by examination. See instructor. This course is required for future elementary classroom teachers. No previous musical training is necessary. The course provides a background in the fundamental elements of music through singing, playing classroom rhythm and melody instruments, recorder and autoharp. Includes introduction to methods of teaching music, observation and participation in area schools.

PEP 201 Elementary Physical Education for the Classroom Teacher — 2 Cr. Hrs. – 2 Contact Hrs. A theory and activity course designed to acquaint the prospective classroom teacher with planning and teaching his/her own physical education program. Concepts of program planning plus practical experience in teaching varied levels of physical education activities are included. This course is required for physical education majors and suggested for elementary education majors.

PSYC 202 Educational Psychology — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: A grade of C or better in PSYC 201 or permission of the instructor. This course explores interrelationships between the fields of psychology and education. Research data, learning theories, cultural pluralism and special topics reflective of current educational change are examined. Particular interests in educational psychology at specific age/grade levels may be pursued in depth. Forty-five (45) hours of classroom experience in the public/private schools will be required. Exceptions to be approved by the instructor.

ELECTRICITY

ELTC 101 L & L Electricity-Basic — 3 Cr. Hrs. – 4 Contact Hrs. This course is not a requirement of the Electronics Technology Program. A theory and activity course designed to introduce the basic relationships between voltage, current, and resistance. Topics include: soldering, DC circuits, volt-ohm-amp meter operation, alternating current, relays, ladder diagrams, residential wiring, and safety. Practical laboratory experiments reinforcing the above topics are provided.

ELTC 103 Residential Wiring — 3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: ELTC 101. A study of the layout, installation and testing of electrical components and circuits found in residential wiring. Extensive hands-on assignments are combined with the application of the current National Electrical Code governing residential wiring.

ELTC 150 Industrial Electricity — 3 Cr. Hrs. – 4 Contact Hrs. (1 hour lecture, 3 hours laboratory) Prerequisite: Recommended minimum of six months electrical experience or previous Basic Electricity course. This course is intended for electrical maintenance personnel with some previous electrical experience or coursework. It will review basic DC and AC electrical theory and components, safety, use of test instruments and electrical symbols. Other topics include: ladder diagrams, control circuits, starters, contactors, relays and overload devices. “Troubleshooting” will be emphasized and there will be an introduction to the use of programmable controllers for machine control.

ELTC 152 National Electrical Code — 3 Cr. Hrs. – 3 Contact Hrs. This course covers the National Electrical Code as currently adopted by the State of Michigan. Designed for the apprentice electrician, this course is also approved by the State of Michigan for the required upgrade for Journeymen and Master Electricians.

ELTC 160 Programmable Controllers — 3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: ELTC 150 or instructor permission. This course introduces the concept of machine control through programmable controllers. Program design, controller operation, wiring techniques, programming techniques, and applications are examined; related lab exercises will be conducted with Allen-Bradley SLC 500 controllers and RSLogix 500 Software.

(continued on next page)
ELTC 203 Advanced Programmable Controllers—3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: ELTC 160 or instructor permission. This course is a continuation of ELTC 160. Applications and programming of advanced instructions from the Allen-Bradley SLC 500/MicroLogix 1000 instruction set are covered. Topics include data handling, logic functions, bit shift/sequencer functions, math operations, analog I/O, subroutine files and interrupts.

ELECTRONICS

ELTR 101 Electronics-Basic—4 Cr. Hrs. – 6 Contact Hrs. Pre-or-Co-requisites: ELTR 111. Topics include: series and parallel circuits, batteries, electromagnetism, conductors, insulators, volt-ohm-amp-meters, oscilloscopes, capacitance, inductance, resonance, impedance matching, and transformers. Laboratory experiments reinforcing the above topics are provided. This course covers: familiarity with common hand tools, safety practices, soldering, use and care of common laboratory equipment.

ELTR 102A Active Devices and Circuit Analysis—4 Cr. Hrs. – 6 Contact Hrs. Prerequisites: ELTR 101 and ELTR 111. This is a course in solid state devices and circuits. It includes performance measurements, device testing, multi-stage amplifiers, coupling techniques, amplifier design, and feedback principles. Some devices covered are BJT’s, JFET’s, MOSFET’s, and diodes. Laboratory experiments will be required.

ELTR 109 Personal Computer Maintenance—2 Cr. Hrs. – 2 Contact Hrs. Prerequisite: CIS 110, CIS 120A or instructor approval. This course provides students with skills needed in the upgrading and maintenance of personal computers. Students will learn how to install integrated circuits for memory into a computer’s motherboard, upgrade video displays and drivers, upgrade disk controller boards, replace disk drive, install a multimedia system, and perform diagnostic tests on equipment. Common system problems will also be covered as part of hands-on troubleshooting using Intel-based computers.

ELTR 111 Electronic Mathematics—5 Cr. Hrs. – 5 Contact Hrs. Prerequisite: One year high school algebra recommended. Co-requisite: ELTR 101. This course gives the beginning electronics student the mathematical skills necessary to solve electronic problems. Topics include: basic algebra, series and parallel circuits, direct and alternating current solutions, Kirchoff’s loop equations, Thevinn’s Theorem, right triangle trigonometry, vector algebra, logarithmic and exponential equation solution.

ELTR 112 Digital Electronics I—3 Cr. Hrs. – 4 Contact Hrs. Digital Electronics I is the first course in a three-semester sequence of digital courses. Content includes number systems, codes, logic gates, Boolean algebra and combinational logic circuits. Relevant laboratory experiments will be required of students each week.

ELTR 201A Communications (Principles & Servicing)—4 Cr. Hrs. – 6 Contact Hrs. Prerequisite: ELTR 102. A study of the electronic devices, theory, and circuits used in modern communication systems. Topics to be covered include: modulation and transmission principles, antenna theory, demodulation system, troubleshooting techniques, and servicing procedures. A.M., F.M. stereo, and color television receivers will be used for laboratory experience.

ELTR 202A Industrial Electronic Systems—4 Cr. Hrs. – 6 Contact Hrs. Prerequisite: ELTR 102. The advanced study of electronic circuits and their application to the control of industrial and commercial equipment and processes. The design, construction and analysis of operational circuits includes power supplies, SCRs, UJTs, diacs, triacs, phototransistors, relays, programmable controllers, timing circuits and motors with their associated control circuits. Proper procedures are stressed in laboratory assignments which are designed to provide practical experiences for the student.

ELTR 205 Electronic Circuit Design—3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: ELTR 102. This course deals with the application of linear integrated circuits. The student will be given a series of design specifications for a number of circuits which he/she
will convert into practical working models. Circuits found in communications electronics, industrial electronics, and instrumentation electronics will be used as a basis for the design problems. Some of the topics will be inverting and non-inverting amps, comparators, op amp filters, timers, and voltage regulators.

**ELTR 209 Personal Computer Maintenance II (A+ Certification)**—3 Cr. Hrs. – 5 Contact Hrs. Prerequisite: ELTR 109, CIS 109, or instructor approval. This course is designed to take the successful PC Maintenance student to the next, more in-depth level of PC Maintenance and Repair. The Web presentations, text assignments, demonstrations, and related CD-ROM teaching materials will help prepare the student to be competent to pass the A+ Certification written exam. The related labs will provide the needed hands-on experiences to develop system understanding and competent analysis and repair procedures. Lab experience will include the building of a complete computer system, with troubleshooting and analysis of the system. It is recommended that CIS 143 be taken to provide more network background before taking the A+ exam.

**ELTR 210 Introduction to Microprocessors**—3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: ELTR 112. This course deals with basic concepts common to all microprocessors such as bus structure, memory, C.P.U. functions and timing. The student will construct and troubleshoot input and output ports and device select circuits. A number of assignments will be given which require the student to program a microcomputer trainer in assembler language.

**ELTR 211A Microcomputer Interfacing**—3 Cr. Hrs. – 5 Contact Hrs. Prerequisites: ELTR 205 and ELTR 210 or instructor approval. The third in a series of digital courses in which principles and techniques of interfacing a microprocessor to special peripheral hardware are examined. The student will design and construct circuits to interface data converters, stepper motors, and AC/DC loads to a variety of I/O port configurations.

**ELTR 212 Medical Instrumentation and Measurement**—4 Cr. Hrs. – 6 Contact Hrs. Prerequisite: ELTR 205. This course introduces the student to operating and servicing basic medical instrumentation such as EEG, ECG, defibrillators, safety analyzers, etc. Basic physiological signals and terminology are covered. Typical medical equipment circuits are constructed and tested. Electrical safety is emphasized.

**ENGINEERING**

MCC offers the pre-engineering courses required by all ABET accredited engineering schools in Michigan. Before enrolling in these courses, you must demonstrate that you are ready to succeed.

**ENGR 105 Introduction to Engineering**—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: MATH 50 or its equivalent as determined by the Math Placement Test. An introduction to the engineering profession and to its various disciplines; to the professional skills required of engineers; including oral and written communications, ethics of the profession, and team building and teamwork; and to the design process. Video presentations of professional activities and studies will be shown.

**ENGR 202 Statics**—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: PHYS 203 and MATH 283. A study of force systems in two and three dimensions. Composition and resolution of forces and force systems, principles of equilibrium applied to various bodies, simple structures, friction, centroids, moments of inertia. Vector algebra is used where appropriate. Graphing calculator required. (TI-85 or higher recommended.)

**ENGR 204 Engineering Dynamics**—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: PHYS 203, ENGR 202, MATH 283, and MATH 295. Vector description of force, position, velocity, and acceleration in fixed and moving reference frames. Kinematics and kinetics of particles, assemblies of particles and rigid bodies. Includes translation, plane motion, rotation, impulse-momentum and work-energy methods. Introduction to vibrations and time response. Graphing calculator required. (TI-85/or higher recommended.)
ENGLISH
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

IT IS IMPORTANT FOR STUDENTS TO TAKE THEIR ENGLISH CLASSES EARLY!
Knowledge of the English language and skill in using it are required in many aspects of life, including one’s employment and, consequently, many MCC courses, programs, and degrees require competency in English composition. If you are contemplating earning an ASA degree or are planning to earn a bachelor’s degree at a four-year school, you are strongly advised to follow the guidelines below. If you are planning to enter another program or are unsure of your plans, see a counselor for specific requirements that may apply to you.

STUDENTS MUST TEST BEFORE ENROLLING IN ENGLISH CLASSES.
Before enrolling in English 101, you must demonstrate that you are READY TO SUCCEED.

Before you register, please make an appointment to take the English Placement Test (a reading and writing test) by calling 231.777.0394, or submit an overall/composite ACT test score of 22 or higher, or submit a Level 1 or Level 2 on both reading and writing on the MEAP tests. The Testing Center, located in Room 353, in open days and evenings. Testing is free.

Based upon the results of the test, you will receive a letter code of A, 2A, B, or C and be directed to do one of the following:

Code A: Enroll in English 101
Code 2A: Enroll in English 101 and English 114
Code B: Enroll in English 091 and Reading 040A
Code C: Enroll in English 085 and Reading 040C

Students with an A code should enroll in English classes the first semester of attendance (first 15 credit hours). Students who fulfill the English 101 prerequisite should enroll in English 102 the second semester of attendance (first 30 credit hours).

The College requires that students with a 2A, B or C code enroll in the necessary courses during the first semester of attendance.

Students who have questions pertaining to the above placement policies should consult with a counselor.

GUIDELINES
If you are required to take English 091, take it your first semester. Take English 101 in your second semester and English 102 in your third semester.

If you are not required to take English 091, take English 101 within your first 15 hours of course work, even if you are required to take English 114 concurrently, and English 102 within your first 30 hours of course work.

All 091 level classes and 101 level classes use computers for writing, so knowledge of some word processing program is helpful.

ENG 085 Essential Writing Skills—2 Cr. Hrs. – 3 Contact Hrs. For students with a C code, this course will prepare the student for ENG 091 or ENG 101. This course is an equivalent to English 089 in a classroom setting. The student will improve writing skills using the writing process, including group editing, and study basic sentence structure.

ENG 089 Refresher English—2 Cr. Hrs. – Variable Contact Hrs. Co-requisite: ENG 002 Day or Evening Lab. An individualized introduction to basic writing through process oriented instruction. The self-paced course covers basic skills, including sentence structure, writing journals, paragraphs, and short essays.

ENG 091 Introduction to English Composition—3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: A code of “C” or “D” on the English Placement Test. A course in which students concentrate on mastering basic principles of English grammar, sentence structure, punctuation, usage, and spelling. Emphasis is placed on writing clear sentences, effectively devel-
oped paragraphs, and short essays. The course is intended to prepare students for English 101 and 102 as well as to assist them in other college courses in which writing is required. This course includes a one-hour laboratory to be used for additional group instruction or individual instruction as deemed necessary by the instructor.

ENG 101 English Composition — 3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: A code of “A” or “B” on the English Placement Test or a grade of “C” or better in ENG 091 or ENG 089 with instructor recommendation. A course in which students will develop the abilities to read critically, to think logically, to discuss intelligently, and primarily to write effectively using exposition, argumentation, and research. A grade of “C” or better is required to enter into English 102.

ENG 102 English Composition — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: A grade of “C” or better in ENG 101. A course in which the student will develop the ability to interpret and criticize a variety of literary forms, especially fiction, drama and poetry. Students will discuss these works and write critical essays.

ENG 114 Refresher English — 1 Cr. Hr. – Variable Contact Hrs. Co-requisite: ENG 002 Day or Evening Lab. A course designed to improve basic skills so that students can successfully complete writing assignments given in college classes. Emphasis is placed on sentence writing, punctuation, usage, paragraph development, and research skills. The course is individualized and self-paced. It should be taken before or at the same time as English 101.

ENG 199-A Personalized Writing — 1 Cr. Hr. – Variable Contact Hrs. Co-requisite: ENG 002 Day or Evening Lab. An individual program of study designed to help students expand writing skills. Students pursue a self-paced course emphasizing specific skills needed at work, in school, or in everyday life. Course content depends on individual needs. Students meet once a week with an instructor for direction, instruction, and encouragement.

ENG 199-B Personalized Writing — 2 Cr. Hrs. – Variable Contact Hrs. Co-requisite: ENG 002 Day or Evening Lab. Similar to ENG 199A.

ENG 200 Literature of Western Civilization* — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102. An intensive study of selected major literary works of Western Civilization from 2600 B.C. through the Renaissance.

ENG 201 Literature of Western Civilization* — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102. A continuation of English 200. Study of world literary classics from the Renaissance until modern times.

ENG 204 Introduction to Fiction* — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102 or concurrent enrollment in ENG 102 and permission of instructor. An analytical study of novels, novellas and short stories ranging from ROBINSON CRUSOE to modern African short stories with the purpose of developing and enlarging an understanding of and appreciation for cross-cultural literary forms and fiction itself.

ENG 205 Introduction to Poetry — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102. An introduction to the study of poetry with the purpose of developing critical values and the ability to read with understanding and appreciation. Students will each select a poem by a leading English or American poet as the basis of a major critical study.

ENG 206 Introduction to Drama — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102. A study of representative dramas and theaters from Greek to modern times.

(continued on next page)
ENG 207 Diverse Voices*—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102 or concurrent enrollment in ENG 102 and instructor permission. This course focuses on literature of multicultural origins: ethnic voices from America, representative fiction from Japan, India, Russia, Africa, South and Central America, Western Europe and developing national communities. This course analyzes the literature from these varied cultures by exploring ethnic, aesthetic, and thematic cultural inspirations.

ENG 208/COM 203 Introduction to Cinema—3 Cr. Hrs. – 3 Contact Hrs. An introduction to the art of the film; the course will include representative foreign and domestic films, at least one documentary film, and several (2-4) experimental and/or underground films. In addition to thematic study of films, the course explores the various elements of movie-making (i.e. script, light, sound, color, acting, directing, editing).

ENG 210 The Nature of Language—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102 or permission of instructor. Introduction to the English language through a study of its history and characteristics as described by structural and transformational grammarians and cultural mavens. Interested students are advised to contact the Chairperson of the English Department.

ENG 211 Literature of World Mythology*—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102 or permission of instructor. Overview of representative Greco-Roman, Middle Eastern, Norse, English, Pacific Island, Indian, Chinese, Japanese, African, South American, Native American mythology and epics. Surveyed for understanding of creation, Fertility and Hero myths and their meaning in our cultural and personal attitudes and ideas.

ENG 213 Literature of Shakespeare*—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102 or permission of instructor. Overview of Western Civilization’s most respected and famous author, William Shakespeare. The course explores several plays and poems in depth as well as the culture and traditions of Shakespeare’s England. In addition, students will discover Shakespeare’s influence on our contemporary world. Field trips are anticipated (optional).

ENG 218 Popular Literary Genres: Horror, Fantasy and Science Fiction—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and 102 or concurrent enrollment in ENG 102 with instructor approval. This course focuses on three genres of literature possessing rich histories in the development of folklore, literary forms, and literary criticism, as well as abundant connections with the development of popular culture in the twentieth and twenty first centuries. The class will read five novels spanning these genres, as well as selected short works of fiction and commentary by authors and critics active in these fields. In addition, films with connections to the literature will be viewed to better understand the themes expressed in the literature and their popular reception in a visual medium.

ENG 221 Advanced Writing—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102 or permission of instructor. A writing “workshop” course designed to introduce students to the practice of expository prose. Students will read and write in a variety of essay forms – from personal narratives to critical reviews –as well as critique each other’s work.

ENG 222 Creative Writing—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102 or permission of instructor. Written recommendation of the freshman composition instructor may be required. The study of writing techniques as well as actual writing and critical discussion of various types of short fiction are stressed. Students are encouraged to take a literature course prior to enrolling in this writing-intensive course.

ENG 223 Poetry Writing Seminar—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102 or permission of instructor. An informal forum in which students experiment writing their own poetry. It includes the study of open forms and patterned forms. Students discuss each other’s work as well as the works of modern and contemporary poets.
EN 225 Major American Writers/American Literature I—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102 or concurrent enrollment in ENG 102 and instructor permission. This course is a study of representative literature of the United States from the earliest settlement to 1865. Serving both the historical and critical perspectives, the focus is upon certain recurring themes which have grown out of the American experience and their continuing relevance for today’s student.

EN 226 Major American Writers/American Literature II—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and ENG 102 or concurrent enrollment in ENG 102 and instructor permission. Continuation of English 225, from the Civil War to the present.

EN 227 British Literature 1 (673-1744)*—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and 102 or concurrent enrollment in ENG 102 with instructor approval. In Introduction to British Literature I (673-1744), students will survey the realm of British Literature and discuss its forms, functions, meanings and themes. Students will write formal and informal interpretations of the writings and complete essays and take two exams.

EN 228 British Literature II (1750-today)*—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: ENG 101 and 102 or concurrent enrollment in ENG 102 with instructor approval. Completion of English 227, British Literature I (673-1744) is recommended. In Introduction to British Literature II (1750-today), students will survey the realm of British Literature and discuss its forms, functions, meaning and themes. Students will write formal and informal interpretations of the writings and complete essays and take two exams.

EN 234D Library Skills/Research Skills—1 Cr. Hr. – 1 Contact Hr. This course is designed to acquaint the student with resources available in the library: print, CD-ROM, online databases, and the Internet. It will give the student basic knowledge for developing search strategies, conducting research, evaluating source material, and compiling an extensive bibliography.

EN 250 Poetry Workshop—3 Cr. Hrs. – 3 Contact Hrs. Generally a summer offering with specialists in poetry. Workshop includes writing and criticism. May be elected for a maximum of six credits over a period of two summers - three credits per summer.

FOREIGN LANGUAGES
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

FRENCH

FR 101 Basic French*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: The student must have either completed ENG 101, be presently enrolled in ENG 101, have passed the English Placement Exam indicating they may enroll in ENG 101, or have the permission of the instructor. This is a beginning course for students who have had no previous study of French. The emphasis is on developing communication in French through listening, speaking, reading and writing activities.

FR 102 Basic French*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Must have earned a grade of “C” or better in FR 101, or successful completion of two recent years of high school French, or have the permission of the instructor. A continuation of FR 101. The student continues to develop the capacity to understand, speak, read and write French.

FR 201 Intermediate French*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisites: Must have earned a grade of “C” or better in FR 101 and FR 102 or satisfactory completion of three recent years of high school French, or have the permission of the instructor. This second year course is designed to improve the four basic skills begun in the first year. This course reviews and reinforces material learned in the first year, examines more tenses and other aspects of grammar, and provides practice in expanding capabilities in reading, writing, speaking and understanding French.
FR 202 Intermediate French*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Must have earned a grade of “C” or better in FR 201, or successful completion of four recent years of high school French, or have the permission of the instructor. This course is a continuation of FR 201.

GERMAN

GER 101 Basic German*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: The student must have either completed ENG 101, be presently enrolled in ENG 101, have passed the English Placement Exam indicating they may enroll in ENG 101, or have the permission of the instructor. This course is the first semester of a communicative language course to promote proficiency and practical competence in elementary German. It will focus on the essential elements of effective communication by teaching skills in listening, speaking, reading and writing. It will also provide cultural insights into life in German-speaking countries.

GER 102 Basic German*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Must have earned a grade of “C” or better in GER 101, or successful completion of two recent years of high school German, or have the permission of the instructor. This course is a continuation of GER 101 with continued emphasis on communication and proficiency.

GER 103 Basic German* (Intensive Grammar Supplement and Advanced Conversation)—2 Cr. Hrs. – 2 Contact Hrs. Prerequisites: Must have earned a grade of “C” or better in GER 101 and GER 102, or successful completion of three recent years of high school German, or have the permission of the instructor. This course will provide an intensive grammar review and serve as a supplement to German 101 and 102 so that the student will have a complete introduction to ALL grammatical elements of the German language. Advanced conversation and written assignments will complement this grammatical study. The topics for conversation, written work and readings will include German history, the situation of foreign workers in Germany, the apprenticeship system and German unification.

GER 201 Intermediate German*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisites: Must have earned a grade of “C” or better in GER 101 and GER 102, or successful completion of three recent years of high school German, or have the permission of the instructor. This is the first semester of an intermediate level German course, which stresses skills to help the student communicate competently and appropriately in various situations in German. It reflects the American Council on the Teaching of Foreign Languages (ACTFL) proficiency guidelines. Listening, speaking, reading and writing skills will be strengthened by using authentic, contemporary information.

GER 202 Intermediate German*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisites: Must have earned a grade of “C” or better in GER 101, GER 102, and GER 201, or successful completion of four recent years of high school German, or have the permission of the instructor. This is a continuation of German 201 with expansion of communicative and proficiency abilities, contemporary cultural information, and grammatical knowledge.

ICS 101 GER International Cultural Studies in Germany*—2 Cr. Hrs. – 1 Contact Hr. Prerequisite: Selection to participate in the Exchange Program between Muskegon Community College and the Kaufmännische Schule Stuttgart-Nord and acceptance of the terms of participation. German language abilities are not required but highly recommended. The course introduces students to the Global Community as represented by Germany. The student will study German culture, history, and politics through lectures, discussions, and actual travel to Stuttgart, Germany. It is offered in conjunction with the Kaufmännische Schule Stuttgart-Nord in Stuttgart, Germany, and culminates with a ten-day visit to Germany. Beyond tuition and texts, additional costs include the airfare to Stuttgart, Germany, and spending money while in Germany. Please note: This course does not carry the Ready to Succeed prerequisite, but does not fulfill the Foreign Language requirement under the International category of the ASA degree.

*Denotes course that contains an International Component.
SPANISH

SPAN 101 Basic Spanish*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: The student must have either completed ENG 101, be presently enrolled in ENG 101, have passed the English Placement Exam indicating the student may enroll in ENG 101, or have the permission of the instructor. This course is for students with little or no experience with Spanish. It is designed to help the student achieve a minimal oral capability, to comprehend the structure of the language, and to develop moderate reading and writing skills. There is no laboratory requirement, but the student is required to spend five sessions with a native speaker, when available, for group conversation practice. There will be occasional sessions on cultural matters.

SPAN 102 Basic Spanish*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Must have earned a grade of “C” or better in SPAN 101, or successful completion of two recent years of high school Spanish, or have the permission of the instructor. Spanish 102 assumes that the student has studied Spanish for at least one semester at the college level (preferably Spanish 101). The student continues to develop the capacity to read, write, speak and understand Spanish. There will be occasional sessions on cultural matters. The grammatical emphasis is on identifying and using the various tenses. There is no laboratory requirement, but the student is required to spend five sessions with a native speaker when available for group conversation practice.

SPAN 201 Intermediate Spanish*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisites: Must have earned a grade of “C” or better in SPAN 101 and SPAN 102, or successful completion of three recent years of high school Spanish, or have the permission of the instructor. This course reviews and reinforces the material learned in the first two semesters, examines more tenses and other aspects of grammar, and provides practice in expanding capabilities in reading, writing, speaking and understanding Spanish. There is no laboratory requirement, but the student is required to spend five sessions with a native speaker, when available, for group conversation practice. There will be occasional sessions on cultural matters.

SPAN 202 Intermediate Spanish*—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Must have earned a grade of “C” or better in SPAN 201, or successful completion of four recent years of high school Spanish, or have the permission of the instructor. This course focuses on the remaining tenses and on the subjunctive mood. The student will have more opportunities to develop skills in reading, writing, speaking and understanding Spanish. There is no laboratory requirement, but the student is required to spend five sessions with a native speaker, when available, for group conversation practice. There will be occasional sessions on cultural matters.

*Denotes course that contains an International Component

GEOGRAPHY

GEOG 101A Physical Geography*—4 Cr. Hrs. – 5 Contact Hrs. (5 hours Integrated Lecture and Lab) Physical Geography is a course study in Earth Systems Science; the atmosphere, hydrosphere, and surface features of the lithosphere. The course work focuses on the development of geographic models and their use as a tool to explain phenomena in man’s physical environment.

GEOG 102C Cultural Geography*—4 Cr. Hrs. – 4 Contact Hrs. A study of the world’s people and how they occupy the earth. Important topics include: population density and distribution, languages, religions, political systems and international relations, economic systems, and urbanization.

GEOG 105 World Regional Geography*—3 Cr. Hrs. – 3 Contact Hrs. World regional geography is an introductory examination of the major cultural realms of the world—areas which share similar cultural and economic conditions. The physical environment and human impact on that environment will also be studied for each region. Units of study may include: Anglo-America, Europe, Russia and her neighbors, sub-Saharan Africa, North Africa/Southwest Asia, Monsoon Asia, East Asia, and middle and South America. A previous course in physical or human geography would be helpful, but is not mandatory.
GEOG 215 Introduction to Weather and Climate—4 Cr. Hrs. – 5 Contact Hrs. (5 Hrs. Integrated Lecture and Lab). This course is an introductory study of the atmosphere which includes both weather and climate. Fundamental physical laws governing weather elements will be examined; such as solar radiation, temperature, moisture, pressure, winds, and weather systems. Current weather data is delivered via the internet, which is coordinated with learning activities. Students will be introduced to the excitement of weather in near real-time. Broad aspects of climates and local microclimatology will also be integrated. An optional field trip to the National Weather Service Office, Grand Rapids may be offered. No prerequisites, although physical geography and the knowledge of basic computer skills including the ability to manipulate images are recommended.

*Denotes course that contains an International Component

GEOLOGY

GEOL 101A Introduction to Physical Geology—4 Credit Hrs. – 5 Contact Hrs. (5 hrs. integrated lecture and lab.) Physical geology is the scientific study of the materials, structures and systems of the planet Earth. Students will investigate the processes affecting the interior and exterior of the Earth, and the rocks, minerals, and structures produced by these processes. The course may include a one-day weekend field trip, weather permitting.

GEOL 102 Introduction to Earth History—4 Credit Hrs. – 5 Contact Hrs. (5 hrs. integrated lecture and lab.) GEOL 101 is not a prerequisite for GEOL 102. This course is an introduction to the geologic history of the planet Earth and its life forms. Based on the unifying theories of plate tectonics and organic evolution, the course presents the evidence used by geologists to reconstruct Earth’s ancient environments and organisms, and establishes connections between Earth’s past and present environments. The course may include a one-day weekend field trip, weather permitting.

GERMAN

(SEE FOREIGN LANGUAGES)

GRAPHIC DESIGN

GR 110 Introduction to Graphic Reproduction—3 Cr. Hrs. – 6 Contact Hrs. A lecture/lab course which will be an entry-level course for all graphic reproduction students. Work will be done in the areas of copy preparation, composition, production camera and offset press operation. The five major printing processes will be explored, with major emphasis placed on offset lithography.

GR 160 Digital Imaging—3 Cr. Hrs. – 6 Contact Hrs. Knowledge of digital imaging is vital to the printing industry because of the variety of media production systems available. Emphasis will be placed on creating quality output for diverse media applications.

GR 180DP Digital Photography—1 Cr. Hr. – 1 Contact Hr. Digital photography is finding its way into the publishing, industrial and business communities for use in newsletters, process documentation, and multimedia presentations. The student’s ability to interpret the image for its final use will be developed.

GR 180PR Photo Restoration—1 Cr. Hr. – 1 Contact Hr. Photo restoration will deal with restoring and preserving photos and drawings that have historical, social or personal value. The student’s ability to select, calibrate and use the proper software tools will be developed.

GR 180VC Vinyl Cutting—1 Cr. Hr. – 1 Contact Hr. Vinyl cutting and its associated hardware, software, substrates and its unique design considerations will be explored. Design considerations and applications will be emphasized to demonstrate mastery.

GR 180WF Wide Format—1 Cr. Hr. – 1 Contact Hr. Wide format printing will stress the design implications of large display and poster printing. Various substrates and orientations will be used depending on the applications.
GR 200 Principles of 35 mm B&W Photography—3 Cr. Hrs. – 6 Contact Hrs. Fundamentals of photography, including cameras, emulsion characteristics, processing, filters, chemistry, and optics. The student must have the use of a 35 mm SLR or view finder camera. The student will be expected to buy film and paper as directed by the instructor.

GR 220 Electronic Publishing—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: BUS 179 or a demonstrated keyboard proficiency. This course will explore several contemporary PC based publishing and creative software programs. The student will perform minimal keystroking of text and utilize existing word processing files as source files. Students will be expected to create and produce their own designs within certain parameters.

GR 270 Computer Imaging for the Printing Industry—3 Cr. Hrs. – 6 Contact Hrs. This course will explore the IBM PC computers, with their companion creative software, in the context of the printing industry. The selection of the appropriate computer, software and database, and the manipulation and editing of the image, will be prime components of this course.

GRD 107 Image Assembly—2 Cr. Hrs. – 4 Contact Hrs. Image Assembly is a lecture/laboratory course which will place major emphasis on precision hand work and correct interpretation of the job specifications as they relate to the assembly of film and electronic images. Extensive computer file manipulation will be stressed as well as page imposition. Contemporary preflighting and page imposition software will be used.

GRD 120 Introduction to Graphic Design—3 Cr. Hrs. – 6 Contact Hrs. Introduction, study and practice of basic Graphic design vocabulary, elements, and principles. Individual elements of design such as line, shape, value, texture, space, size and color will be integrated with design principles including balance, emphasis, rhythm and unity to analyze and create effective, organized, and attractive compositions and communications.

GRD 130 Drawing for Graphic Design—3 Cr. Hrs. – 6 Contact Hrs. Study and practice of basic graphic design drawing elements such as line, value, texture, composition, one and two-point perspective and color. Application of these elements in the process of developing concepts through the use of sketching/thumbs, roughs and comps with pencil, pen/ink and colored markers.

GRD 140 Introduction to Typography—3 Cr. Hrs. – 6 Contact Hrs. Introduction and study of history, vocabulary, and principles of typography. Basic type identification, styles, and measurement will be discussed and practiced. The primary purpose of type as a means communication combining readability and legibility will be reinforced. Design elements and principles will be presented in relation to designing with type.

GRD 150 Multimedia Production—3 Cr. Hrs. – 6 Contact Hrs. The student will use contemporary multimedia software and prepared files to create, storyboard, assemble and produce multimedia presentations. The fundamentals and terminology of “movie” production will be taught. Techniques in basic interactivity, presentations, animation, and commercial production, as well as preparing files for various kinds of output will be stressed. The student should have strong knowledge of the computer operating system, contemporary photo editing software and drawing software.

GRD 160 History of Graphic Design*—3 Cr. Hrs. – 3 Contact Hrs. This course will explore the evolution of graphic design and the features that distinguish one design from another. Applications will be identified and used to enhance logos, visual designs, and printed materials.

GRD 167 Introduction to Internet Animation—1 Cr. Hour - 1 Contact Hr. Prerequisite: CIS 100, CIS 110, or CIS 120A. This course provides students with hands on experience creating web-based animation using an animation editor. Topics include working with the various tools and objects available in the editor, creating and manipulating multi-layered graphics, working with animation frames and tweening, and publishing the graphics for use on the Internet.

(continued on next page)
GRD 290CI Production Practicum—3 Cr. Hrs. – Variable Contact Hrs. This is a capstone class. The purpose of this class is to give the student intense on-the-job experiences either in their area of interest or an area where they feel they would like further exposure that may not be available at the college.

HEALTH EDUCATION
(See Also Allied Health)

HE 100A Community First Aid and Safety —2 Cr. Hrs. – 2 Contact Hrs. Course is designed to prepare the general public with first aid knowledge and skills necessary to care for most injuries and emergencies, including First Aid, Adult, Child, and Infant CPR and AED. Accident prevention information is included. American Red Cross certification can be awarded upon satisfactory completion of 80% or better.

HE 102 Nutrition for Fitness and Sport—3 Cr. Hrs. – 3 Contact Hrs. A course designed to provide holistic health, and information to the individual who is physically active, or to those who desire to initiate a personalized fitness program. Required for individuals interested in Physical Education and Health Education majors.

HE 106 Concepts of Health and Well-being—3 Cr. Hrs. – 3 Contact Hrs. This class is designed to advance the student’s knowledge and to enhance their own health. An examination of national health priorities regarding the reduction of preventable death, disease and disability will be studied. Health related issues included are: substance abuse, stress reduction, grief and loss, development of healthy relationships, sexually transmitted diseases, lifestyle related diseases and principles of a healthy life-style.

HE 110 Industrial Safety and Workplace Training—1 Cr. Hr. – 2 Contact Hrs. Industrial Safety and Workplace Training is a first aid, prevention, and cardiopulmonary resuscitation (CPR/AED) program to prepare individuals to respond to injuries and sudden illnesses that may arise in the workplace. This course is designed to meet the specific training needs of employers and their employees. The course gives individuals in the workplace the knowledge and skills necessary to prevent, recognize and provide basic care for injuries and sudden illnesses until advanced medical personnel arrive and take over. Included are a review of basic safety laws (MIOSHA, OSHA, HAZMAT) and personal safety measures, which an employee can practice at home in preparation for work.

HE 202A Sports Injuries and Prevention—3 Cr. Hrs. – 4 Contact Hrs. A study of the basic fundamentals of sports injury care. The course includes the organization of and procedures for the prevention and taping of sports injuries. BIOL 105 is not required as a prerequisite but is strongly encouraged.

HE 220 Internship in Athletic Training—1 Cr. Hr. – 2 Contact Hrs. A 40 clock-hour internship in an area sports medicine clinic. This course will give prospective athletic trainers the opportunity to acquaint themselves with the advanced therapeutic modalities and rehabilitative exercise equipment not found in the smaller athletic training setting. It will also allow the student to observe differences (and similarities) between the clinical and collegiate training facilities.

HISTORY
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

HIST 101 Western Civilization to 1500*—4 Cr. Hrs. – 4 Contact Hrs. This course will examine the development of Western Civilization from pre-history to the High Middle Ages/Renaissance, investigating the legacies of the Neolithic Period, ancient Mesopotamia and Egypt, Greece, Rome, Islam and Medieval Europe. Topics will include political structures, artistic expressions, religious beliefs, and intellectual developments. Social history will be emphasized and the course may culminate with student participation in a Medieval Festival.

HIST 102 Western Civilization*—1500 to Present—4 Cr. Hrs. – 4 Contact Hrs. This course will investigate the development of modern Western Civilization covering the period from the Re-
naissance (about 1500) to the present, emphasizing the developments which have shaped the civilization of the 20th century in the West: government, economics, society, religion, philosophy, ethics, science, and the arts.

HIST 201 United States to 1877—3 Cr. Hrs. – 3 Contact Hrs. A course covering the history of the United States from its Native American and European origins to the end of Reconstruction. Major topics include the development of British colonial policy, the causes of the War for Independence, the formation of the Constitution and Bill of Rights, the development of democracy during the Jefferson and Jackson Administrations, immigration, industrial and urban history, Manifest Destiny and territorial expansion, the institution of slavery, the antebellum reform movement, the causes and consequence of the Civil War and Reconstruction.

HIST 202 United States from Reconstruction to Present*—3 Cr. Hrs. – 3 Contact Hrs. A study of the social, economic, political, and intellectual development of the American nation and people, from Reconstruction to the present. The major topics include: territorial expansion and American foreign policy; the growth and importance of industry and business; the urban community and its problems; trade-commerce fields; the urban community and its problems; industry and business; the struggle and achievement of labor; the study of immigration and race relations; the quest for women’s equality; American educational and cultural advances; the increased use of government to improve society; the Cold War, détente and current to developments in U.S. – World relations; and the transformation of American Political ideology.

HIST 204 Imperial and Soviet Russia 1622 to the Present*—3 Cr. Hrs. – 3 Contact Hrs. A course covering the reigns of Peter the Great, Catherine the Great and the later Romanovs; political, economic and social development in the 18th and 19th centuries; the Russian Revolution of 1917-21; the Five-Year Plans; Soviet foreign policy during World War II; Soviet policy after Stalin; Soviet society and culture to its collapse in 1991.

HIST 207 African American History—3 Cr. Hrs. – 3 Contact Hrs. A study of the dynamic role of Black people in the United States from their African origins to present day America. The course emphasizes significant Black contributions in American history, and selected achievements of African American women will be studied. Contemporary issues related to the African American experience in the U.S. will be researched. A visit to an African American historical site or event may be included in the course.

HIST 210 World History II: From 1500*—3 Cr. Hrs. – 3 Contact Hrs. This course deals with the non-western world from 1500 to the present. This course will treat the civilizations of the world excluding the European and U.S. (These latter two areas are treated in respectively HIST 101, 102, and 201 and 202.) The course will show the development of Africa, Asia, India, Central Asia, Malaysia, the Pacific Island nations, and Latin America from approximately 1500. While Europe has an impact on each of these areas, each area has a historical, political, economic, social, and cultural development independent of Europe. This course does not ignore the impact of European colonization, but attempts to see European colonization as only one aspect of ethnic and national development within each geographic area. European history will be touched upon only within this perspective of non western, indigenous development. This course provides a good basis of preparation for future K-12 teachers and for those who wish to go on to study international relations, comparative government and international business.

(continued on next page)
HIST 211 Michigan History—3 Cr. Hrs. – 3 Contact Hrs. A study of the social, economic, and political development of Michigan. Emphasis is on Michigan’s history since the time of French exploration. Major topics dealt with in the course include: American Indians; French exploration and settlement; Michigan under the British flag; “territoryhood” to statehood; Michigan’s role in the Civil War; lumbering and mining activity in the latter half of the 19th century, the development of Michigan’s automotive industry and the concurrent rise of industrial unionism in Michigan. Some emphasis will also be placed on Great Lakes history and the local history of the Muskegon area.

HIST 220 Labor Studies—3 Cr. Hrs. – 3 Contact Hrs. A survey course studying and critically analyzing the historical, political, and legal frameworks of the labor movement, major labor laws, causes and purposes of the labor movement, union structure and behavior, and labor-management approaches to solving employment disputes in the U.S. and internationally.

*Denotes course that contains an International Component.

HUMANITIES

Before enrolling in these courses, you must demonstrate that you are ready to succeed.

HUM 195 Introduction to Humanities*—3 Cr. Hrs. – 3 Contact Hrs. This course will provide the student with an awareness of the cultural strengths and weaknesses of our changing cybernetic society. The student will study how the performing and creative arts, philosophy, psychology, religion and applied technological impact on the individual as well as society. In both an historical and individual context, the student will learn that the understanding of what it means to be human is an art which can help facilitate the development of one’s full potential.

*Denotes course that contains an International Component.

MACHINING TECHNOLOGY

MT 101A Basic Machining—3 Cr. Hrs. – 5 Contact Hrs. This introductory course presents theory and hands-on experience in the practical application of machining. The course is structured for the student who has little or no previous experience in the field. The course introduces the student to industrial safety, precision measuring, common manufacturing materials, fasteners, and the operation of basic machine tools. These machine tools include the pedestal grinder, drill press, lathe, vertical milling machine, horizontal milling machine, and the surface grinder. CNC machining and other advanced metalworking methods will also be discussed.

MT 102 Intermediate Machining—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: MT 101A or permission of instructor. This course offers an in-depth examination of the machine tools commonly found in industry. The capabilities of drilling, turning, milling, and grinding machines will be explored as well as how these methods relate to advanced machining techniques and modern machine controls. A major focus of milling and turning will be experienced in the lab portion of this course. Each student will operate a CNC machine during the lab. The precision and quality that can be expected of these processes and their relationship to manufacturing will be stressed throughout the course.

MT 103 Advanced Machining—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: MT 101A or Instructor permission. This course will explore advanced machine tool operation and advanced grinding techniques. A major focus of grinding will be experienced in the lab portion of the course. Machines to be used in this class are: EDM, Surface Grinder, and Numerical Control Machine. Advanced operation of the Lathe, Mill, and Grinder will be discussed.

MT 205 NC/CNC (Numerical Control/Computer Numerical Control)—3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: MT 101A or permission of instructor. An introductory course in practical application of numerical control machining, and offline programming. Designed to expose students to
the basic concepts of numerical control with G and M codes.

**MT 206 2-D CAD/CAM Computer-Aided Design/Machining**—3 Cr. Hrs. – 5 Contact Hrs. Prerequisite: MT 205. Using Master CAM software, this class first explores the fundamentals of 2-D CAM systems. Students will learn to use the design package to create part drawings and simple solid models. Tool paths for these parts will be generated using the tool path module to create CNC program for the Lathe, Wire EDM, and Mill. Part processing will be covered and reviewed in detail for each program written.

**MT 216 3-D CAD/CAM Computer-Aided Design/Machining**—3 Cr. Hrs. – 5 Contact Hrs. Prerequisite: MT 206. This class continues the study of CAM into the realm of complex 3-D machining. Various complex surfaces will be designed, programmed, and machined. 3-D CNC programs will be created for both the Mill and Wire EDM. 3-D part processing will be covered in detail for each program. The trimming of complex surfaces is stressed. Installation of third-party software and interfacing with CAD software will also be covered. Students will also learn to create tooling and material libraries.

**MT 225 Moldmaking**—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: MT 206. In this course, the student will learn proper machining techniques and design considerations for manufacturing many different types of molds. The student will apply precision machining methods in the production of several molds used for the manufacturing of plastic components. Molds for many common molding processes will be explored including blow molding, compression molding, thermoforming, and injection molding.

**MT 230 Basic Diemaking**—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: MT 206. This course offers an overview of Diemaking for the machinist. Components of both punching dies and simple progressive dies will be explored. Students will apply their skills to both the manufacture of single stage punches and dies and routine punch repair processes. Primary learning will focus on precision grinding, machining, and material selection. The ram EDM machine will also be introduced.

**MT 235 Advanced Diemaking**—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: MT 216. This course continues the study of Diemaking which begins in MT 230. The student will study the manufacture of compound dies for both forming and punching. Both ram and wire EDM processes will be explored. Precision grinding and machining will be stressed throughout. Common die feeding mechanisms, die setting, and die safety will also be covered.

**MT 240 Basic Machine Repair**—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: MT 101. This course provides a general overview of various mechanical systems found in manufacturing equipment. Both preventive maintenance and repair skills are stressed. The systems examined are: basic mechanics and mechanical skills, lubrication systems, bearings, belt drives, chain drives, gears and gear systems, couplings, fluid power systems and variable speed drives. Troubleshooting techniques are stressed throughout the course.

**MT 245 Advanced Machine Repair**—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: MT 240. This course stresses preventive maintenance of the various mechanical systems found in the manufacturing environment. Both preventive and predictive maintenance will be explored in depth. This course culminates in the student preparing a computerized preventive maintenance plan for an actual manufacturing facility. Basic electronics will be covered as it relates to troubleshooting machine problems.

**MATERIALS TECHNOLOGY**

**MET 101 Industrial Materials**—3 Cr. Hrs. – 4 Contact Hrs. Industrial Materials is the study of the many materials which are used by modern industry, their basic similarities and differences, their physical, chemical, and electrical properties, and the ways in which materials are altered or combined to enhance their suitability for a specific industrial application.
MET 102 Basic Cast Metals—3 Cr. Hrs. – 5 Contact Hrs. Basic cast metals is an introductory study of the processes and methods of producing castings. The student will be introduced to patternmaking, finishing, and inspection. Laboratory tests of materials used in cast metals will be conducted. The student will be given an overview of cast metal manufacturing procedures. This course attempts to create a basic understanding and appreciation of the complexities of the cast metal industry.

MET 201 Metallurgy—3 Cr. Hrs. – 5 Contact Hrs. Metallurgy studies the physical, chemical, and electrical properties of metals and their alloys, as well as the effect on these properties of various mechanical and thermal treatments. The many indications of these properties and tests to establish their magnitude are also included.

MET 202 Advanced Materials—3 Cr. Hrs. – 5 Contact Hrs. Prerequisite: MET 101. Advanced Metals studies adhesives, ceramics, coatings, composites, lubrication, and other emerging materials used in manufacturing. A major emphasis is placed on the testing of material to determine properties, usability, and magnitude. Students must have access to transportation as this course also involves off-campus lab experiments.

MET 203 Materials Testing—3 Cr. Hrs. – 5 Contact Hrs. Prerequisite: MET 101. Conventional destructive and non-destructive testing and evaluation of materials. To detect and characterize flaws and microstructure changes in materials, using lab equipment and reporting the findings. Also, analysis of the relationship between externally applied forces and internal reactions in materials.

MET 204 Introduction to Plastics—3 Cr. Hrs. – 5 Contact Hrs. Prerequisite: MET 101. This course covers an introductory study of plastic materials, their applications, and the plastics industry. The students will be introduced to thermoplastics and thermosetting plastic materials, processing methods, applications, tooling, and plastic equipment.

MET 210 Pattern and Casting Design and Construction—3 Cr. Hrs. – 5 Contact Hrs. Prerequisite: MET 102. Introduction to the fundamental of functional, metallurgical and economic designs of castings and patterns. Students will interpret drawings related to the casting and patterns and do layout and measurements. Students will design and build a pattern, pour the casting and evaluate the design. This course is utilized in the patternmaking apprentice program.

MET 211 Gating and Riser—3 Cr. Hrs. – 5 Contact Hrs. Prerequisite: MET 102. A course dealing with the principles of gating and risering, solidification and heat transfer as related to casting. Gating ratios, metal velocity, and flow rates will be calculated. The function of risers, their design, location, and shape will be studied. The student will design, construct, mold and pour typical gating and risering systems. Data gained through actual design and pouring will be gathered and interpreted.

MANAGEMENT (SEE BUSINESS)

MARKETING (SEE BUSINESS)

MASSAGE THERAPY

MSTH 100 Introduction to Massage Therapy—1 Cr. Hr. – 1 Contact Hr. Prerequisite: This course is the prerequisite to the one year massage therapy program at Muskegon Community College. It is designed to give the student insight into the massage therapy profession. It offers the student a basic overview including the environments of massage, the ethics of massage, the types of massage, and the effects of massage. A basic flow of soft tissue manipulation is also covered. Each student must provide one set of twin size flannel sheets, along with one extra firm pillow for this course. Tables will be provided.

MSTH 110 Massage I—4 Cr. Hrs. – 6 Contact Hrs. Prerequisite: MSTH 100. This is the first of the cornerstone courses of the one-year massage therapy program. These cornerstone courses are designed to provide instruction in diagnostic/therapeutic techniques generally expected of an entry level practitioner. Each student must provide one set of twin size flannel sheets for this course. Tables
MSTH 111A Bodywork Pathology — 4 Cr. Hrs. – 5 Contact Hrs. Prerequisite: MSTH 100. This is one of the three basic life science courses in the one-year massage therapy program. This course will run concurrently with BIOL 105, an anatomy and physiology course for health care practitioners. MSTH 111 will cover the definition and/or identification and description of the pathologies of the human body that are commonly encountered in massage therapy and bodywork practice.

MSTH 120 Massage II — 4 Cr. Hrs. – 6 Contact Hrs. Prerequisite: MSTH 110. This is the second of the cornerstone courses of the one year massage therapy program. The cornerstone courses are designed to provide instruction in diagnostic and therapeutic techniques generally expected of an entry-level massage practitioner. Each student must provide one set of twin size flannel sheets, along with one extra firm pillow for this course. Tables will be provided.

MSTH 121 Bodywork Career Guide — 2 Cr. Hrs. – 2 Contact Hrs. Prerequisite: MSTH 110. This course is designed to help the student turn hands-on skills into lifelong success. Topics include the nuts and bolts of the massage business, touch and the law, using space efficiently and effectively, charting, scheduling, fee setting, and other information to help the student launch a successful career as a massage practitioner.

MSTH 122 Clinical I — 2 Cr. Hrs. – 4 Contact Hrs. Prerequisite: MSTH 110. This is the first of the clinical/fieldwork courses in the one year massage therapy program. During this course, the student will be giving massages to the general public. Included in this course will be the taking of patient histories, assessing treatment plans, integrating massage techniques learned in Massage I into specific and appropriate session flow patterns. Each student must provide four sets of twin size flannel sheets on site each day for this course. Each student must also purchase and wear a uniform (polo shirt and pants) for about $40. Tables will be provided on site, but students must purchase a table ($300-400) for use off-site.

MSTH 130 Massage III — 2 Cr. Hrs. – 3 Contact Hrs. Prerequisite: MSTH 120. This is the third of the cornerstone courses of the massage therapy program. The cornerstone courses are designed to provide instruction in diagnostic and therapeutic techniques generally expected of an entry-level massage practitioner. Each student must provide one set of twin size flannel sheets for this course. Tables will be provided.

MSTH 131 Bodywork Seminar — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: MSTH 120. This course is designed to expose the student to a greater variety of bodywork approaches and disciplines. Guest speakers from different bodywork disciplines will be invited to give one-hour presentations, followed by discussion and demonstrations. Also, one of the last days of this course will be dedicated to preparing for the NCBTMB exam.

MSTH 132 Clinical II — 1 Cr. Hr. – 2 Contact Hrs. Prerequisite: MSTH 120. This is the second of the clinical/fieldwork courses in this massage therapy program. During this course, the student will be giving massages to the general public. Included in this course will be the taking of patient histories, assessing treatment plans, integrating massage techniques learned in Massage I and Massage II into specific and appropriate session flow patterns. Each student must provide four sets of twin size flannel sheets for this course. Tables will be provided.
MATHEMATICS  
(Includes CS Center courses)

Students MUST take the Math Placement Test. Test results will help place students into the appropriate math course.

Before enrolling in math courses numbered MATH 050 or above, you must demonstrate that you are ready to succeed.

MATH 035 —0.5 Cr. Hrs. per module—Variable Contact Hrs. Co-requisite: Math Lab. This course offers students an opportunity to improve their basic math skills in the following seven modules:

Module A - Pre-Algebra — 0.5 Cr.
Module B - Fractions — 0.5 Cr.
Module C - Decimals — 0.5 Cr.
Module D - Percents & Percentages — 0.5 Cr.
Module E - Units of Measurement — 0.5 Cr.
Module F - Metrics — 0.5 Cr.
Module G - Ratios, Proportions, & Averages — 0.5 Cr.

MATH 036A Basic Math and Pre-Algebra —3 Cr. Hrs. — 3 Contact Hrs. This course offers students an opportunity to improve their basic math skills. The material covered is the same as is covered in the seven MATH 035 modules. (This course satisfies the nursing prerequisite when the required proficiency is demonstrated.)

MATH 040 Beginning Algebra —4 Cr. Hrs. — 4 Contact Hrs. Prerequisite: Assignment by Math Placement Test or must have earned a grade of “C” or better in MATH 036. An introductory course for students who have not successfully passed a high school algebra course, or who have lost their facility with algebra as time has passed. Fractions, signed numbers, and order of operations are reviewed. Variables and equation solving are introduced, along with exponents, polynomials, factoring, rational expressions and equations, graphing, and application problems.

MATH 050 Intermediate Algebra —4 Cr. Hrs. — 4 Contact Hrs. Prerequisite: Assignment by Math Placement Test or must have earned a grade of “C” or better in MATH 040. A second course in algebra in which concepts developed in Math 040 are studied in more depth and more advanced topics are introduced. New topics include fractional exponents, radicals, methods for solving quadratic equations, systems of equations with two and three unknowns, functional notations, logarithmic and exponential functions, and application problems.

MATH 105 Mathematics for Elementary Teachers —4 Cr. Hrs. — 4 Contact Hrs. Prerequisite: Assignment by Math Placement Test or must have earned a grade of “C” or better in MATH 050. Not a “methods” course. A general course for students majoring in elementary education. The basic ideas behind our number system and geometric concepts are discussed. Topics include: problem solving, sets, system of numeration, the real number system, geometry, and metric measure.

MATH 107 Mathematical Excursions —4 Cr. Hrs. — 4 Contact Hrs. Prerequisite: Assignment by Math Placement Test or must have earned a grade of “C” or better in MATH 040. A survey of mathematics intended for students whose program of study has no further mathematics requirements. Its purpose is to develop mathematical literacy in today’s world. This course satisfies the general education requirements for mathematics. Topics are selected from finance mathematics, scheduling, logic, geometry, decision making, patterns and art, modeling, and applications.

MATH 109 College Algebra with Applications —4 Cr. Hrs. — 4 Contact Hrs. Prerequisites: Assignment by Math Placement Test or must have earned a grade of “C” or better in MATH 050. A college algebra course stressing applications and graphing in the following areas: the process of creating a mathematical model of a real life situation, linear,
quadratic, periodic, exponential and logarithmic models; mathematics of finance; selected topics in probability. TI-83 graphing calculator required.

MATH 111 Algebra With Coordinate Geometry—4 Cr. Hrs. – 4 Contact Hrs. Prerequisites: Assignment by Math Placement Test or must have earned a grade of “C” or better in MATH 050. Pre-calculus algebra and analytic geometry designed for the student who will be taking calculus. Topics include: solving equations and inequalities algebraically and graphically; functions and graphs; polynomial functions; rational functions and functions involving radicals; exponential and logarithmic functions; linear systems and matrices. Graphing calculator required (TI-86 or higher recommended).

MATH 112 Trigonometric Functions with Coordinate Geometry—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Assignment by Math Placement Test or must have earned a grade of “C” or better in MATH 111. Pre-calculus trigonometry and analytic geometry designed for the student who will be taking calculus. Topics include: trigonometric functions, identities and equations, graphs of trigonometric functions and their inverse functions, solution of triangles, sequences and series, polar coordinates, parametric equations, DeMoivre’s Theorem, binomial theorem, mathematical induction, and conic sections. Graphing calculator required (TI-86 or higher recommended).

MATH 115 Probability and Statistics—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: Assignment by Math Placement Test, or two years of beginning and intermediate algebra, or must have earned a grade of “C” or better in MATH 050. Probability and statistics for business, social science, mathematics, and biological science majors. Topics include: descriptive statistics, probability, probability distributions, confidence intervals, hypothesis testing, analysis of variance, regression, and non-parametric statistics. Graphing calculator required (TI-83 or higher recommended).

MATH 151 Survey of Calculus—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Assignment by Math Placement Test, or two years of beginning and intermediate algebra, or must have earned a grade of “C” or better in MATH 050. The study of limits, continuous functions, derivatives, integrals, and their applications in business, economics, life sciences and social sciences. This is a terminal, one-semester course and should not be elected by those taking the calculus sequence of MATH 161, 162, 283 and 295. Graphing calculator required (TI-86 or higher recommended).

MATH 161 Calculus I—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Assignment by Math Placement Test, or must have earned a grade of “C” or better in MATH 112. The calculus of elementary functions of one variable. Topics include: definition of a derivative, limits, derivatives and integrals of functions of one variable, related rates, maxima and minima, Rolle’s Theorem, the Mean Value Theorem, and the Fundamental Theorem of Calculus. Graphing calculator required (TI-86 or higher recommended).

MATH 162 Calculus II—3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: Must have earned a grade of “C” or better in MATH 161. Recommended corequisite: MATH 274 if required for transfer. A continuation of the calculus of functions of one variable. Topics include: methods of integration such as substitution, parts, trigonometric substitution and partial fractions; improper integrals; applications of integrals to area, volume, and arc length; an introduction to differential equations; and infinite series. Graphing calculator required (TI-86 or higher recommended).

MATH 215 Probability & Statistics for Engineering—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: Must have earned a grade of “C” or better in MATH 161. This is a calculus-based statistics course. However, no previous statistics experience is required. Topics include: descriptive statistics, probability, discrete and continuous probability distributions, joint probability distributions, confidence intervals, hypothesis testing, analysis of variance, correlation and linear regression, non-parametric techniques, and quality control methods. Graphing calculator required (TI-86 or higher recommended).
MATH 274 Linear Algebra & Matrices—2 Cr. Hrs. – 2 Contact Hrs. Prerequisite: Must have earned a grade of “C” or better in MATH 161. Co-requisite: MATH 162 if required for transfer. A study of matrices, matrix operations, systems of linear equations, determinants, vectors, vector operations, vector spaces, eigenvalues and linear transformations. Graphing calculator required (TI-86 or higher recommended).

MATH 283 Calculus III—4 Cr. Hrs. – 4 Contact Hrs. Prerequisites: Must have earned a grade of “C” or better in MATH 162. The calculus of functions of more than one variable. Topics include: vectors, vector functions, surfaces, limits and continuity in 3 dimensions, partial derivatives, chain rule for partial derivatives, multiple integrals, line integrals, surface integrals, and vector calculus. Graphing calculator required (TI-86 or higher recommended).

MATH 295 Differential Equations with Linear Algebra—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: Must have earned a grade of “C” or better in MATH 162 and MATH 274. An introduction to the theory and solution of ordinary differential equations. Topics included are: first order techniques with applications, second and higher methods including linear equations, power series, Laplace transforms and numerical methods. Application of techniques of linear algebra to systems of differential equations. Introduction to Fourier series and phase plane analysis. Introduction to C.A.S. Graphing calculator required (TI-86 or higher recommended).

MUSIC
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

MU 50-89 Remedial Applied Music—2 Cr. Hrs. – 2 Contact Hrs. The following courses are designed for students who do not meet the freshman performance proficiency level as determined by the faculty. Recommendation for participation in 100 numbered applied music courses will be made when the faculty feels that adequate advancement has been made by the student to perform at the level of a freshman music student.

MU 50, 51 Voice – 2 Cr. Hrs.
MU 52, 53 Piano – 2 Cr. Hrs.
MU 54, 55 Cornet (Trumpet) – 2 Cr. Hrs.
MU 56, 57 Clarinet – 2 Cr. Hrs.
MU 58, 59 Trombone – 2 Cr. Hrs.
MU 60, 61 Baritone (Euphonium) – 2 Cr. Hrs.
MU 62, 63 Tuba – 2 Cr. Hrs.
MU 64, 65 French Horn – 2 Cr. Hrs.
MU 66, 67 Flute – 2 Cr. Hrs.
MU 68, 69 Oboe (English Horn) – 2 Cr. Hrs.
MU 70, 71 Bassoon – 2 Cr. Hrs.
MU 72, 73 Saxophone – 2 Cr. Hrs.
MU 74, 75 Percussion – 2 Cr. Hrs.
MU 76, 77 Guitar – 2 Cr. Hrs.
MU 78, 79 Organ – 2 Cr. Hrs.
MU 80, 81 Harp – 2 Cr. Hrs.
MU 82, 83 Violin – 2 Cr. Hrs.
MU 84, 85 Viola – 2 Cr. Hrs.
MU 86, 87 Cello – 2 Cr. Hrs.
MU 88, 89 Double Bass – 2 Cr. Hrs.

MU 100 Introduction to Music Theory—3 Cr. Hrs. – 3 Contact Hrs. Designed for students with little or no theoretical background who are considering music as their major field, or high school seniors who do not have access to a high school theory course. Includes fundamentals to basic musicianship: notation, clefs, scales, intervals, triads, rhythm, meter and tonality.

MU 101 Music Theory—3 Cr. Hrs. – 3 Contact Hrs. Co-requisite: MU 190A and MU 194. Fundamentals of basic musicianship, including notation, clefs, scales, intervals, triads, meter, rhythm and tonality. The analysis and writing of harmony in the styles of composers of the tonal period will be stressed.
MU 102 Music Theory — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: MU 101 and MU 190A. Corequisites: MU 191A and MU 195. A continuation of MU 101.

MU 103 Introduction to Music Literature* — 3 Cr. Hrs. – 3 Contact Hrs. A first course in listening to music designed primarily for students with little or no musical training. Starting with the basic elements of music, the course uses extensive audio and visual materials, illustrating the development of music through the ages.

MU 104CS College Singers — 1 Cr. Hr. – 2 Contact Hrs. This is a performance ensemble for students with previous musical experience. Auditions will be held at the first class session for placement within the group and to verify that the student and ensemble are a reasonable match. High standards of musical performance are upheld. There are performances held throughout the year for student and adult audiences.

MU 105CS College Singers — 1 Cr. Hr. – 2 Contact Hrs. An extension of MU 104CS.

MU 108CB Concert Band (West Michigan Winds) — 1 Cr. Hr. – 2 Contact Hrs. This is a performance ensemble for students with previous musical experience. Auditions will be held at the first class session for placement within the group and to verify that the student and ensemble are a reasonable match. High standards of musical performance are upheld. There are performances held throughout the year for student and adult audiences.

MU 109CB Concert Band (West Michigan Winds) — 1 Cr. Hr. – 2 Contact Hrs. An extension of MU 108CB.

MU 110 Stage Band — 1 Cr. Hr. – 3 Contact Hrs. This organization is open to all students. Membership will be determined by audition prior to enrollment. Frequent public performances will be held. Work in improvisation and arranging will be encouraged.

MU 111 Stage Band — 1 Cr. Hr. – 3 Contact Hrs. An extension of MU 110.

MU 112 Woodwind Ensemble — 1 Cr. Hr. – 2 Contact Hrs. Prerequisite: Consultation with instructor.

MU 116 Percussion Ensemble — 1 Cr. Hr. – 2 Contact Hrs. Prerequisite: Consultation with instructor.

MU 117 Percussion Ensemble — 1 Cr. Hr. – 2 Contact Hrs. A continuation of MU 116.

MU 118WSO West Shore Symphony Orchestra — 1 Cr. Hr. – 2 Contact Hrs. Students who play in the West Shore Symphony Orchestra may receive college ensemble credit. Audition and consent of director determine participation.

MU 118YSO West Shore Youth Symphony — 1 Cr. Hr. – 2 Contact Hrs. Students who play in the West Shore Youth Symphony may receive college ensemble credit. This is a performance ensemble for students with previous musical experience. Auditions will be held at the first class session for placement within the group and to verify that the student and ensemble are a reasonable match.

MU 119A or B Symphonic Ensemble — 1 Cr. Hr. – Variable Contact Hrs. A continuation of MU 118WSO or 118YSO.

MU 127 to 147 Applied Music—Secondary Instrument — 1 Cr. Hr. – Variable Contact Hrs. Private study on an instrument. The student must meet with a private instructor a specified number of hours. Attendance at studio class may be required and performance is encouraged. Letters A, B, C, D, after number indicate semesters so that the correct number of credits will be shown on transcript.

MU 127-A, B, C, D Jazz Guitar — 1 Cr. Hr.

MU 128-A, B, C, D Voice — 1 Cr. Hr.

MU 129-A, B, C, D Piano — 1 Cr. Hr. (continued on next page)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MU 130-A</td>
<td>Cornet-Trumpet</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 131-A</td>
<td>Clarinet</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 132-A</td>
<td>Trombone</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 133-A</td>
<td>Baritone (Euphonium)</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 134-A</td>
<td>Tuba</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 135-A</td>
<td>French Horn</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 136-A</td>
<td>Flute</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 137-A</td>
<td>Oboe (English Horn)</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 138-A</td>
<td>Bassoon (Contra-Bassoon)</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 139-A</td>
<td>Saxophone</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 140-A</td>
<td>Piano</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 141-A</td>
<td>Guitar</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 142-A</td>
<td>Organ</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 143-A</td>
<td>Harp</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 144-A</td>
<td>Violin</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 145-A</td>
<td>Viola</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 146-A</td>
<td>Cello</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 147-A</td>
<td>Double Bass</td>
<td>1 Cr. Hr</td>
<td></td>
</tr>
<tr>
<td>MU 148</td>
<td>Applied Music – Primary Instrument</td>
<td>2 Cr. Hrs</td>
<td>Variable</td>
</tr>
<tr>
<td>MU 149</td>
<td>Jazz Guitar</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 150</td>
<td>Voice</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 152</td>
<td>Piano</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 154</td>
<td>Cornet (Trumpet)</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 156</td>
<td>Clarinet</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 157</td>
<td>Trumpet</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 158</td>
<td>Trombone</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 160</td>
<td>Baritone (Euphonium)</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 162</td>
<td>Tuba</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 164</td>
<td>French Horn</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 166</td>
<td>Flute</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 168</td>
<td>Oboe (English Horn)</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 170</td>
<td>Bassoon (Contra-Bassoon)</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 172</td>
<td>Saxophone</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 174</td>
<td>Percussion</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 176</td>
<td>Guitar</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 178</td>
<td>Organ</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 180</td>
<td>Harp</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 182</td>
<td>Violin</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 184</td>
<td>Viola</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 186</td>
<td>Cello</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
<tr>
<td>MU 188</td>
<td>Double Bass</td>
<td>2 Cr. Hrs</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** There are several sections of class piano. Students with piano background should audition with instructor before enrolling.

MU 190A Classical Piano for Music Majors—2 Cr. Hrs. – 3 Contact Hrs. Co-requisites: MU 101 and MU 194. This course is required of all music majors and is open also to students with some previous keyboard experience who can use these transferable humanities credits or desire the training. Special emphasis is given to sight-reading, transposition, playing by ear, harmonizing melodies, accompaniments and scales.

MU 190B Classical Piano (Non-Music Majors) —2 Cr. Hrs. – 3 Contact Hrs. This course is open to any student who wishes to learn to play the piano. No previous training or knowledge of music is necessary.
MU 190C Classical Piano (Basic Piano) — 1 Cr. Hr. – 2 Contact Hrs. This course in basic piano is a required corequisite for students in MU 192 unless requirements can be met by examination. See instructor.

MU 191A Classical Piano (Music Majors) — 2 Cr. Hrs. – 3 Contact Hrs. Prerequisite: MU 190-A. A continuation of MU 190A.

MU 191B Classical Piano (Non-Music Majors) — 2 Cr. Hrs. – 3 Contact Hrs. Prerequisite: MU 190-B. A continuation of MU 190B.

MU 192 Music for the Classroom Teacher — 4 Cr. Hrs. – 4 Contact Hrs. Co-requisite: MU 190C, unless requirements can be met by examination. See instructor. This course is required for future elementary classroom teachers. No previous musical training is necessary. The course provides a background in the fundamental elements of music through singing, playing classroom rhythm and melody instruments, recorder and autoharp. Includes introduction to methods of teaching music, observation and participation in area schools.

MU 194 Sight-Reading and Ear Training — 1 Cr. Hr. – 2 Contact Hrs. Co-requisite: MU 101 and MU 190A. The acquisition of the skills of melodic and rhythmic sight-reading and the disciplining of the ear to reproduce melodies, harmonies and rhythms by dictation.

MU 195 Sight-Reading and Ear Training — 1 Cr. Hr. – 2 Contact Hrs. Prerequisite: MU 194. A continuation of MU 194.

MU 198 Introduction to MIDI (Musical Instrument Digital Interface) — 3 Cr. Hrs. – 3 Contact Hrs. An introductory course in the use and interface of synthesizers and computers. There are no prerequisites and students do not need to have a synthesizer or computer at home. Involves 2-4 lab hours per week.

MU 201 Advanced Theory — 4 Cr. Hrs. – 5 Contact Hrs. Prerequisite: MU 101 and MU 102. Co-requisite: MU 290. A continuation of Theory required of music majors. It combines the elements of counter-point, form analysis and 20th century practices with an emphasis on creative writing and arranging. Advanced sight-singing and melodic, harmonic, and rhythmic dictations are also stressed.

MU 202 Advanced Theory — 4 Cr. Hrs. – 5 Contact Hrs. Prerequisite: MU 201. Co-requisite: MU 291A. A continuation of MU 201.

MU 203 Vocal and Instrumental Conducting Techniques — 2 Cr. Hrs. – 2 Contact Hrs. Practical methods and conducting techniques for instrumental and vocal ensembles, with emphasis on rehearsal preparation, interpretation and performance, and basic communication between conductor and ensemble members.

MU 248 to 289 Applied Music - Advanced Instrument — 2 Cr. Hrs. – 2 Contact Hrs. Prerequisite: Two semesters of study on the same instrument at the 100-level. Private study of an instrument. The student must meet with private instructor a minimum of 13 hours per semester. Attendance and performance at studio is required. There is a staff audition at the end of each semester and a public recital at the end of the year.

MU 248, 249 Jazz Guitar — 2 Cr. Hrs.

MU 250, 251 Voice — 2 Cr. Hrs.

MU 252, 253 Piano — 2 Cr. Hrs.

MU 254, 255 Cornet (Trumpet) — 2 Cr. Hrs.

MU 256, 257 Clarinet — 2 Cr. Hrs.

MU 258, 259 Trombone — 2 Cr. Hrs.

MU 260, 261 Baritone (Euphonium) — 2 Cr. Hrs.

MU 262, 263 Tuba — 2 Cr. Hrs.

MU 264, 265 French Horn — 2 Cr. Hrs.

MU 266, 267 Flute — 2 Cr. Hrs.

MU 268, 269 Oboe (English Horn) — 2 Cr. Hrs. (continued on next page)
MU 270, 271 Bassoon (Contra-Bassoon) – 2 Cr. Hrs.

MU 272, 273 Saxophone – 2 Cr. Hrs.

MU 274, 275 Percussion – 2 Cr. Hrs.

MU 276, 277 Guitar – 2 Cr. Hrs.

MU 278, 279 Organ – 2 Cr. Hrs.

MU 280, 281 Harp – 2 Cr. Hrs.

MU 282, 283 Violin – 2 Cr. Hrs.

MU 284, 285 Viola – 2 Cr. Hrs.

MU 286, 287 Cello – 2 Cr. Hrs.

MU 288, 289 Double Bass – 2 Cr. Hrs.

MU 290 Classical Piano – 2 Cr. Hrs. – 3 Contact Hrs. Co-requisite: MU 201. A continuation of the freshman piano class plus the addition of clef and vocal score reading. Required of all music majors unless they are able to pass the requirements at the end of their freshman year.

MU 291 Classical Piano – 2 Cr. Hrs. – 3 Contact Hrs. Prerequisite: MU 290A. A continuation of MU 290A.

*Denotes a course that contains an International Component.

NURSING

A malpractice insurance fee, health status evaluation fee, and course fee are assessed for some of the following courses.

NUR 100 Overview of the Nursing Profession — 1 Cr. Hr. – 1 Contact Hr. Prerequisites: Entry level requirements. Co-requisites: NUR 111, COM 100, PSYC 201, BIOL 105, PEA 101A. This course is designed to provide students with an overview for a career in the profession of nursing. The focus of the course is on the roles and responsibilities of the licensed practical nurse and the registered nurse as members of the health care delivery team. Emphasis is placed on current issues and trends in nursing practice and education, and the derivation of medical terminology.

NUR 121 Environmental Stressors and Nutrition — 1 Cr. Hr. – 1 Contact Hr. Co-requisite: NUR 100. This course is designed to provide the student with the theoretical foundation for the clinical application of nutrition principles, in relation to stress adaptation, throughout the curriculum. The focus of the course is on the identification of the role of nutrients in maintaining man’s dynamic equilibrium and the use of therapeutic diets for clients.

NUR 123A Introduction to Nursing Practice — 3 Cr. Hrs. – 3 Contact Hrs. Prerequisites: NUR 100. Co-requisites: NUR 121, NUR 125, ENG 101. This course is designed to provide the student with a conceptual framework for nursing practice. The focus of the course is on the identification of fundamental principles and processes from the natural, behavioral and social sciences, and nursing essential for facilitating man’s stress adaptation. Concurrent laboratory practice enables the student to apply these principles and processes. Emphasis is placed on the nursing process, communication techniques, and basic nursing psychomotor skills with clinical experiences in community, screening, primary care, and acute care settings.

NUR 124A Care of the Childbearing Family — 4 Cr. Hrs. – 8 Contact Hrs. Prerequisite: NUR 123A. Co-requisites: NUR 121, NUR 125, ENG 101. This course is designed to provide the student with the theoretical foundation for facilitating stress adaptation related to childbearing. The focus of the course is on the application of previously learned
biopsychosocial and nursing principles and processes in the care of the childbearing family. Emphasis is placed on the identification of the changing priority of human needs in response to childbearing.

NUR 125 Basic Physical Assessment—1 Cr. Hr. – 1 Contact Hr. Prerequisites: NUR 100. Co-requisites: NUR 121, NUR 123A, NUR 124A. This course is designed to teach beginning nursing students the skills necessary to conduct the nursing health history and basic head-to-toe physical assessment on any healthy adult.

NUR 131B Care of the Childrearing Family—8 Cr. Hrs. – 16 Contact Hrs. Prerequisite: NUR 124A. Co-requisite: BIOL 106. This course is designed to provide the student with the theoretical foundation for facilitating stress adaptation related to childrearing. The focus of the course is on the application of previously learned biopsychosocial and nursing principles and processes in the care of the childrearing family. Emphasis is placed on the identification of the changing priority of human needs and adaptation problems associated with infancy through young adulthood in acute care settings.

NUR 141B Care of the Maturing Family—8 Cr. Hrs. – 16 Contact Hrs. Prerequisite: NUR 131B. Co-requisites: PHIL 204, PEA/DNC elective. This course is designed to provide the student with the theoretical foundation for facilitating stress adaptation related to adult maturation. The focus of the course is on the application of previously learned biopsychosocial and nursing principles and processes in the care of the maturing family. Emphasis is placed on the identification of the changing priority of human needs and medical adaptation problems associated with middle and late adulthood.

NUR 211A Care of the Family in Psychological Crisis—4 Cr. Hrs – 8 Contact Hrs. Prerequisite: NUR 212B. Co-requisite: ANTH 103. This course is designed to provide the student with the theoretical foundation for facilitating stress adaptation in clients/families in psychological crisis. The focus of the course is on the identification of biopsychosocial and nursing principles and processes used in the nursing of these individuals. Emphasis is placed on all components of the nursing process, therapeutic communication, and collaboration with team members in the care of psychiatric clients.

NUR 212B Care of the Family in Physiological Crisis—8 Cr. Hrs. – 16 Contact Hrs. Prerequisite: NUR 141B. Co-requisite: BIOL 207. This course is designed to provide the student with the theoretical foundation for facilitating man’s adaptation to multiple stressors in acute care settings. The focus of the course is on the identification and application of biopsychosocial and nursing principles and processes in the care of the family with acute, complex adaptation problems. Emphasis is placed on the application of all components of the nursing process, including use of advanced psychomotor skills, in the care of adults in physiological crisis.

NUR 222A Managing the Care of the Family—5 Cr. Hrs. – 11 Contact Hrs. Prerequisite: NUR 211A. Co-requisite: ANTH 103. This course is designed to provide the student with a theoretical foundation for managing the nursing care for groups of individual patients and their families. Previously learned biopsychosocial and nursing principles are integrated into the nurse manager role. Emphasis is placed on the use of management principles, the nursing process, trends in nursing, and transition into the registered nurse role.

OFFICE SYSTEMS EDUCATION (SEE BUSINESS)

PHILOSOPHY
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

PHIL 101 Basic Concepts of Philosophy—3 Cr. Hrs. – 3 Contact Hrs. A course which presents some of the issues, questions and problems of philosophy and quasi-philosophical thought, as these issues and thoughts are developed by traditional and contemporary philosophers.

(continued on next page)
PHIL 102 Principles of Logic—3 Cr. Hrs. – 3 Contact Hrs. A course which aims to give students an understanding of the fundamental forms of rational argument and critical reasoning skills that can be used in a wide range of disciplines and careers. There will be an examination of deductive and inductive reasoning, as well as formal and informal fallacies to facilitate the art of distinguishing correct from incorrect reasoning.

PHIL 104 Symbolic Logic—3 Cr. Hrs. – 3 Contact Hrs. No prerequisite. An introductory course in Symbolic Logic, the most powerful system of deductive logic yet devised. Includes propositional and predicate logic through identity with an emphasis on natural deduction. Particularly of value for those interested in computer science, mathematics, logic or philosophy.

PHIL 202 Introduction to Ethics*—3 Cr. Hrs. – 3 Contact Hrs. An inquiry into both the good of the individual person and the good of society. Two-thirds of the course presents logic and an in-depth analysis of such ethical theories as relativism, egoism, utilitarianism, deontology, virtue ethics, religion, and contractarianism. One-third of the course will examine a varying assortment of such applied ethical issues as euthanasia, abortion, distributive justice, sexual ethics, and environmental ethics.

PHIL 210 World Religions—3 Cr. Hrs. – 3 Contact Hrs. In this course the student will attempt to understand and critically analyze the world's major religions and how they impact societies and individuals. The religions covered are: Hinduism, Jainism, Buddhism, Taoism and Confucianism, Shinto, Judaism, Christianity, Islam and Sikhism. Other topics that may be covered are religious movements and the impact of religion on world culture and society, Native American religion.

PHIL 203 Philosophy of Religion*—3 Cr. Hrs. – 3 Contact Hrs. A brief comparative study of the history and content of major world religions followed by philosophical inquiry into the meaning, truth and value of religious phenomena.

PHIL 204 Biomedical Ethics*—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: ENG 101. An inquiry into many ethical problems which are particularly connected to the health care professions, but which are of concern to all persons. Issues studied include: individual responsibility in institutional settings, paternalism, patients’ rights, human experimentation, the right to die, abortion and the right to health care in the context of limited societal resources. About one-third of the course consists of a survey of those issues and results of ethical theory and logic which sharpen perception, reduce confusion and encourage headway. No prerequisite, but students who have completed Philosophy 202 will be assigned a special research project.

PHIL 205 Business Ethics*—3 Cr. Hrs. – 3 Contact Hrs. One-third of this course presents basic ethical theory and logic which together facilitate a deeper understanding of ethical problems. The second third covers those ethical problems that are apt to confront the business person directly and frequently. The final third of the course is an inquiry into broader ethical problems confronting business and society.

PHIL 206 Business Ethics—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: ENG 101. An inquiry into many ethical problems which are particularly connected to the health care professions, but which are of concern to all persons. Issues studied include: individual responsibility in institutional settings, paternalism, patients’ rights, human experimentation, the right to die, abortion and the right to health care in the context of limited societal resources. About one-third of the course consists of a survey of those issues and results of ethical theory and logic which sharpen perception, reduce confusion and encourage headway. No prerequisite, but students who have completed Philosophy 202 will be assigned a special research project.

*Denotes course that contains an International Component.

PHYSICAL EDUCATION—ACTIVITY/DANCE

Before enrolling in these courses, you must demonstrate that you are ready to succeed. See first page of course description section for complete details.

All Muskegon Community College Physical Education activity classes are co-ed; the strength and physical ability required should be carefully considered in registering for individual or team activities.

Students must take one credit hour from: PEA 101A, PEA 103, PEA 104A, PEA 118, or PEA 201 and one PEA/DNC credit hour of choice to satisfy graduation requirements.

All DNC classes may be taken as either Aesthetic Values credit or elective Physical Education credit. Any single course, however, will not satisfy both PEA and Aesthetic Values requirements.
Many classes are offered on the modular system (less than fifteen weeks) to take advantage of Michigan weather. Most modular classes are 7½ weeks. Check the schedule of classes for starting date. Classes meet in the gym for the initial meeting unless noted in the semester schedule.

Although it is still highly recommended, a physical examination is not mandatory for physical education activity classes. The physical education requirement may be waived by a medical excuse based on a physician’s signed statement. Where the physical education requirement has been waived, the student must still complete 62 credit hours to earn a degree.

Some courses require payment of a fee in addition to tuition. Please check the appropriate semester schedule for individual amounts.

**PHYSICAL EDUCATION-ACTIVITY**

**PEA 100B Yoga I**—1 Cr. Hr. – 2 Contact Hrs. Basic postures, nutrition, meditation and the psychological and philosophical principles of yoga will be studied. Breath control and focusing the mind are practiced throughout the course.

**PEA 101A Fitness, Wellness & Nutrition**—1 Cr. Hr. – 2 Contact Hrs. A study of the body functions as they relate to exercise, postural alignment, good nutrition and diet. Students will understand and experience factors important to the physical, psychological and social well-being of the individual. Individual physical fitness testing, exercise programs, leisure-time exploration and consumer skill development will be presented.

**PEA 103 Weight Training**—1 Cr. Hr. – 2 Contact Hrs. Weight training is a course which covers objectives, fundamental skills, safety suggestions and procedures to develop individual conditioning and weight training programs. Performance and written tests are given.

**PEA 104A Walking, Jogging and Conditioning**—1 Cr. Hr. – 2 Contact Hrs. A co-educational course designed for individuals interested in establishing a physical fitness program emphasizing the cardiovascular component. The class includes individually prepared programs of walking/jogging, flexibility and muscular endurance conditioning.

**PEA 105 Pocket Billiards**—1 Cr. Hr. – 2 Contact Hrs. This course is designed to teach the various games of pocket billiards. It will include rules, regulations, the fundamentals of the different games, and match play tactics and tournament competition.

**PEA 106 Leisure Games**—1 Cr. Hr. – 2 Contact Hrs. Explanation of rules, strategies and courtesies of table tennis, shuffleboard, badminton, table games and other appropriate lifetime activities. This class includes singles and doubles play.

**PEA 107 Archery**—1 Cr. Hr. – 2 Contact Hrs. Fundamental skills, techniques and rules of archery are practiced and studied, shooting 10-160 yards.

**PEA 108 Bowling**—1 Cr. Hr. – 2 Contact Hrs. This course includes history, rules, courtesies, fundamental skills, and team competition. (Fee)

**PEA 109 Sport Judo and Self-Defense**—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: Must be at least 14 years of age. The course will include a history of the sport, basic individual fundamentals, rules interpretation, courtesies and self-defense techniques.

**PEA 110 American Karate System I**—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: Must be at least 14 years of age. Course is designed to acquaint the student with the basics and history of karate. The beginning student will learn the proper stretching and warm-up exercises. Students will be instructed in the proper attitude and application of hand and foot techniques of the American Karate System.
PEA 111A Tae Kwon Do Ap Koobi*—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: Must be at least 14 years of age. Students will: practice the breathing, balance, rhythm, timing, and focus necessary to perform the basic blocks, punches, strikes, kicks, and turns from the front stance; transfer power through physics; translate spoken Korean protocol into English; learn the first Kee Cho form and the significance of the Korean flag; apply front stance controlled training and self-defense from wrist/hand grabs; begin to develop an awareness of one’s surroundings for safety issues.

PEA 112 Wrestling I—1 Cr. Hr. – 2 Contact Hrs. This course covers: history, explanation of rules and regulations, demonstration and practice of basic holds, rides and takedowns. Practical and written testing.

PEA 114 Golf I—1 Cr. Hr. – 2 Contact Hrs. Fundamentals, skills, strategies and rules of golf are practiced and studied. Practice on the driving range, putting green and actual play are included. Skill and written testing. (Fee)

PEA 116 Tennis I—1 Cr. Hr. – 2 Contact Hrs. This course includes the history, explanation of rules and regulations, practice of fundamental skills and class tournament competition. Skill and knowledge testing.

PEA 118 Cycling—1 Cr. Hr. – 2 Contact Hrs. This course is designed to introduce the individual to the activity of cycling. The class will include safety factors of cycling and a progressive cycling program. Fitness and written testing are included.

PEA 119 Alpine Skiing—1 Cr. Hr. – 2 Contact Hrs. This course is designed for those students interested in learning the fundamentals and techniques of downhill skiing and snowboarding. The class is open to students of varied abilities. Equipment will be furnished, but students will be responsible for providing their own transportation to the off-campus site. (Fee)

PEA 120 Nordic Skiing I—1 Cr. Hr. – 2 Contact Hrs. This is a course designed for those students interested in learning the fundamentals and techniques of cross country (Nordic) skiing. The class is open to students of varied abilities. Equipment can be rented, and students will be responsible for providing their own transportation to the off-campus site. (Fee)

PEA 130 Beginning Swimming—1 Cr. Hr. – 2 Contact Hrs. Course is designed for beginners and advanced beginners. Materials covered include: adapting to the water, basic strokes, including side stroke as well as front and back styles. Individual instruction in sequence as readiness occurs. American Red Cross certification is awarded upon satisfactory testing and completion.

PEA 131 Intermediate Swimming—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: PEA 130 or American Red Cross Beginners certificate or its equivalent. This course is designed for intermediate swimmers. Materials covered include: improving the five basic strokes, safety, and learning three new strokes. Individualized instruction in sequence as readiness occurs. American Red Cross certification is awarded upon satisfactory testing and completion.

PEA 133 Water Safety Instructor—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: Must be 16 years of age, take a pre-course written test on first day of class on Water Safety and pre-course skills test. The skills test includes: swim 50 yards of front crawl, back crawl, side stroke, breast stroke, and elementary back stroke; perform a standing front dive, long shallow dive, and surface dive; and perform elementary forms of rescue. Course covers review of the styles of swimming, teaching the styles, and observation and teaching. Upon successful completion of the course, water safety instructors are qualified to teach all levels of the American Red Cross Infant and Pre-school Aquatics Program, Levels I-VI in the Learn to Swim Program, Community Water Safety and the Water Safety Instructor Aid course. They will also have Fundamentals of Instructor Training. American Red Cross certification is awarded upon satisfactory testing and completion.
PEA 134A Lifeguard Training—1 Cr. Hr. – 3 Contact Hrs. Prerequisites: Be at least 15 years old. Swim 500 yards continuously: swim 200 yard in front crawl, 100 yards of breast stroke, 200 yards either front crawl or breast stroke. Swim 20 yards using front crawl or breast stroke and then surface dive to a depth of 7-10 feet, retrieve a 10-pound object and return to the surface and swim 20 yards back to the starting point with the object. This course focuses on Lifeguarding skills and knowledge needed to prevent and respond to aquatic emergencies. It prepares lifeguard candidates to recognize emergencies, respond quickly and effectively to emergencies and prevent drowning and other incidents. The course also teaches other skills and individual needs to become a professional lifeguard. American Red Cross certificates for Lifeguard Training, First Aid, CPR for Professional Rescuers, Waterfront Lifeguarding, Preventing Disease Transmission, Oxygen Administration, and AED Essentials are awarded upon satisfactory testing and completion.

PEA 137 Beginning Scuba—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: Be at least 15 years of age, able to swim and be reasonably comfortable in the water. To become a certified diver, the student must be able to perform the following: a 200 yard swim (no time limit) and a 10 minute float/treading water without aid of equipment. There are three sections a student must complete to become a “Certified diver:” classroom, pool and open water divers. This course covers the classroom and pool sessions. The purpose of this course is to provide students with the elemental knowledge and skills they need to safely gain experience in the diving environment. Students may participate in the Open Water Dives after successful completion of the course through Muskegon Community College or any PADI dive store (additional fee). A 75% or better is required on all written work for certification. All equipment is provided except mask, snorkel, fins and boots, which may be rented. (Fee)

PEA 139A Basic Canoeing/Kayaking—1 Cr. Hr. – 2 Contact Hrs. This course is designed for those students who wish to gain additional knowledge and skill in the sports of canoeing and kayaking. The course will cover the history, equipment design, regulations, skills and techniques involved in safe paddling in flat, open and swift water. For admittance into the course, the student must have swimming ability sufficient to enable him/her to maintain himself/herself in the water for ten minutes comfortably and calmly, with relaxation and gentle movements, while clothed in shirts, trousers and tennis shoes or the equivalent.

PEA 140 Principles of Sailing—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: American Red Cross Beginners Swimming Certificate or permission of instructor. A small boat sailing course that will include basic seamanship, water safety, boat care, including rigging, and elementary sailboat racing.

PEA 152 Softball—1 Cr. Hr. – 2 Contact Hrs. A course which covers skills, explanation of rules and regulations, demonstration and practice of basic skills. There will be practical and written testing.

PEA 153 Baseball I—1 Cr. Hr. – 2 Contact Hrs. This course is designed to cover the basic fundamental skills, rules and strategies of baseball. There will be practical skill and written tests on rules and basic fundamentals.

PEA 154A Volleyball I—1 Cr. Hr. – 2 Contact Hrs. The fundamental skills, rules, strategies and courtesies of power volleyball are practiced and studied. Written and skill testing are required.

PEA 155 Basketball I—1 Cr. Hr. – 2 Contact Hrs. This course includes: history, explanation of rules, basic individual fundamentals, offensive and defensive theory and testing of individual skills and knowledge.

PEA 156 Beach Volleyball—1 Cr. Hr. – 2 Contact Hrs. The fundamental skills, rules, strategies and courtesies of beach volleyball are practiced and studied. Opportunity to play, officiate and critique will be offered. Written and skill testing are required.

PEA 201 Aerobic Movement For Fitness—1 Cr. Hr. – 2 Contact Hrs. An introduction to aerobic fitness programs and routines. Students will learn simple aerobic routines including steps set to music, achieving better cardiovascular endurance, muscular strength, overall flexibility and individual fitness testing.
PEA 209 Sport Judo and Self Defense II*—1 Cr. Hr. – 2 Contact Hrs. Prerequisites: Students must have basic experience in some Martial art such as Judo, Jujutsu, Karate, Self Defense or other similar art. A Muskegon Community College physical card must be on file in the Physical Education Office prior to the beginning of participation in class. Sport Judo and Self Defense II (Jujutsu) will include advanced techniques enabling the student to become more skilled in Martial Arts such as KATA (forms) and SHIAI (competition).

PEA 210 American Karate System II*—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: PEA 110 or permission of instructor and be at least 14 years of age. Course includes a review of previous requirements. The major objectives of the class are to learn advanced karate techniques; tournament rules; develop confidence, coordination and character; prepare the student in officiating and the responsibility of teaching basic karate techniques.

PEA 211A Tae Kwon Do Dwit Koobi*—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: PEA 111A or permission of instructor and be at least 14 years of age. Students will: practice the breathing, balance, rhythm, timing, and focus necessary to perform the basic blocks, punches, strikes, kicks, and turns from the back stance; increase power through physics; translate spoken Korean numbers (8), stances (3), blocks (2), and kicks (3) into English; learn the first Pal Gwe form and its relationship to ancient Chinese philosophy; apply back-stance controlled training and self-defense from chokes and body grabs; begin to develop an awareness of one's habits for safety issues.

PEA 212 Wrestling II—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: PEA 112 or permission of instructor. This course is designed to teach wrestling in theory and practice. Specialized work at different levels to increase the standards of wrestling for coaches or physical educators will be emphasized. Students will have an opportunity to discover their own shortcomings and how to cope with them.

PEA 214 Golf II—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: PEA 114 or permission of instructor. This course is designed for those students who wish to play, teach or coach the game of golf. Normally considered to be for the intermediate and advanced student of golf. (Fee)

PEA 216 Tennis II—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: PEA 116 or permission of instructor. This course is designed for those students who wish to gain additional knowledge and skill for advanced play, teaching or coaching tennis.

PEA 220 Nordic Skiing II—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: PEA 120 or instructor permission. The technique and application of techniques for cross-country (Nordic) skiing with emphasis on refinement and execution at higher speeds (racing) built upon basic skills. Equipment can be rented and students will be responsible for providing their own transportation. (Fee)

PEA 237 Advanced Scuba —1 Cr. Hr. – 2 Contact Hrs. Prerequisite: Be at least 16 years of age and be certified as a PADI Open Water Diver or have an equivalent rating. There are three sections a student must complete to receive an “Advanced Plus Rating,” nine open water dives, medic first aid training, and advanced diving theory. This course includes classroom and open water dives. The purpose of this course is to provide students with advanced knowledge and specialized diver’s activities. PADI certification is awarded to those students who successfully complete all required dives and earn 75% or better on all written work. All equipment is provided for the class except mask, snorkel, fins and boots, which may be rented. (Fee)

PEA 253 Baseball II—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: PEA 153 or permission of instructor. The course will specialize in teaching the theory and practice of baseball. Work will be provided at different levels to increase knowledge and understanding of the game for coaches and teachers.

PEA 254A Volleyball II—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: PEA 154A or permission of instructor. This course includes the study of advanced individual skills and team strategies. Coaching techniques and officiating are emphasized. Outside team competition is offered. Practical skill tests and written exams.
PEA 255 Basketball II—1 Cr. Hr. – 2 Contact Hrs. Prerequisite: PEA 155 or permission of instructor. This course is designed for those students who wish to gain additional knowledge and skill which would be of value to those who wish to play, teach, officiate or coach the game of basketball.

* Denotes course that contains an International Component.

PHYSICAL EDUCATION-PROFESSIONAL

PEP 100 Foundations of Physical Education—2 Cr. Hrs. – 2 Contact Hrs. An orientation to the profession of physical education, its history, basic principles, relation to growth and mental health and vocational opportunities. This course is intended for all students who wish to major or minor in physical education and/or related fields.

PEP 201 Elementary Physical Education for the Classroom Teacher—2 Cr. Hrs. – 2 Contact Hrs. A theory and activity course designed to acquaint the prospective classroom teacher with planning and teaching his/her own physical education program. Concepts of program planning plus practical experience in teaching varied levels of physical education activities are included.

PEP 202 Teaching Procedures—2 Cr. Hrs. – 2 Contact Hrs. The contribution of physical education to education shown through methods and procedures. Unit and lesson plans, testing and grading will be covered. The course will include observations in local school systems.

PEP 203 Fundamentals of Coaching—3 Cr. Hrs. – 3 Contact Hrs. This course is designed for both experienced and novice coaches interested in understanding and/or improving their professional coaching skills. Topics to be covered include: philosophy, growth and development, sports safety training, psychology, litigation/liability and sports management. PACE (Program for Athletic Coaches’ Education) and American Red Cross Sports Safety Training, which includes adult CPR, certification is awarded upon successful completion (80% or better) for each emphasis in the course.

PHYSICAL SCIENCE

Before enrolling in these courses, you must demonstrate that you are ready to succeed.

PHSC 099 Contemporary Topics in the Physical Sciences—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: None. This is a beginning science course for students with limited previous background in the sciences. The approach is conceptual and contemporary with emphasis on skill building rather than subject content. These skills should enhance the chances of successfully completing the 100 level courses in the physical sciences. Topics will be taken from astronomy, chemistry, geology and physics.

PHSC 101A Introductory Physical Science Lecture and Lab—4 Cr. Hrs. – 6 Contact Hrs. Prerequisite: MATH 040. This is a course for non-science majors offering students a broad exposure to the physical sciences. The approach to this course is conceptual and contemporary, and includes topics from various physical sciences. Students will use both empirical and theoretical evidence to gain an understanding of the fundamental laws that govern the universe.

PHYSICS

Before enrolling in these courses, you must demonstrate that you are ready to succeed.

PHYS 105A Cosmology—4 Cr. Hrs. – 4 Contact Hrs. Prerequisites: MATH 050 or assignment by Math Placement Test. While Astronomy is concerned with the contents of the Universe, Cosmology is the science of the origin, current state and ultimate fate of the universe. In this course, the foundations of modern Cosmology are presented from a historical perspective, covering the physical fundamentals, the impact of Einstein’s Theories of relativity on modern cosmologies and finally from the perspective of the most recent astronomical discoveries.

(continued on next page)
PHYS 201 Principles of Physics L & L—4 Cr.
Hrs. – 6 Contact Hrs. (6 hour integrated lecture and lab.) (Engineering student—see Physics 203.) Prerequisites: MATH 112 or instructor permission. A course that develops, by means of lecture and laboratory experience, a basis for understanding the physical aspects of phenomenon classified as mechanics, heat, and waves (sound). This course is especially suitable for pre-professional students such as pre-med, pre-law, pre-dental, and life science and liberal arts majors.

PHYS 202 Principles of Physics L & L—4 Cr.
Hrs. – 6 Contact Hrs. (6 hours integrated lecture and lab.) Prerequisites: PHYS 201 or permission of instructor. A continuation of PHYS 201 which considers the physical aspects of phenomenon classified as magnetism, electricity, light, and nuclear physics. This course is especially suitable for pre-professional students such as pre-med, pre-law, pre-dental, and life science and liberal arts majors.

PHYS 203 Engineering Physics L & L—5 Cr.
Hrs. – 7 Contact Hrs. Prerequisite: MATH 161. A course designed for students majoring in engineering, mathematics or the physical sciences. Lectures, labs, demonstrations, discussions and problems on the principles of mechanics, sound, waves, heat and thermodynamics. Graphing calculator required (TI-85 or higher recommended).

PHYS 204 Engineering Physics L & L—5 Cr.
Hrs. – 7 Contact Hrs. Prerequisites: MATH 161 and PHYS 203, or permission of the instructor. A continuation of PHYS 203 which considers magnetism, electricity, light and modern physics. Graphing calculator required (TI-85 or higher recommended).

POLITICAL SCIENCE

Before enrolling in these courses, you must demonstrate that you are ready to succeed.

PSCI 111 Introduction to American Government—4 Cr. Hrs. – 4 Contact Hrs. A study of the structure and function of U.S. national, state, and local government emphasizing the basic rights and responsibilities of citizenship, as well as an introduction to basic forms and philosophies of government.

PSCI 112A Contemporary Issues in U.S. Public Administration—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: PSCI 111 or permission of instructor. A study of the administration of American government and the problems currently confronting it. Emphasis will be placed upon current and controversial problems of administration. An attempt will be made to include those areas meeting needs and interests of students.

PSCI 202 International Relations*—3 Cr. Hrs. – 3 Contact Hrs. This course examines political relationships worldwide. It will include the analysis of conflicts in the world, and how nations search for peace through the United Nations. Additional areas to be examined are international law, the World Trade Organization, the International Monetary Fund, the World Bank, currency exchange rates, the integration of trade blocs like the European Union, environmental pollution, and economic development.

PSCI 203 Readings In the History of Western Political Thought—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: PSCI 111 or permission of instructor. An introduction to the history of Western Political Thought from Plato to Nietzsche. The course will concentrate on the original texts which will be subjected to critical analysis. Major themes will be identified and examined in the light of the American democratic experience.

PSCI 205 Contemporary Political Issues in United States Government*—3 Cr. Hrs. – 3 Contact Hrs. An intensive study and critical analysis of contemporary political issues in U.S. Government involving issues that deal with some or all of the following: basic concepts of U.S. democracy, state-federal relationships, government finance, political interest groups, legislative powers, executive powers, judicial powers, civil rights, civil liberties, and international relations.

PSCI 210 International Organizations*—1 Cr. Hr. – 1 Contact Hr. This course concentrates on the objectives, functions and structure of selected international organizations. Potential organizations
include but are not limited to: United Nations, Arab League, North Atlantic Treaty Organization, Organization of African Unity. International Organizations study will prepare and provide students an opportunity to participate in an off campus conference featuring simulations of a selected organization.

PSCI 211 Comparative Government*—3 Cr. Hrs. – 3 Contact Hrs. This course will compare governments in various European, American, Asian, and African states. Students will examine political, cultural, economic, and historical reasons for similarities and differences between nations. The United States will be used as a model for comparison.

PSCI 220 Labor Studies—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: PSCI 111 or permission of instructor. A survey course studying and critically analyzing the historical, political, and legal frameworks of the labor movement, major labor laws, causes and purposes of the labor movement, union structure and behavior, and labor-management approaches to solving employment disputes in the U.S. and internationally.

*Denotes course that contains an International Component.

PSYCHOLOGY
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

PSYC 102 Applied Psychology—3 Cr. Hrs. – 3 Contact Hrs. This course stresses the useful, relevant application of psychological knowledge and research to everyday life. A variety of perspectives will be used to apply the principles, discoveries and theories of psychology in practical ways.

PSYC 201 General Psychology—4 Cr. Hrs. – 4 Contact Hrs. This course provides an academic survey of research methods and statistics, and in-depth study of neuroscience, development, learning/ memory, sensation/perception, states of consciousness, motivation/emotion, stress/health, disorders/therapy, and social psychology. It is especially recommended for those who plan to continue their education beyond the associate degree level.

PSYC 202 Educational Psychology—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: A grade of “C” or better in PSYC 201, or permission of instructor. This course explores interrelationships between the fields of psychology and education. Research data, learning theories, cultural pluralism and special topics reflective of current educational change are examined. Particular interests in educational psychology at specific age/grade levels may be pursued in depth. Forty-five (45) hours of classroom experience in the public/private schools will be required. Exceptions to be approved by the instructor.

PSYC 203 Abnormal Psychology — 4 Cr. Hrs. — 4 Contact Hrs. Prerequisite: A grade of “C” or better in PSYC 201 or permission of instructor. This course is designed as a sequel to General Psychology. Students will examine the origins of mental illness using biological, psychodynamic, behavioral, cognitive, humanistic-existential, and socio-cultural perspectives. They will study the biomedical and psychologically-based interventions used in the treatment of maladaptive behavior, and the community-based prevention measures and treatment efforts used to promote mental health.

PSYC 205A Developmental Disabilities & the Exceptional Child—4 Cr. Hrs. – 4 Contact Hrs. Prerequisite: A grade of “C” or better in PSYC 201, or permission of instructor. The course is an introduction to the study of the psychology of exceptional children. Classification of exceptionality, causal factors, treatment and prevention are studied. The course is especially relevant to parents and caregivers of exceptional children, and to those considering professions or careers in psychology, education or special education, childcare or treatment, social work and nursing.
READING

RDG 040A Essential Reading Skills—1 Cr. Hr. – Variable Contact Hrs. Co-requisite: RDG 001 Day or Evening Lab. For students reading below 10th grade level. Includes word attack, prefixes-suffixes, vocabulary, reading for the main idea, and finding supporting details. Course includes individualized weekly assignments and private instruction. Additional lab time is required.

RDG 040C Essential Reading Skills—3 Cr. Hrs. – 3 Contact Hrs. This course is for students scoring below 10th grade level on the Nelson-Denny Reading Test. Includes prefixes, suffixes, vocabulary, reading for the main idea, and identifying supporting details. Course includes weekly assignments, some one-on-one and small group instruction. Additional lab time is required.

RDG 040E Reading and Succeeding in College —1 Cr. Hr. – Variable Contact Hrs. Prerequisite: RDG 040A or RDG 040C. Co-requisite: Enrollment in a class which requires a textbook and has an instructor lecture and RDG 001 Day or Evening Lab. This course is designed for at-risk students who have completed RDG 040A or RDG 040C but have not reached 10th grade reading level on the Nelson-Denny Reading Test and, consequently, are not ready for RDG 134A, RDG 134B, or RDG 134C. Students will learn time management, concentration strategies, reading strategies, how to read and study a textbook assignment, how to take lecture notes, and how to study for tests. Additional lab time is required.

RDG 134A Vocabulary/Spelling—1 Cr. Hr. – Variable Contact Hrs. Co-requisite: RDG 001 Day or Evening Lab. Builds a practical college-level vocabulary by teaching Greek and Latin etymology, dictionary skills, vocabulary memory devices and use of context. Additional lab time is required.

RDG 134B Comprehension/Speed—1 Cr. Hr. – Variable Contact Hrs. Co-requisite: RDG 001 Day or Evening Lab. Improves reading speed and develops comprehension of main ideas and details. Additional lab time is required.

RDG 134C Study Skills/Test Taking—1 Cr. Hr. – Variable Contact Hrs. Co-requisite: RDG 001 Day or Evening Lab. Teaches time management, concentration, memory improvement, note taking, test taking, text-study, and college library skills. Note: We recommend that students taking RDG 134C also take at least one lecture-type college course during that semester. Additional lab time is required.

REAL ESTATE

RE 101 Real Estate I—3 Cr. Hrs. – 3 Contact Hrs. This course provides background information for the State Real Estate Salesperson’s examination. The course is designed for real estate sales people and those interested in entering the real estate profession. Content includes economics, legal aspects, nature of real property, ownership, and property rights. Several certified professional realtors are used as resource persons for key subject areas.

RECREATION

REC 111 Introduction to Recreation and Leisure*—3 Cr. Hrs. – 3 Contact Hrs. An examination of the history and development of the park and recreation movement; sociological, economical, psychological and political consideration of leisure and recreation in contemporary societies; professional and service organizations and their interrelationships; and orientation to the professional field.

REC 122 Leadership in Recreation—2 Cr. Hrs. – 2 Contact Hrs. This course is designed to acquaint the student with fundamental knowledge of leadership and group functioning. It presents, among several related aspects, the development of leadership study, characteristics of group functioning, and selected supervision topics such as delegation and evaluation. Some questions to be considered are: What determines leadership effectiveness? What influence does the situational environment have on leader behavior? What contributes to group cohesion and stability? What leadership roles present difficulty to the recreation and leisure service practitioner? What factors motivate subordinate work behavior?
**REC 123 Recreation and Leisure Programming**—2 Cr. Hrs. – 2 Contact Hrs. This course is designed to provide the student with an understanding of recreation programming as it relates to a variety of settings, situations and people. Emphasis will be placed on the concepts and processes of organizing, conducting and evaluating programs.

**REC 211-214 Field Study in Recreation Leadership**—1-4 Cr. Hrs. – Variable Contact Hrs. Prerequisites: REC 111, REC 122, and REC 123. An in-depth experience in the field(s) of private, agency, or municipal recreation and parks (to include community school programs) primarily for recreation majors and minors. Students will meet several times prior to their field study experience with the college coordinator. REC 211/1 credit - 60 hours; REC 212/2 credits - 120 hours; REC 213/3 credits - 180 hours; REC 214/4 credits - 240 hours.

**REC 215 Recreation and Special Populations**—2 Cr. Hrs. – 2 Contact Hrs. Prerequisite: REC 111 or instructor permission. This course is specifically designed to acquaint the student with an overview of therapeutic recreation which involves physically, mentally or emotionally challenged; social deviant; the aged and substance abusers within institutions, agencies and in the community. The course is intended for students interested in general recreation as well as those who wish to specialize in working with special groups.

*Denotes course that contains an International Component.

**RESPIRATORY THERAPY**

**RT 101 Respiratory Therapy Physics**—1 Cr. Hr. – 1 Contact Hr. This course introduces the student to the basic concepts of classical physics used in respiratory care.

**RT 110 Equipment and Procedures**—3 Cr. Hrs. – 5 Contact Hrs. This course is designed to cover equipment and procedures in routine oxygen therapy. Topics included are: the physical properties of gases, manufacture and transport of medical gases, oxygen storage systems, pressure regulating systems, flow regulating systems, oxygen delivery equipment, and oxygen analyzers.

**RT 111 Introduction to Respiratory Therapy**—3 Cr. Hrs. – 3 Contact Hrs. This course is designed to give an introduction to the field of Respiratory Therapy and to basic medical sciences. Topics included are: the gas laws, physical states and structure of matter, role of energy in chemical and biological systems, acid-base physiology and processes of body metabolism.

**RT 120 Equipment and Procedures II**—3 Cr. Hrs. – 5 Contact Hrs. This course is designed to familiarize the student with proper techniques and equipment used for the delivery of aerosol/humidity therapy, incentive spirometry, intermittent positive pressure breathing (IPPB) and chest physical therapy.

**RT 121 Pharmacology**—2 Cr. Hrs. – 2 Contact Hrs. This course introduces the student to the general principles of pharmacology and gives an in-depth study of cardiopulmonary drugs.

**RT 122 Clinical I**—2 Cr. Hrs. – 4 Contact Hrs. This course is designed to introduce the student to patient care. The student will be assigned such responsibilities as general rounds. In addition, students will observe certain respiratory care procedures being performed.

**RT 130 Equipment and Procedures III**—3 Cr. Hrs. – 5 Contact Hrs. This course is designed to present procedural tasks including: intubation, airway care and management, pulmonary function testing and arterial blood gas sampling.

**RT 131 Physiology**—3 Cr. Hrs. – 3 Contact Hrs. This course is designed to give the student an in-depth study of cardiopulmonary physiology.

**RT 132 Clinical II**—3 Cr. Hrs. – 8 Contact Hrs. This course is designed to allow the student to practice techniques mastered in the previous practicum. During this course, the student will also become proficient in performing all basic respiratory care in the hospital.
RT 134 Introduction to Mechanical Ventilation—1 Cr. Hr. – 1 Contact Hr. Co-requisite: RT 130 Equipment & Procedures III. This course is designed to introduce the student to the theories of adult mechanical ventilation. Emphasis will be placed on patient assessment, indications, modes of ventilation, and management of the mechanically ventilated adult patient.

RT 141 Pulmonary Pathophysiology—2 Cr. Hrs. – 2 Contact Hrs. This course examines the mechanism of pulmonary disease. Emphasis is placed on a detailed study of etiology, clinical manifestations, treatment, complications, and prognosis for most pulmonary disorders.

RT 144 Adult Mechanical Ventilation—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: RT 134 Introduction to Mechanical Ventilation. This course is a continuation of the Introduction to Mechanical Ventilation course. Emphasis will be placed on the evaluation, care and management of mechanically ventilated adult patients. Additional emphasis will be placed on the application, mechanical functions and operation of specific ventilator systems.

RT 152 Clinical IV—5 Cr. Hrs. – 12 Contact Hrs. This course is designed to allow the student to develop competency in the critical care areas, mastering skills in mechanical ventilation of adult patients.

RT 162 Clinical V—7 Cr. Hrs. – 16 Contact Hrs. This course is designed to allow the student to further develop skills and competence in the adult critical care areas. Here the student will master ventilator therapy of the adult patient. By the end of the semester, the student should be able to assume a well-rounded position on the Respiratory care team.

RT 210 Cardiovascular and Renal Physiology—4 Cr. Hrs. – 4 Contact Hrs. This course is designed to present the anatomy, physiology and monitoring methods used to examine the heart-lung system and the kidneys. Emphasis will be placed on the electrocardiogram and hemodynamic monitoring, cardiac pharmacology, renal control of electrolytes and applications toward clinical respiratory care.

RT 212 Advanced Clinical Practicum I—3 Cr. Hrs. – 16 Contact Hrs. This clinical rotation is designed to prepare the student for an in-depth analysis of various critical care and diagnostic specialties.

RT 220C Pediatric/Neonatal Critical Care—4 Cr. Hrs. – 6 Contact Hrs. This course is designed to examine the various methods and procedures used to evaluate and care for the high-risk infant and pediatric patient. Emphasis will be placed on fetal development and monitoring, maternal risk factors, labor and delivery, newborn pathophysiology, mechanical ventilation and cardiopulmonary monitoring.

RT 222A Clinical Rotation VII—3 Cr. Hrs. – 8 Contact Hrs. This is the second and last clinical rotation taken by the second-year student. It is designed to expose the student to various specialties of respiratory care, including one day each in: home care; rehabilitative care; pulmonary function testing; sleep studies; smoking cessation; asthma education.

RT 230 Pulmonary Diagnostics and Rehabilitation—2 Cr. Hrs. – 2 Contact Hrs. This course explores the various methods of testing, evaluating and rehabilitating patients with pulmonary disease and disability. Emphasis will be placed on organization of rehabilitation programs, preventive care and home care.

RT 240 The Health Care Environment—1 Cr. Hr. – 1 Contact Hr. This course is designed to acquaint the student with the environments and forces that shape health care policy. Emphasis is placed on the social, political, medical and economic forces that influence the provision of health care today.

RT 250 Asthma Educator Course—3 Cr. Hrs. – 3 Contact Hrs. This is a post-graduate course designed to train health care practitioners to be asthma educators and to prepare them for the national certification exam currently being developed by the American Lung Association. This course is for those health care professionals who have completed formal training in accredited health care programs. This
course will cover all aspects of asthma education including pathology, pharmacology, diagnostics, psychosocial training, and asthma management planning.

SOCIAL SCIENCE
Before enrolling in this course, you must demonstrate that you are ready to succeed.

AS 201 American Studies—4 Cr. Hrs. – 4 Contact Hrs. The purpose of this course is to trace American social and cultural history from the colonial period to the present by means of a variety of inter-disciplinary approaches and techniques.

SOCIOLOGY
Before enrolling in these courses, you must demonstrate that you are ready to succeed.

SOC 101 Principles of Sociology—3 Cr. Hrs. – 3 Contact Hrs. A course offering the student an opportunity to grasp the basic principles necessary to develop sociological insights. Societal structure, as well as the basic tools of sociological measurement are surveyed. Emphasis is on the United States from a global perspective. The course is designed to equip sociology majors with the necessary foundation to continue in sociology and to provide non-majors with a general understanding of the structure and processes of society.

SOC 102 Principal Ethnic Minorities in America—3 Cr. Hrs. – 3 Contact Hrs. A survey of the dominant ethnic minority groups in our present day population. Emphasis is placed on those minority groups which have traditionally had to look to human service agencies to meet some of their basic needs. The course is open to all students with a basic sociology background.

SOC 202 Social Disorganization (Social Problems)—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: SOC 101. A course designed to aid the student in understanding the basic causes of the social ills that plague the contemporary social scene. Emphasis in this course is on those aspects of culture such as crime which contribute to inequities in our social system. Social problems of our judicial and educational institutions, as well as sexism and racism constitute the basis of our inquiry.

SOC 203 Introduction to Social Work—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: SOC 101 or SOC 202 or permission of instructor. Designed to present the objectives, methods and practices of the current field of social work. Where possible and whenever possible field work is included as part of the course offering. Field observation trips, presentations by practicing social workers, research practitioners and members of relevant social institutions and agencies will also be included. This course also assists those students majoring in education, ministry, medicine or law to gain intelligent awareness of the functions of existing social agencies in the Muskegon community.

SOC 206 Introduction to Aging—3 Cr. Hrs. – 3 Contact Hrs. An overview of gerontology that emphasizes identifying, describing and explaining challenges, patterns and processes concerning the elderly. This approach enables students and practitioners to acquire basic knowledge critical for careers related to gerontology, and to anticipate problems and promises of their own later lives.

SPANISH
(SEE FOREIGN LANGUAGES)

STUDENT DEVELOPMENT

PSYC 101 Human Potential Seminar—2 Cr. Hrs. – 3 Contact Hrs. The purpose of the course is to help individuals discover and actualize their unique strengths and potentials. The goals are to assist individuals to increase their self-affirmation, self-motivation, self-determination, and regard for others.
TECHNICAL APPRENTICESHIP
RELATED INSTRUCTION

Muskegon Community College, in cooperation with Muskegon Area industrial employers, labor councils, and the U.S. Department of Labor help train skilled workers for the future needs of industry. Apprenticeship Training programs are divided into two parts: on-the-job training under the supervision of a journeyman in the trade, and a minimum of 576 hours of related classroom instruction at a Federally approved training site.

Muskegon Community College provides the related classroom instruction which accompanies apprenticeship training programs.

Muskegon Community College does not select or place students in apprenticeship programs. It does provide the related technical courses which all apprentices must attend. Non-apprentices may also enroll in the courses, to prepare themselves for a subsequent apprenticeship, or to upgrade their qualifications for their present jobs.

Any trade which is recognized as apprenticeable by the U.S. Bureau of Apprenticeship and Training may have a local apprentice training program. Local programs require the cooperation of employers and a joint apprenticeship committee representing management and labor.

For information on class schedules and entrance into specific programs, call the Apprenticeship Coordinator at Muskegon Community College.

Successful completion of an apprenticeship training program may be credited toward an Associate in Applied Science Degree Program.

TECHNOLOGY-RELATED COURSES

AMT 129 Introduction to Technology—3 Cr. Hrs. – 6 Contact Hrs. This course provides an “integrated” introduction to the current computer-based technologies of manufacturing. Students will develop a foundation of understanding through hands-on experience in: basic microcomputer operations, Computer-Aided-Design (CAD), Computer-Aided-Machining (CAM), Computer Numerical Control (CNC), Robotics, Computer Automated Process Control, spreadsheets and Word-processing. The course also promotes: problem solving, group process, decision making, planning, and communication skills.

HP 101 Hydraulics/Pneumatics—3 Cr. Hrs. – 4 Contact Hrs. Prerequisite: TMAT 101 or equivalent. An overview of industrial fluid power technology with emphasis on hydraulic and pneumatic components and circuits. Practical hands-on exercises are provided using pneumatic training equipment. Component recognition and circuit analysis are covered for their applications to maintenance, modifications, and design activities in the field.

QC 101 Basic Quality Control—3 Cr. Hrs. – 3 Contact Hrs. This course presents practical approaches to quality problems. It includes study of basic techniques and laboratory workshop periods in developments of functional quality control. These include charting, sampling, analyzing probability relations, frequency distributions, vendor control, diagnosing the cause of defects, quality improvement and supervisory obligations.

QC 105 Quality & Productivity Using SPC-Statistical Process Control—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: QC 101 or instructor permission. This course instructs students in the methods and techniques of improved quality of productivity in all types of business and industry. Students are taught to understand the impact of foreign and domestic competition on their own organization and/or future employers. Topics covered include: operating a prevention system versus a detection system of quality control, defining and identifying inhibitors to quality and how to overcome them, chart construction, problem-solving using Pareto analysis, process flow charts, and cause and effect diagrams. The course is project-oriented and team-based.

TECH 200 Applied Alternative and Renewable Energy—3 Cr. Hrs. (1 Hour Lecture, 2 Hours Lab). Prerequisites: MATH 050, CHEM 100, ELTC 101 or instructor permission. This course introduces
the student to the power generating technologies. It will cover the operating principles, benefits and challenges in traditional, alternative and renewable energy fields. An emphasis is made on fuel cells, wind power, photovoltaics, energy storage, and distribute power generation. An overview of the associated topics in economics and politics will be provided.

**TECH 290CI Cooperative Internship**—Variable 1-4 Cr. Hrs. Prerequisites: The student must have a GPA of 2.5 or better. The student should have completed a significant portion of the core career requirements in their major field of study with a total of 30 credit hours towards a degree. Additionally, a faculty recommendation from the student’s major field of study is required. The Cooperative Internship Program is a paid or non-paid fieldwork experience in business and/or industry within the student’s major area of study. Variable credit hours (1-4 Cr. Hrs. per semester) may be earned dependent upon the number of work hours available from the employing organization. A student may sign up for as many internships as desired, however, the number of credit hours which can be applied towards a degree/certificate depends on the student’s course of study and departmental requirements. This course is offered as a pass/no pass grade. The internship course starting and ending dates are determined on an individual basis.

**TMAT 101 Technical Math I**—3 Cr. Hrs. – 3 Contact Hrs. A course for technical students who require a review of the principles of arithmetic as applied to manufacturing and business problems. Also included will be the use of the scientific calculator, basic algebra, trigonometry, and statistics.

**TMAT 102 Technical Math II**—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: TMAT 101 or high school equivalent. A course presenting the fundamentals of algebra and geometry as applied to the technical and industrial field.

**TMAT 201 Technical Math III**—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: TMAT 102 or high school advanced algebra and geometry. A thorough study of basic trigonometry with applications to technical and industrial problems.

**TMAT 202 Technical Math IV**—3 Cr. Hrs. – 3 Contact Hrs. Prerequisite: TMAT 201. This course familiarizes the technical student with the Machinery Handbook and its uses in the solution of problems. A continuation of the study of algebra, geometry, and trigonometry in addition to logarithms is included.

**THEATER**

Before enrolling in these courses, you must demonstrate that you are ready to succeed.

**TH 101 Theater Appreciation**—3 Cr. Hrs. – 3 Contact Hrs. Designed for non-majors, this class attempts to prepare students for success as theatergoers. We will study the requirements of being an involved spectator at live theater and be introduced to the many elements of production. This is an experience-oriented course and requires attendance at play performances outside of class.

**TH 102 Introduction to Acting I**—3 Cr. Hrs. – 3 Contact Hrs. An introduction to the art and craft of acting for the stage. Focuses on character analysis and performance. Physical, vocal, and mental exercises are utilized to develop the individual’s self-awareness and communicative skills.

**TH 108 Theater for Children**—3 Cr. Hrs. – 3 Contact Hrs. A course exploring the specialized techniques of play production for or with children, creative dramatics, and theater games. The class is designed for persons working with children such as elementary schoolteachers, special education workers, recreation leaders, and religious education staff. The use of theatrical techniques as educational tools to enhance the learning experience in other subjects is explored.

**TH 120 Technical Theater I**—1 Cr. Hr. – 1 Contact Hr. (5 week course) The fundamental course in the technical theater sequence specifically designed as a prerequisite for Applied Theater classes and crew assignments for play productions. Introduces production staff organization and different types of stages and scenery.

(continued on next page)
TH 141 Applied Theater Acting—1 Cr. Hr. – Variable Contact Hrs. Practicum class earning credit for acting in a Center for Theater production. Scheduling is flexible but will include weekend performances and probably evening rehearsals.

TH 142 Applied Theater – Dance—1 Cr. Hr. – Variable Contact Hrs. Practicum class for performing in a Center for Theater production. Scheduling is flexible but will include weekend performances and probably evening rehearsals.

TH 144 Applied Theater – Costuming—1 Cr. Hr. – Variable Contact Hrs. Practicum class earning credit for crew work on a Center for Theater play production. Scheduling is flexible but requires forty hours of lab work during available times.

TH 145 Applied Theater – Scenery Construction—1 Cr. Hr. – Variable Contact Hrs. Practicum class earning credit for crew work on a Center for Theater play production. Scheduling is flexible but requires forty hours of lab work during available hours.

TH 147 Applied Theater – Production Crew—1 Cr. Hr. – Variable Contact Hrs. (4-week course) Practicum class earning credit for crew work on Center for Theater productions. Scheduling is flexible but requires forty hours of lab time in a four-week period. Work assignments are made in terms of student interest and production needs. Includes scenery construction, painting, properties, costume, lighting, and/or sound crews.

TH 148 Applied Theater – Performance Crew—1 Cr. Hr. – Variable Contact Hrs. (2-week course) Practicum class earning credit for crew work on Center for Theater productions. Requires attendance at weekend and evening rehearsals and performances for a two-week period. Work assignments will be made in terms of student interest and production needs. Includes scenery construction, painting, properties, costume, lighting, and/or sound crews.

TH 160 Acting for TV and Film—3 Cr. Hrs. – 3 Contact Hrs. This course is designed to prepare the student with the basic skills necessary for TV and/or film acting. Among the topics covered are: acting for the camera, the use of and differences between the television and film camera, the use of the storyboard, shooting out of sequence, developing continuity, and the use of lighting, sound, special effects and editing. Rehearsal outside of class time and shooting on location may be required. The final class project will culminate in each student acting in a prepared film scene. Before enrolling in this course, you must demonstrate that you are ready to succeed.

TH 201 Introduction to Theater History*—3 Cr. Hrs. – 3 Contact Hrs. An introductory course designed to give the student an awareness of the development of theater from classical Greece through Neo-classical France.

TH 202 Introduction to Acting II—3 Cr. Hrs. – 3 Contact Hrs. An acting class emphasizing the analysis of scripted scenes and character interactions. Selected scenes are rehearsed for possible performance at the end of the semester.

TH 203 Readers Theater—3 Cr. Hrs. – 3 Contact Hrs. This performance course is designed to give the student knowledge of and experience in oral reading as a theatrical form. Out-of-class rehearsal and performance time may be required.

TH 210 Play Production—3 Cr. Hrs. – 3 Contact Hrs. An introductory course in the process of play production from script selection through final performance.

TH 212 Summer Theater Workshop—3 Cr. Hrs. – Variable Contact Hrs. A practicum course allowing advanced students to undertake special projects in conjunction with a summer theater company. Projects are usually creative in nature and are undertaken with the advice and supervision of an approved mentor. Although focusing on the specialized crafts of acting, directing, design, technical production, or arts management, project implementation will emphasize the cooperative nature of theater.

TH 217 Creative Dramatics—1 Cr. Hr. – 1 Contact Hr. This course is an introduction to the use of creative dramatics in the classroom, home, and community. The goals and concerns of creative drama will be explored as well as methods for incorporat-
ing these techniques into a curriculum. Focus will be centered on the activities that are the basis of every creative dramatics program. A particular interest will be centered on the novice who needs practical advice on how to begin teaching creative thinking and problem solving.

TH 260 Student Production Practicum – 2 Cr.
Hrs. – Variable Contact Hrs. An experiential course giving credit for creative involvement in the planning, rehearsal, and performance of a play.

*Denotes course that contains an International Component.

WELDING TECHNOLOGY

W 101 Basic Welding—3 Cr. Hrs. – 5 Contact Hrs. Basic Welding is designed for the learner who has no welding experience or limited welding experience. Subject material will focus on the theory of welding processes common to local industries. The welding and cutting processes covered will be: Oxyacetylene Welding and Oxyacetylene Brazing (OAW and OAB), Oxyacetylene Cutting (OAC), Plasma Arc Cutting (PAC), heating and bending with the torch, Gas Tungsten Arc Welding (GTAW), Shielded Metal Arc Welding (SMAW), and Gas Metal Arc Welding (GMAW). Students will learn to set-up and operate welding equipment according to approved standards. Theory of each welding process will be covered in the classroom followed by practical experience in the lab. Lab projects will provide experiences in the fabrication of typical weld joints all done in the flat position. Welding symbols found on drawings and welding terminology will be an integral part of the course.

W 102 Introduction to Advanced Welding—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: W 101 or instructor permission. This course will cover the three most common electric arc welding methods: Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), and Gas Metal Arc Welding (GMAW). The course is designed for the learner who has limited or some previous welding experience. Material covered will be safety and theory of the processes as well as equipment set-up and the creation of typical joint used during metal fabrication.

SMAW - This process involves constructing typical welded joints in the horizontal, vertical-up and overhead positions. The electrode used will be the fast fill/ fast freeze group, which is the E6010/E6011 electrode.

GTAW - This part of the course will present the theory and application of the TIG welding process. Shielding gases, tungsten selection and preparation, polarity selection and welding machine set-up will be covered. Welds will be constructed in the flat position only. Projects will be done in mild steel, aluminum, and stainless steel.

MIG - In the MIG portion of the course both theory and applications of the welding process will be covered. Topics of discussion will include the following: transfer modes, types and application of shielding gases, stick-out distance, wire feed speeds, voltage selection and machine set-up. Wire and gun maintenance will also be covered. Typical welded joints will be constructed in the flat position only.

W 103 MIG (Gas Metal Arc) Welding/TIG (Gas Tungsten Arc)—3 Cr. Hrs. – 6 Contact Hrs. Prerequisite: W 102 or instructor permission. This course is an intensive study of Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW) processes. This course is designed for students who need to improve their welding skills in these processes.

GTAW - Instruction will include the theory and applications of shielding gases, tungsten electrodes, polarity settings and equipment set-up procedures. Students will weld ferrous and non-ferrous materials. Welding joints will be done in all positions. The course material will place emphasis on creating a fabricated joint that has the same metallurgical and physical properties as the base metal.

GMAW - Instruction will include the theory of the welding process, transfer modes, types and applications of shielding gases and machine set-up. Welds will be created in the flat, horizontal, vertical-up/down and overhead positions. Both ferrous and non-ferrous materials will be used. Topics of discussion will include: safety precautions, joint preparation, current selection, wire speed and proper selection of inert gas mixtures.
W 201 Structural Welding—3 Cr. Hrs. – 6 Contact Hrs.  Prerequisites: W 102 or instructor permission.  A course designed for advanced welders who want to improve their skills in stick welding or who are preparing to certify to AWS D1.1 code standard. This code is used for welding on bridges, buildings, steel structures, road machinery, farm equipment and other structures. Materials presented will be the AWS code book, safety precautions, joint preparation, electrode selection, setting up equipment and welding procedures. Lab work will include out-of-position welding using the fast fill/ fast freeze (E6010) and fast fill/ slow freeze (E7018) category electrodes. Weld testing— both visually and mechanically will be an integral part of the coursework.

W 202 Pipe Welding—3 Cr. Hrs. – 6 Contact Hrs.  Prerequisite: W 201 or instructor permission.  This course is designed for the advanced welders who want to improve their pipe welding skills or are preparing for pipe welding certification to the AWS D1.1 welding code standard. Topics covered will include: safety practices, tack welds, positioning and pipe welding using methods most frequently found in industrial processes and fieldwork. All common welding positions will be covered. Students are required to perform root pass, filler pass and cover pass on each specimen. Welding processes which will be covered are Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), and Gas Metal Arc Welding (GMAW). Destructive and visual testing will be part of the coursework.

W 203 Maintenance Welding—3 Cr. Hrs. – 6 Contact Hrs.  Prerequisite: W 201 and W202 or instructor permission.  A course with emphasis on safety and the combined skills obtained from previous welding and related courses. Students should have a working knowledge of jigs and fixtures, welding symbols and blueprints that will enable them to fabricate assembly parts according to print specifications. A degree of creative and technical talent will be needed to translate theory to productivity. The student will be presented with a problem, be expected to find the solution and deliver an oral or written report.

W 204 Welding Supervision—3 Cr. Hrs.  – 6 Contact Hrs.  Prerequisite: MET 201. Pre- or Corequisites: W 203 and BCOM 102.  A course that requires the welding student to combine hands-on skills and intellectual knowledge of welding processes and use this ability to help beginning welders. The student will assist the instructor in demonstrations of welding processes and techniques used in today's welding operations. Students will be required to produce weld specimens in all positions and perform destructive tests for weld soundness.  This course provides skills that help you stand out among other candidates in the welding industry.

WOMEN’S STUDIES
Before enrolling in this course, you must demonstrate that you are ready to succeed.

WS 101 Introduction to Women’s Studies—3 Cr. Hrs. – 3 Contact Hrs.  Students will look at women’s positions in our culture and others, both now and historically, considering issues such as media portrayals, economics, violence against women, socialization, and body image.  The course will consider how race, class, and sexual orientation affect a person’s experiences with regard to each of these issues.  Students will also look at the various movements for change.  This course satisfies the social relationships general requirement for an ASA degree.
# INDEX

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting (BUS)</td>
<td>69, 134</td>
</tr>
<tr>
<td>Accreditation</td>
<td>3</td>
</tr>
<tr>
<td>Adding Courses</td>
<td>32</td>
</tr>
<tr>
<td>Administration</td>
<td>49</td>
</tr>
<tr>
<td>Administrative/Office Systems Education</td>
<td>82, 135</td>
</tr>
<tr>
<td>Admissions/Applications</td>
<td>14</td>
</tr>
<tr>
<td>Allied Health (AH)</td>
<td>62, 129</td>
</tr>
<tr>
<td>Alternative and Renewable Energy Certificate</td>
<td>123</td>
</tr>
<tr>
<td>Alumni Association</td>
<td>40</td>
</tr>
<tr>
<td>Anthropology (ANTH)</td>
<td>130</td>
</tr>
<tr>
<td>Applying to MCC</td>
<td>4, 6</td>
</tr>
<tr>
<td>Apprenticeship Training-Related Instruction (RI)</td>
<td>196</td>
</tr>
<tr>
<td>Art</td>
<td>130</td>
</tr>
<tr>
<td>Articulation Programs</td>
<td>19</td>
</tr>
<tr>
<td>Associate in Science and Arts Degree</td>
<td>6, 55</td>
</tr>
<tr>
<td>Associate in Applied Science Degree</td>
<td>6, 60</td>
</tr>
<tr>
<td>Astronomy (ASTR)</td>
<td>131</td>
</tr>
<tr>
<td>Athletics</td>
<td>40</td>
</tr>
<tr>
<td>Attendance</td>
<td>33</td>
</tr>
<tr>
<td>Audit Policy</td>
<td>33</td>
</tr>
<tr>
<td>Automotive Technology (AT)</td>
<td>104, 131</td>
</tr>
<tr>
<td>Biology (BIOL)</td>
<td>132</td>
</tr>
<tr>
<td>Biomedical Electronics Technology</td>
<td>106</td>
</tr>
<tr>
<td>Board of Trustees</td>
<td>45</td>
</tr>
<tr>
<td>Bookstore</td>
<td>42</td>
</tr>
<tr>
<td>Business &amp; Industrial Training</td>
<td>39</td>
</tr>
<tr>
<td>Business Certificates</td>
<td>92</td>
</tr>
<tr>
<td>Business Programs and Courses</td>
<td>69, 135</td>
</tr>
<tr>
<td>Business &amp; Technical Communications (BCOM)</td>
<td>139</td>
</tr>
<tr>
<td>Capella University</td>
<td>126</td>
</tr>
<tr>
<td>Career Counseling/Information</td>
<td>23</td>
</tr>
<tr>
<td>Center for Theater</td>
<td>43</td>
</tr>
<tr>
<td>Certificate Programs, One-Year</td>
<td>6, 53</td>
</tr>
<tr>
<td>Change of Address</td>
<td>15</td>
</tr>
<tr>
<td>Chemistry (CHEM)</td>
<td>140</td>
</tr>
<tr>
<td>Child Care Professional Certificates (ED)</td>
<td>99</td>
</tr>
<tr>
<td>Child Development Associate</td>
<td>96</td>
</tr>
<tr>
<td>Chorus</td>
<td>179</td>
</tr>
<tr>
<td>C/Java Computer Programming</td>
<td>77</td>
</tr>
<tr>
<td>Class Load</td>
<td>32</td>
</tr>
<tr>
<td>Class Standing</td>
<td>36</td>
</tr>
<tr>
<td>Clubs and Organizations</td>
<td>39</td>
</tr>
<tr>
<td>College Success Center (CS Center)</td>
<td>22</td>
</tr>
<tr>
<td>College Success Seminar</td>
<td>141</td>
</tr>
<tr>
<td>Communications (COM)</td>
<td>141</td>
</tr>
<tr>
<td>Community Services</td>
<td>25, 38</td>
</tr>
<tr>
<td>Complaints - See Petitions Committee</td>
<td>40</td>
</tr>
<tr>
<td>Computer-Aided Drafting and Design (CAD)</td>
<td>107, 142</td>
</tr>
</tbody>
</table>

201
Computer Applications ............................................................................................................................ 73
Computer Courses (CIS) ............................................................................................................................ 143
Computer Network Technology .................................................................................................................... 78
Computer Programming ............................................................................................................................. 75
Computer Related A.A.S. Degrees .............................................................................................................. 73
Concert Band (MU) .................................................................................................................................... 179
Confidentiality of Records .......................................................................................................................... 35
Continuing Education ................................................................................................................................... 16, 25, 38
Corrections Officer Program ...................................................................................................................... 61, 152
Costs ............................................................................................................................................................ 24
Council System ........................................................................................................................................... 40
Counseling .................................................................................................................................................. 22
Credit Hour ................................................................................................................................................ 32
Credit, Non-conventional ............................................................................................................................. 17
Criminal Justice (CJ) .................................................................................................................................. 59, 150
Curriculum Guides ..................................................................................................................................... 10, 57
Curriculum Planning ................................................................................................................................... 6
Customer Service Specialist Certificate ........................................................................................................ 73
Dance (DNC) ............................................................................................................................................... 153
Deans’ List .................................................................................................................................................. 38
Degrees Awarded ......................................................................................................................................... 6
Dismissal, Academic ..................................................................................................................................... 34
Distance Education ...................................................................................................................................... 14
Drafting Technology (CAD) .......................................................................................................................... 107, 142
Dropping Courses ....................................................................................................................................... 32
Dual Enrollment ........................................................................................................................................... 16
Early Childhood Education .......................................................................................................................... 98
E-Business .................................................................................................................................................... 80
Economics (ECON) ...................................................................................................................................... 153
Education Courses (ED) ............................................................................................................................... 95, 154
Education Opportunity Grants (PELL)(SEOG) .......................................................................................... 26
Electricity/Electronics Technology (ELTC)(ELTR) ....................................................................................... 109, 159
Employment Resource Center .................................................................................................................... 23
Engineering (ENGR) .................................................................................................................................... 161
English/Communications (ENG/COM) ......................................................................................................... 162
Entrepreneurship Program Certificate ........................................................................................................ 73
Equal Opportunity ......................................................................................................................................... 3
Facilities ....................................................................................................................................................... 41
Faculty .......................................................................................................................................................... 46
Family Education Rights and Privacy Act (FERPA) ...................................................................................... 34
Fees .............................................................................................................................................................. 24
Ferris State University .................................................................................................................................. 126
Financial Aid .............................................................................................................................................. 25, 30
Food Service (Bookside Bistro) ...................................................................................................................... 42
Foreign Languages (FR, GER, SPAN) ........................................................................................................... 165
Foreign Students .......................................................................................................................................... 17
Foundation for MCC ................................................................................................................................... 40
Franklin University ......................................................................................................................................... 126
Frauenthal Foundation Art Center ................................................................................................................ 42
French (FR) .................................................................................................................................................. 165
Course Descriptions

Full-Time Student ................................................................. 15
General Education, Purpose .................................................. 11, 13
General Education, Requirements ......................................... 7
Geography (GEOG) ............................................................ 167
Geology (GEOL) ................................................................. 168
German (GR) ................................................................ 166
Grade Point Average .......................................................... 38
Grading System ................................................................. 37
Graduation Requirements ..................................................... 36
Grand Valley State University ............................................... 127
Grants/Loans ..................................................................... 26-30
Graphic Design (GRD, GR) .................................................. 110, 168
Graphic Design Certificates ............................................... 112
Grievances - Petition Committee .......................................... 41
Guest Admissions .............................................................. 16
Gymnasium, Bartels-Rode ................................................... 42
Health Education (HE) ....................................................... 170
High School Articulation .................................................... 19
History Courses (HIST) ....................................................... 170
History and Purpose of College .......................................... 43
Honors Program ............................................................... 18
Housing ........................................................................... 41
Humanities (HUM) ............................................................ 172
Incomplete Grade .............................................................. 37
Individual Study Courses .................................................... 18
Industrial Technology ....................................................... 104, 113
Industrial Technology Certificates ..................................... 122
Information Processing/Office Systems Education ............... 84
International/Office Systems Education ............................... 86
International Study ........................................................... 19
Internships ....................................................................... 18
Jobs/Placement ................................................................. 23
Job Shadow Program ........................................................ 18
Lakeshore Business and Industrial Service Center ............... 39
Legal/Office Systems Education ......................................... 88
Library Services .............................................................. 42
Life Experience Assessment Program (LEAP) ....................... 17
Loans/Grants ................................................................. 26-30
MACRAO Agreement ........................................................ 11
Machining Technology (MT) .............................................. 115, 172
Management - AAS .......................................................... 70, 135
Marketing - AAS .............................................................. 71, 138
Massage Therapy (MSTH) ............................................... 68, 174
Materials Technology (MET) ............................................ 116, 173
Mathematics (MATH) ....................................................... 176
Matriculation Card ........................................................... 15
Media Services ................................................................ 43
Medical/Office Systems Education ..................................... 90, 134
Microsoft Office Suite ...................................................... 75
Mission Statement ........................................................... 3
<table>
<thead>
<tr>
<th>Section</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Programs</td>
<td>104</td>
</tr>
<tr>
<td>Technology Related Courses</td>
<td>43, 197</td>
</tr>
<tr>
<td>Testing</td>
<td>7, 21</td>
</tr>
<tr>
<td>Theater (TH)</td>
<td>196</td>
</tr>
<tr>
<td>Transferring Credits</td>
<td>15</td>
</tr>
<tr>
<td>Transcripts</td>
<td>36</td>
</tr>
<tr>
<td>Tuition</td>
<td>24</td>
</tr>
<tr>
<td>Tutoring Services</td>
<td>22</td>
</tr>
<tr>
<td>University Programs</td>
<td>126</td>
</tr>
<tr>
<td>Veterans</td>
<td>20, 28</td>
</tr>
<tr>
<td>Vocational Rehabilitation</td>
<td>28</td>
</tr>
<tr>
<td>Welding Technology (W)</td>
<td>119, 199</td>
</tr>
<tr>
<td>Western Michigan University</td>
<td>127</td>
</tr>
<tr>
<td>Withdrawal Policy</td>
<td>33</td>
</tr>
<tr>
<td>Women’s Studies</td>
<td>200</td>
</tr>
<tr>
<td>Work-Study Programs</td>
<td>26, 27</td>
</tr>
<tr>
<td>World Class Manufacturing/Business</td>
<td>121</td>
</tr>
<tr>
<td>Writing Lab (College Success Center)</td>
<td>22</td>
</tr>
<tr>
<td>Youth Programs</td>
<td>19</td>
</tr>
</tbody>
</table>
## INDEX

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting (BUS)</td>
<td>69, 134</td>
</tr>
<tr>
<td>Accreditation</td>
<td>3</td>
</tr>
<tr>
<td>Adding Courses</td>
<td>32</td>
</tr>
<tr>
<td>Administration</td>
<td>49</td>
</tr>
<tr>
<td>Administrative/Office Systems Education</td>
<td>82, 135</td>
</tr>
<tr>
<td>Admissions/Applications</td>
<td>14</td>
</tr>
<tr>
<td>Allied Health (AH)</td>
<td>62, 129</td>
</tr>
<tr>
<td>Alternative and Renewable Energy Certificate</td>
<td>123</td>
</tr>
<tr>
<td>Alumni Association</td>
<td>40</td>
</tr>
<tr>
<td>Anthropology (ANTH)</td>
<td>130</td>
</tr>
<tr>
<td>Applying to MCC</td>
<td>4, 6</td>
</tr>
<tr>
<td>Apprenticeship Training-Related Instruction(RI)</td>
<td>196</td>
</tr>
<tr>
<td>Art</td>
<td>130</td>
</tr>
<tr>
<td>Articulation Programs</td>
<td>19</td>
</tr>
<tr>
<td>Associate in Science and Arts Degree</td>
<td>6, 55</td>
</tr>
<tr>
<td>Associate in Applied Science Degree</td>
<td>6, 60</td>
</tr>
<tr>
<td>Astronomy (ASTR)</td>
<td>131</td>
</tr>
<tr>
<td>Athletics</td>
<td>40</td>
</tr>
<tr>
<td>Attendance</td>
<td>33</td>
</tr>
<tr>
<td>Audit Policy</td>
<td>33</td>
</tr>
<tr>
<td>Automotive Technology (AT)</td>
<td>104, 131</td>
</tr>
<tr>
<td>Biology (BIOL)</td>
<td>132</td>
</tr>
<tr>
<td>Biomedical Electronics Technology</td>
<td>106</td>
</tr>
<tr>
<td>Board of Trustees</td>
<td>45</td>
</tr>
<tr>
<td>Bookstore</td>
<td>42</td>
</tr>
<tr>
<td>Business &amp; Industrial Training</td>
<td>39</td>
</tr>
<tr>
<td>Business Certificates</td>
<td>92</td>
</tr>
<tr>
<td>Business Programs and Courses</td>
<td>69, 135</td>
</tr>
<tr>
<td>Business &amp; Technical Communications (BCOM)</td>
<td>139</td>
</tr>
<tr>
<td>Capella University</td>
<td>126</td>
</tr>
<tr>
<td>Career Counseling/Information</td>
<td>23</td>
</tr>
<tr>
<td>Center for Theater</td>
<td>43</td>
</tr>
<tr>
<td>Certificate Programs, One-Year</td>
<td>6, 53</td>
</tr>
<tr>
<td>Change of Address</td>
<td>15</td>
</tr>
<tr>
<td>Chemistry (CHEM)</td>
<td>140</td>
</tr>
<tr>
<td>Child Care Professional Certificates (ED)</td>
<td>99</td>
</tr>
<tr>
<td>Child Development Associate</td>
<td>96</td>
</tr>
<tr>
<td>Chorus</td>
<td>179</td>
</tr>
<tr>
<td>C/Java Computer Programming</td>
<td>77</td>
</tr>
<tr>
<td>Class Load</td>
<td>32</td>
</tr>
<tr>
<td>Class Standing</td>
<td>36</td>
</tr>
<tr>
<td>Clubs and Organizations</td>
<td>39</td>
</tr>
<tr>
<td>College Success Center (CS Center)</td>
<td>22</td>
</tr>
<tr>
<td>College Success Seminar</td>
<td>141</td>
</tr>
<tr>
<td>Communications (COM)</td>
<td>141</td>
</tr>
<tr>
<td>Community Services</td>
<td>25, 38</td>
</tr>
<tr>
<td>Complaints - See Petitions Committee</td>
<td>40</td>
</tr>
<tr>
<td>Computer-Aided Drafting and Design (CAD)</td>
<td>107, 142</td>
</tr>
</tbody>
</table>

**201**
Muskegon Community College Catalog

Computer Applications ................................................................. 73
Computer Courses (CIS) ..................................................................... 143
Computer Network Technology ......................................................... 78
Computer Programming .................................................................... 75
Computer Related A.A.S. Degrees ...................................................... 73
Concert Band (MU) .......................................................................... 179
Confidentiality of Records .................................................................. 35
Continuing Education ........................................................................ 16, 25, 38
Corrections Officer Program .............................................................. 61, 152
Costs ................................................................................................. 24
Council System ................................................................................. 40
Counseling ......................................................................................... 22
Credit Hour ....................................................................................... 32
Credit, Non-conventional ................................................................. 17
Criminal Justice (CJ) ......................................................................... 59, 150
Curriculum Guides ............................................................................ 10, 57
Curriculum Planning .......................................................................... 6
Customer Service Specialist Certificate ........................................... 73
Dance (DNC) .................................................................................... 153
Deans’ List ....................................................................................... 38
Degrees Awarded ............................................................................... 6
Dismissal, Academic ......................................................................... 34
Distance Education ............................................................................ 14
Drafting Technology (CAD) .............................................................. 107, 142
Dropping Courses ........................................................................... 32
Dual Enrollment ............................................................................... 16
Early Childhood Education ............................................................. 98
E-Business ....................................................................................... 80
Economics (ECON) .......................................................................... 153
Education Courses (ED) ................................................................. 95, 154
Education Opportunity Grants (PELL)(SEOG) .................................. 26
Electricity/Electronics Technology (ELTC)(ELTR) ................................ 109, 159
Employment Resource Center ......................................................... 23
Engineering (ENGR) ....................................................................... 161
English/Communications (ENG/COM) ........................................... 162
Entrepreneurship Program Certificate ............................................. 73
Equal Opportunity ............................................................................ 3
Facilities ......................................................................................... 41
Faculty .......................................................................................... 46
Family Education Rights and Privacy Act (FERPA) ............................. 34
Fees ................................................................................................. 24
Ferris State University ................................................................. 126
Financial Aid .................................................................................. 25, 30
Food Service (Bookside Bistro) ........................................................ 42
Foreign Languages (FR, GER, SPAN) .............................................. 165
Foreign Students ............................................................................ 17
Foundation for MCC ...................................................................... 40
Franklin University ........................................................................ 126
Frauenthal Foundation Art Center ................................................. 42
French (FR) ...................................................................................... 165
<table>
<thead>
<tr>
<th>Section</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-Time Student</td>
<td>15</td>
</tr>
<tr>
<td>General Education, Purpose</td>
<td>11, 13</td>
</tr>
<tr>
<td>General Education, Requirements</td>
<td>7</td>
</tr>
<tr>
<td>Geography (GEOG)</td>
<td>167</td>
</tr>
<tr>
<td>Geology (GEOG)</td>
<td>168</td>
</tr>
<tr>
<td>German (GR)</td>
<td>166</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td>38</td>
</tr>
<tr>
<td>Grading System</td>
<td>37</td>
</tr>
<tr>
<td>Graduation Requirements</td>
<td>36</td>
</tr>
<tr>
<td>Grand Valley State University</td>
<td>127</td>
</tr>
<tr>
<td>Grants/Loans</td>
<td>26-30</td>
</tr>
<tr>
<td>Graphic Design (GRD, GR)</td>
<td>110, 168</td>
</tr>
<tr>
<td>Graphic Design Certificates</td>
<td>112</td>
</tr>
<tr>
<td>Grievances - Petition Committee</td>
<td>41</td>
</tr>
<tr>
<td>Guest Admissions</td>
<td>16</td>
</tr>
<tr>
<td>Gymnasium, Bartels-Rode</td>
<td>42</td>
</tr>
<tr>
<td>Health Education (HE)</td>
<td>170</td>
</tr>
<tr>
<td>High School Articulation</td>
<td>19</td>
</tr>
<tr>
<td>History Courses (HIST)</td>
<td>170</td>
</tr>
<tr>
<td>History and Purpose of College</td>
<td>43</td>
</tr>
<tr>
<td>Honors Program</td>
<td>18</td>
</tr>
<tr>
<td>Housing</td>
<td>41</td>
</tr>
<tr>
<td>Humanities (HUM)</td>
<td>172</td>
</tr>
<tr>
<td>Incomplete Grade</td>
<td>37</td>
</tr>
<tr>
<td>Individual Study Courses</td>
<td>18</td>
</tr>
<tr>
<td>Industrial Technology</td>
<td>104, 113</td>
</tr>
<tr>
<td>Industrial Technology Certificates</td>
<td>122</td>
</tr>
<tr>
<td>Information Processing/Office Systems Education</td>
<td>84</td>
</tr>
<tr>
<td>International/Office Systems Education</td>
<td>86</td>
</tr>
<tr>
<td>International Study</td>
<td>19</td>
</tr>
<tr>
<td>Internships</td>
<td>18</td>
</tr>
<tr>
<td>Jobs/Placement</td>
<td>23</td>
</tr>
<tr>
<td>Job Shadow Program</td>
<td>18</td>
</tr>
<tr>
<td>Lakeshore Business and Industrial Service Center</td>
<td>39</td>
</tr>
<tr>
<td>Legal/Office Systems Education</td>
<td>88</td>
</tr>
<tr>
<td>Library Services</td>
<td>42</td>
</tr>
<tr>
<td>Life Experience Assessment Program (LEAP)</td>
<td>17</td>
</tr>
<tr>
<td>Loans/Grants</td>
<td>26-30</td>
</tr>
<tr>
<td>MACRAO Agreement</td>
<td>11</td>
</tr>
<tr>
<td>Machining Technology (MT)</td>
<td>115, 172</td>
</tr>
<tr>
<td>Management - AAS</td>
<td>70, 135</td>
</tr>
<tr>
<td>Marketing - AAS</td>
<td>71, 138</td>
</tr>
<tr>
<td>Massage Therapy (MSTH)</td>
<td>68, 174</td>
</tr>
<tr>
<td>Materials Technology (MET)</td>
<td>116, 173</td>
</tr>
<tr>
<td>Mathematics (MATH)</td>
<td>176</td>
</tr>
<tr>
<td>Matriculation Card</td>
<td>15</td>
</tr>
<tr>
<td>Media Services</td>
<td>43</td>
</tr>
<tr>
<td>Medical/Office Systems Education</td>
<td>90, 134</td>
</tr>
<tr>
<td>Microsoft Office Suite</td>
<td>75</td>
</tr>
<tr>
<td>Mission Statement</td>
<td>3</td>
</tr>
</tbody>
</table>

Course Descriptions

203
Muskegon Community College Catalog

Music (MU) ........................................................................................................................................... 178
Muskegon Partnership Program .................................................................................................................. 20
Native American Tuition Grants ............................................................................................................... 28
Northwood University ................................................................................................................................... 127
Nursing (NUR) ........................................................................................................................................ 62, 182
Observatory ............................................................................................................................................. 43
Office Systems Education (Degrees & Certificates) ................................................................................ 81, 92
Online Classes ........................................................................................................................................ 14, 32
Part-time Student ...................................................................................................................................... 15
PELL Grant .............................................................................................................................................. 26
Petitions Committee ................................................................................................................................. 40
Philosophy Courses (PHIL) ................................................................................................................. 183
Physical Education (PEA, PEP) ............................................................................................................. 184
Physical Science (PHSC) ....................................................................................................................... 189
Physics (PHYS) ...................................................................................................................................... 189
Placement Tests ...................................................................................................................................... 21
Planetarium (Carr-Fles) ........................................................................................................................... 43
Political Science (PSCI) ........................................................................................................................... 190
President’s List ...................................................................................................................................... 38
Probation, Academic ............................................................................................................................... 34
Professional Development Credits/Programs ......................................................................................... 6, 94
Psychology (PSYC) ................................................................................................................................ 191
Pulp and Paper Science ............................................................................................................................ 117
Quality Control (QC) ............................................................................................................................... 196
Reading Lab (College Success Center) ..................................................................................................... 22, 192
Ready to Succeed ................................................................................................................................. 128
Real Estate Courses (RE) ..................................................................................................................... 192
Records .................................................................................................................................................... 34
Recreation/Recreational Leadership (REC) ............................................................................................... 192
Refund Procedure .................................................................................................................................. 24
Registration ............................................................................................................................................ 31
Repeating Courses .................................................................................................................................. 34
Residency Policy ..................................................................................................................................... 16
Respiratory Therapy (RT) ....................................................................................................................... 67, 193
RPG Programming Certificate .................................................................................................................. 76
SAM (Study Opportunities for Adults and Mature Citizens) ................................................................... 17, 29
Satisfactory Progress Standards/Financial Aid Recipients ..................................................................... 30
Schedules, Class ...................................................................................................................................... 32
Scholarships ............................................................................................................................................ 26-30
Sign Language, American ....................................................................................................................... 129
Social Science (AS) ............................................................................................................................... 195
Sociology (SOC) ..................................................................................................................................... 195
Spanish (SPAN) ..................................................................................................................................... 167
Special Populations/Special Service Programs ..................................................................................... 23
Stage Band (MU) ................................................................................................................................... 179
Stevenson (James L.) Center for Higher Education ............................................................................... 43
Student Activities .................................................................................................................................. 39
Student Development (SD) ................................................................................................................... 195
Student Life .......................................................................................................................................... 39
Student Organizations and Clubs ........................................................................................................... 39

204
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Programs</td>
<td>104</td>
</tr>
<tr>
<td>Technology Related Courses</td>
<td>43, 197</td>
</tr>
<tr>
<td>Testing</td>
<td>7, 21</td>
</tr>
<tr>
<td>Theater (TH)</td>
<td>196</td>
</tr>
<tr>
<td>Transferring Credits</td>
<td>15</td>
</tr>
<tr>
<td>Transcripts</td>
<td>36</td>
</tr>
<tr>
<td>Tuition</td>
<td>24</td>
</tr>
<tr>
<td>Tutoring Services</td>
<td>22</td>
</tr>
<tr>
<td>University Programs</td>
<td>126</td>
</tr>
<tr>
<td>Veterans</td>
<td>20, 28</td>
</tr>
<tr>
<td>Vocational Rehabilitation</td>
<td>28</td>
</tr>
<tr>
<td>Welding Technology (W)</td>
<td>119, 199</td>
</tr>
<tr>
<td>Western Michigan University</td>
<td>127</td>
</tr>
<tr>
<td>Withdrawal Policy</td>
<td>33</td>
</tr>
<tr>
<td>Women’s Studies</td>
<td>200</td>
</tr>
<tr>
<td>Work-Study Programs</td>
<td>26, 27</td>
</tr>
<tr>
<td>World Class Manufacturing/Business</td>
<td>121</td>
</tr>
<tr>
<td>Writing Lab (College Success Center)</td>
<td>22</td>
</tr>
<tr>
<td>Youth Programs</td>
<td>19</td>
</tr>
</tbody>
</table>