



### From the Office of the President

Congratulations on the decision to further your education with Northwest State Community College. On behalf of our faculty, staff and Board of Trustees, I want to personally welcome you to campus.

NSCC continues to be a leader in providing innovative education and training for students who have made the decision to begin or advance their careers. Whether you are interested in improving your current job skills, earning a degree or certificate, or transferring your credits to a four-year college/university, NSCC has everything you need to create your success.

Within the pages of this catalog, you will find a roadmap to over 60 degree and certificate programs that serve as pathways to a brighter future offering new opportunities. Additionally, you will find a comprehensive description of the College. Take time to read through these pages and you will learn about Northwest State's history, mission, services and facilities. You will discover the numerous scholarships, student activities and intramural athletics that are available to you.

As you read the catalog you will discover much more. You will see that NSCC is committed to you –your future, your career and your success. Our small class sizes and eclectic mix of students encourage lively classroom discussions and foster a rich learning environment. Many of our faculty members lead their classes with both academic and real-world experience. They teach practical, relevant skills that will prove to be beneficial throughout your career.

Furthermore, the College offers free services through the Student Resource Center that include tutoring; walk-in writing, math and science labs; transfer advising; and career services. We give you the tools you need to find success in the classroom and beyond.

I look forward to meeting you in the hallways on campus and again on graduation day when we will celebrate your accomplishments. It is my deepest hope that you complete your program with the confidence to advance your career and make a commitment to lifelong learning. Never stop learning and you will never run out of opportunities to achieve your dreams!

Sincerely,

*Tom Stuckey*  
Dr. Thomas L. Stuckey



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**Please Note:**

Northwest State Community College reserves the right to make changes to any item contained herein as deemed necessary without notice. You are advised to consult your academic advisor or the appropriate College official for confirmation of matters that are essential to your programs of study. To meet graduation requirements, students are expected to follow the curriculum listed in the catalog in the year which they start. If continuous enrollment is not maintained, the catalog year would be updated.

**This catalog is meant to serve as a guide. Official and current information is available at NorthwestState.edu.**

**NSCC Non-Discrimination Statement**

Northwest State Community College does not discriminate on the basis of race, color, national origin, sex, disability, religion or age in its programs or activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Cindy Krueger, Vice President of Institutional Effectiveness and Student Success, 22600 State Route 34, Archbold, OH 43502 (419) 267-1233, ckrueger@NorthwestState.edu.

For further information on notice of non-discrimination, visit: <http://wdcrobcolp01.ed.gov/CFAPPS/OCR/contactus.cfm>. For the address and phone number of the office that serves our area, call 1-800-421-3481.

## Important Dates and College Phone Numbers

### 2017-2019 CLASS CALENDAR

#### Summer Semester 2017

June 5	Classes Begin
July 4	Holiday - College Closed
July 28	Last Day of Semester
July 31	Grades Due by 10 a.m.

#### Fall Semester 2017

August 23	Classes Begin
Sept. 2 - Sept. 4	Labor Day Holiday
October 18	Second 8 weeks begins
Nov. 22 - Nov 26	Thanksgiving Break-No Classes
December 11 - 16	Exam Week
December 16	Last Day of Semester
December 18	Commencement
December 18	Grades Due by 10 a.m.

#### Spring Semester 2018

January 16	Classes Begin
January 15	MLK Day - College Closed
March 12 - 17	Spring Break
March 19	Second 8 weeks begins
May 7 - 12	Exam Week
May 12	Last Day of Semester
May 12	Commencement
May 14	Grades Due by 10 a.m.

#### Summer Semester 2018

June 4	Classes Begin
July 4	Holiday - College Closed
July 27	Last Day of Semester
July 30	Grades Due by 10 a.m.

#### Fall Semester 2018

August 22	Classes Begin
Sept. 1 - Sept. 3	Labor Day Holiday
October 17	Second 8 weeks begins
Nov. 21 - 25	Thanksgiving Break-No Classes
December 10 - 15	Exam Week
December 15	Last Day of Semester
December 17	Commencement
December 17	Grades Due by 10 a.m.

#### Spring Semester 2019

January 14	Classes Begin
January 21	MLK Day - College Closed
March 11 - 16	Spring Break
March 18	Second 8 weeks begins
May 6 - 11	Exam Week
May 11	Last Day of Semester
May 11	Commencement
May 13	Grades Due by 10 a.m.

### College Phone Numbers Main Number: (419) 267-5511

#### Offices

<b>President's Office:</b>	(419) 267-1366
<b>Business Office:</b>	(419) 267-1311
<b>Admissions Office:</b>	(419) 267-1320
	<i>admissions@NorthwestState.edu</i>
<b>Financial Aid Office:</b>	(419) 267-1333
	<i>fnaid@NorthwestState.edu</i>
<b>Registrar's Office:</b>	(419) 267-1315
	<i>registrar@NorthwestState.edu</i> (419) 267-1395

#### Bookstore

<b>NSCC Bookstore:</b>	(419) 267-1256
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#### Library

<b>Library Services:</b>	(419) 267-1274
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#### Student Services Center

	(419) 267-1457
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*studentresources@NorthwestState.edu*

#### **Accessibility Services**

#### **Career Services**

#### **Educational Planning**

#### **Success Center**

#### **Student Activities**

#### Academic Divisions

<b>Vice President for Academics:</b>	(419) 267-1342
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#### **Allied Health, Business, &**

#### **Public Services:**

(419) 267-1258

#### **Arts & Sciences:**

(419) 267-1247

#### **Science, Technology, Engineering**

#### **Tech, and Math:**

(419) 267-1394

#### **Nursing:**

(419) 267-1246

#### **Industrial Technologies:**

(419) 267-1429

**NorthwestState.edu**



## About Northwest State Community College

### About Northwest State

Northwest State Community College is a state supported, public, two-year college which awards the following degrees: Associate of Applied Business, Associate of Applied Science, Associate of Arts, Associate of Individualized Studies, Associate of Science and Associate of Technical Studies.

### Progressive History

Northwest State Community College is located in the last region of the Buckeye State to be claimed by settlers. Since the Ohio Board of Regents approved the formation of the Four County Technical Institute, this community-serving institution has progressed steadily, discovering and meeting the diverse and ever-changing needs of Defiance, Fulton, Henry, Paulding, Van Wert and Williams Counties.

Studies in 1966 and again in 1967 established that a need for technical education existed and would grow in northwest Ohio. Consequently, in 1968, the Ohio Board of Regents approved the formation of Four County Technical Institute. The first college classes were held in the west wing of Four County Joint Vocational School beginning in September of 1969. In 1972, Northwest Technical College moved into its own building (the current 'A' Building). The change made it possible to accommodate 600 daytime students with laboratories, general classrooms, a large meeting room, commons, student services area and library.

Phase II of the College Master Plan in 1987 nearly doubled the size and capacity of the College. An open Atrium linked the original renovated structure and the new wings. The Business Technology Division would now occupy the 'B' Building, with those rooms available to other courses as needed. Student services, food services, a conference room and an exercise area would be housed in the 'C' Building. Also in the fall of 1991, a new Child Development Center was opened.

The State Community College status, earned in 1994, brought about growth which led to additional building and renovations that have continued on the present 80 acre site.

- In 1997, the Engineering Technology and Science Center was opened. The 54,000 square foot facility allowed the College to provide significantly upgraded science and technology laboratories, as well as additional equipment to better serve the workforce development training needs of northwest Ohio.
- In January 2002, a new 12,000 square foot Technology Training Center was opened. The Center included five technical labs that support the Plastics, Industrial Electrical and CAD Technologies.
- A total renovation of the first floor in the 'A' Building took place in 2003. At that time, the maintenance department moved to its own building, creating additional classroom space. The bookstore and food services areas were also enlarged, and more student seating was created.
- In 2004, classes were offered at a satellite location in Van Wert, Ohio.
- In the spring of 2007, the second floor of the 'A' Building was renovated to create a lab for the Medical Assisting program. In addition, five classroom and faculty offices were renovated.

- Classes began at a satellite location in Bryan, Ohio in 2008, a year which also saw the expansion of Custom Training Solutions (Workforce Development Division) to The University of Toledo's Scott Park Campus.
- In 2011 the Allied Health & Public Services Building was opened. This building featured a new, state-of-the-art nursing lab.
- In 2012, a total renovation of the second floor in the 'A' Building created space for new classrooms and study areas for students.
- In 2014, additional space was added to the 'E' Building, creating a new Advanced Manufacturing Training Center to meet workforce development needs for employers throughout the region.

### Accreditations and Approvals

Northwest State Community College takes pride in its accreditation by the Higher Learning Commission.

Professional approval and/or accreditations are given for quality programs. Many of the majors at Northwest State Community College have received this distinction.

The Human Services students who have successfully completed the major can apply for registration as a social work assistant with the State of Ohio Counselor, Social Worker and Marriage & Family Therapist Board, 50 West Broad St., Columbus, OH 43215.

The Ohio Department of Education has approved the Associate Educator Licensure Programs in Pre-Kindergarten and Educational Paraprofessional. Ohio Department of Education, 25 South Front Street, Columbus, Ohio 43215.

The Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Medical Assisting Education Review Board. CAAHEP 25400 U.S. Highway 19 North, Suite 158, Clearwater, FL 33756, (727) 210-2350.

The Associate Degree Nursing program is approved by the Ohio Board of Nursing and accredited:  
Accrediting Commission for Education in Nursing (ACEN)  
3343 Peachtree Road Suite 850  
Atlanta, GA 30326  
(404) 975-5000  
[www.acenursing.org](http://www.acenursing.org)

The Practical Nursing program is approved by the Ohio Board of Nursing.

The Business Technologies programs are accredited by the Accreditation Council for Business Schools and Programs, 11520 W. 119th Street, Overland Park, KS 66213, (913) 339-9356.

## Student Support Services

### Affiliations and Memberships

Northwest State Community College maintains memberships in national, regional and local professional organizations including: Accreditation Commission for Education in Nursing; Accreditation Council for Business Schools & Programs; American Association of Collegiate Registrars and Admissions Officers; American Association of Community Colleges; Association for Institutional Research; Association for the Advancement of Sustainability in Higher Education; Association of Community College Trustees; Association of Fundraising Professionals; (Association of Title IX Administrators); Behavioral Health Professionals of Northwest Ohio; Black Swamp Safety Council; (Council for Adult Experiential Learning); (Center for Innovative Food Technology); College & University Professional Association for Human Resources; Commission on Accreditation of Allied Health Education Programs; Community Colleges for International Development, Inc.; Council for Advancement and Support of Education; Council for Higher Education; Council for Resource Development; Social Worker and Marriage Family Therapist Board; ECHHO, Inc.; Fulton County Economic Development Corporation; Higher Learning Commission; (Kappa Beta Delta); League for Innovation in Community Colleges; Midwest Institute for International/Intercultural Education; National Association for Developmental Education; National Association of College and University Business Officers; National Association of Student Financial Aid Officers; National Council for Marketing and Public Relations; National League for Nursing; National Organization for Associate Degree Nursing; Northwest Ohio Regional Economic Development Association; Ohio Association for College Admission Counseling; Ohio Association of Collegiate Registrars and Admissions Officers; Ohio Association of Community Colleges; Ohio Coalition of Associate Degree Early Childhood Program; Ohio Coalition of Associate Degree Human Service Educators; Ohio Council of Associate Degree Nursing Education Administrators; Ohio Council of Chief Academic Officers; (Ohio Council of Student Affairs Officers); Ohio League For Nursing; (Ohio Two Year College Career Services Association); Paulding County Economic Development; (Phi Theta Kappa); (Sloan Consortium); Williams County Economic Development Corporation.

Chambers of Commerce Memberships: Archbold, Bryan, Defiance, Delta, Hicksville, Montpelier, Napoleon/Henry County, Paulding, Swanton, Toledo, Van Wert, Wauseon, and Whitehouse.

### NSCC Mission, Vision and Values

#### Mission:

To serve by providing access to excellent and affordable education, training, and services that will improve the lives of individuals and strengthen communities.

#### Vision:

Northwest State Community College will be an innovative leader in education and training, a first-choice institution that empowers individuals and communities to achieve a sustainable quality of life.

#### Values:

Integrity - We believe that honesty, respect, and accountability are the basis of building trust.

Learning - We believe that the acquisition and application of knowledge is the key to success, and to that end, we provide access to greater opportunities through education, training, and services.

People - We believe in the power of teamwork, bringing people of diverse backgrounds and communities together to excel.

### Institutional/General Education Learning Outcomes

Graduates from Northwest State Community College will become professional, lifelong learners and responsible global citizens through achievement of the following outcomes:

1. **Communication** – Graduates from Northwest State Community College will demonstrate effective communication skills.
2. **Computation** – Graduates from Northwest State Community College will perform basic algebraic problem-solving and interpret and communicate numerical data.
3. **Critical Thinking** – Graduates from Northwest State Community College will comprehend the implications of a topic or problem, draw on appropriate evidence, and construct well-reasoned conclusions.
4. **Diversity** – Graduates from Northwest State Community College will demonstrate awareness of the impact of cultural differences.
5. **Sustainability** – Graduates from Northwest State Community College will evaluate the impact of economic, political, social, and/or ecological systems on this and future generations.

### Success Center

The Success Center is located on the first floor of the 'A' Building just inside the east entrance doors of the library, and is open during the day Monday through Friday to assist students. The Success Center offers free assistance to students experiencing difficulty with a course despite regular attendance and hard work. Students interested in receiving tutoring services are encouraged to come to the Success Center and request assistance.

The Success Center houses walk-in academic labs (Accounting, Nursing, Math, Writing, and Life Sciences), Tutoring Services, Make-up Testing Services, and Accessibility Services.

For assistance regarding a learning disability or physical challenge, a student will need to provide recent documentation of the disability. For more specific information regarding the procedure for obtaining assistance, please see the next section.

### Accessibility Services (A105B)

Under the Americans with Disabilities Act and Section 504, a student with a disability may obtain assistance to help achieve educational goals. The College is committed to providing qualified students an equal opportunity to access the services appropriate to the student's needs. No student shall, on the basis of his or her disability, be excluded from participation, be denied the benefits of, or otherwise be subject to discrimination under any College program or activity.

Any student who wishes to investigate available college resources should first meet with the Accessibility Services Coordinator. To be qualified for assistance regarding a disability, a student will need to provide recent documentation of the disability from a qualified professional. Documentation should be submitted as soon as possible, preferably at least three months prior to the semester start date. Each student is expected to:

## Student Support Services

1. Schedule an appointment with the Accessibility Services Coordinator.
2. Apply for accommodations and other aids as necessary, and in a timely manner.
3. During the first week of class, meet with the instructors and discuss implementation of the accommodations.
4. Make arrangements with instructors and Success Center Coordinator for testing accommodations, if applicable.

### Library Services

The Library has many resources available for students: books, print journals, DVDs, research databases, interlibrary loan service, access to other college resources through OhioLINK, and individual and group study space. The N card (or other photo ID) is needed for checking out materials. For more information call (419) 267-1274 or email [library@northweststate.edu](mailto:library@northweststate.edu)

The following are especially helpful to students working on class papers and projects:

- Access to the resources of over 90 libraries in the state of Ohio
- On-demand electronic delivery of full-text journal articles
- 100+ research databases on a variety of subjects
- Personalized research assistance on request (ask at the circulation desk, call, or send us an email)

### Career Services (C140A)

The Career Services Office offers a variety of services to help students with their educational goals. Whether you are confident in the career path you have chosen, or you have some uncertainties about your major, we can help.

We specialize in career development, the process of helping you identify, plan for, and achieve your career goals. This is achieved by offering information, advice, training and resources designed to help you select an educational path that leads to a financially rewarding and personally satisfying career. These services are available to currently enrolled students and alumni.

Career Services assists students in finding jobs while pursuing their degrees or upon completion of a program. This includes assistance in planning their job search, resume development and improving interviewing skills. Career Services also assists employers who wish to post job listings on Northwest State's online job board.

To look into what jobs are currently in -demand and to look toward the future, our own on-line job board, JobsNET and the state Ohio Means Jobs boards may be used as well as state and national labor market information.

Visit Career Services on Northwest State's website for more information!

### Internship Education

Internship Education combines practical work experience with an academic program. This combination can create an excellent learning environment in a paid or unpaid experience for the student. If the student is already employed in their field of study, the internship program may allow him/her to receive college credit for the work the student is currently doing. The internship duties need to be consistent with the student's program of study and should include approximately 100 hours per credit hour. For further information, contact Dr. Larry Zachrich in A101F.

### Educational Planning and Retention

At Northwest State we encourage all students to have an educational plan, a tool that can help identify goals, summarize strengths and weaknesses and link to campus support systems.

Whether you are sure of your academic major or completely undecided on your area of study, educational planning may be able to assist you as a student at NSCC. Contact the main Student Services office at (419) 267-1242 to request an appointment.

### Student Activities

All students are encouraged to participate in campus-sponsored activities outside of the classroom. The Student Body Organization plans and coordinates an ongoing calendar of activities which are promoted through various campus announcements.

### Student Organizations and Activities (C140A)

#### Students for Community Outreach & Awareness (SCOA)

SCOA is a social action group that is devoted to bringing attention and raising awareness about some of the pressing social issues in our society and community. This is done through educational activities or engaging in projects that help the local community.

#### Student Body Organization (SBO)

SBO is the representative student government at Northwest State Community College. This group is responsible for promoting academic, cultural, recreational and social activities for students. Student members coordinate and plan activities. Membership is open to all students. Regular meetings are held at which all students have a voice and a vote in the conducting of business.

#### Phi Theta Kappa (PTK)

PTK is an honors and service organization for students attaining a 3.5 GPA after completing 18 or more credit hours. Students are invited to become members and provide letters of recommendation from faculty.

#### Kappa Beta Delta (KBD)

KBD is a national honor society for students in a Business Technologies program who maintain a 3.5 GPA after completing 18 or more credit hours. Students are invited to become members and provide letters of recommendation from faculty.

#### Alumni Association

Membership in the Northwest State Alumni Association is available to all graduates of the College. The Alumni Association's mission is to engage alumni interest while promoting loyalty and strengthening relationships with students, community and alumni. For more information, contact the Director of Development at (419) 267-1460.



## Student Support Services

### U.S. Military and Service Members

Northwest State Community College is proud to support the educational and career goals of the local veteran community. The Registrar's Office helps students apply for the various GI Bills, maintain eligibility and troubleshoot payment and other issues. The certifying official submits enrollment and tuition information to the VA Regional Processing Office and/or to the student's Vocational Rehabilitation counselor. In addition, the Certifying Official serves as a central resource regarding other programs and resources available to the veterans and military-connected students both on campus and in the surrounding community. Stop by room C120 or email registrar@northweststate.edu for assistance.

NSCC has a single point of contact for veterans and active duty service members that serve as a pre- and post-admission advising resource to help them understand what is involved in earning college credit for their military training, experience, and coursework; learn about their options; collect the necessary documentation; and make decisions about the various education and training pathways available in Ohio. Please contact Todd Hernandez at thernandez@northweststate.edu or 419-267-1445.

### U.S. Military and Service Members – Priority Registration

In June of 2014, Governor Kasich signed House Bill 488 to help veterans and service members. One of the provisions includes priority registration for veterans and service members. At NSCC priority registration means veterans and service members can register beginning at 6:00 P.M. on Friday through 11:59 P.M. on Sunday before open registration begins. Once open registration begins veterans and service members will compete for class spaces along with all other students.

Additional information can be found at [https://ohiohighered.org/valuing\\_ohio\\_veterans](https://ohiohighered.org/valuing_ohio_veterans).

The term “veteran or service member” refers to an individual who:

1. Has served in the United States Armed Forces, including a reserve component and the National Guard, and
2. Was discharged or released from such series with a condition other than dishonorable.

The DD214 Member page 4 must identify a period of duty OTHER THAN SOLELY FOR TRAINING. Reservists must have participated in a deployment or have completed their initial reserve obligation. Active duty service members who have completed their initial obligated service should send a letter from their command stating such along with their dates of service.

To exercise this benefit, complete the Priority Registration form and send a copy of the Member 4 section of your DD214 (indicating character of discharge) to the Registrar's Office by 4 P.M. the Wednesday before priority registration begins. Service members currently receiving VA benefits are already included in prior registration.

Contact the registrar's office for the priority registration form at 419-267-1395 or stop by room C120.

### Child Development Center

Northwestern Ohio Community Action Commission's Head Start Program offers free preschool to children ages three to five years old at the Child Care Center, located on the campus of Northwest State Community College. The program:

- Prepares children for kindergarten success
- Provides healthy meals and snacks
- Is free to families who meet the income guidelines
- Has transportation available in most areas
- Offers full-day classes (6 hours)

To complete an application, call the NOCAC Central Office at 419-784-5136 ext. 01140.

### NSCC Bookstore

For the convenience of the students, a well-stocked bookstore is available on campus. The bookstore hours are Monday – Thursday 7:45a.m to 6:00 p.m. and Friday 7:45a.m to 4:00 p.m. In addition to new, used and rental textbooks, the bookstore also offers class supplies and materials, laptops and software, clothing items and grab-and-go snack and food items. The cost of books and supplies is separate from, and in addition to, instructional fees.

### Food Service

Food Service offers dining options in several locations throughout campus. The Snack Bar, located in the 'A' Building, is open Monday-Thursday from 7:45 a.m. to 1:30 p.m. The Snack Bar features gourmet coffee drinks and made-to-order breakfast as well as lunches. The NSCC Café located on the 2nd floor in 'C' Building, offers a salad bar and daily specials from 10:30 a.m. to 6:00 p.m. The salad bar closes at 1:30 p.m. For your convenience, cold sandwiches and salads are also available in the NSCC Bookstore.

### Student Facilities

The Fitness Room, located in E2005, is for use of students and employees of Northwest State Community College.

M - TH	7:30 a.m. - 10:00 p.m.
Friday	7:30 a.m. - 3:30 p.m.
Saturday	8:00 a.m. - Noon

Game Area - Atrium

Food Court - 'A' Building

Shower and Locker Rooms - Women's - E2007

Shower and Locker Rooms - Men's - E2007

### Student Lockers

Atrium and fitness room lockers can be rented through the Student Activities Office. Rental by the semester or the entire academic year is available on a first-come, first-served basis. In case of a campus emergency, authorized College and/or emergency personnel may open these lockers.

### Student N Cards

All students are required to have a Student N Card. These cards are used to identify individuals as a current NSCC student in all administrative and advising offices, and allows a student to participate in college sponsored activities both on and off campus. Along with use as an I.D. card, a student can load money on the N Card through the Bookstore for use in the Snack Bar and Bookstore.

## Admission Requirements

There is no charge for a Student N Card. However, if the card is lost, there will be a \$10.00 replacement fee. Student N cards are available through the Campus Police Department located in the Atrium.

### Quick Alert Emergency Communication System

Northwest State Community College utilizes the Quick Alert system as a fast and reliable means of sending urgent information to the campus community. It is important that all students login to their Quick Alert account to update their contact information and communication preferences. This can be done by logging on to myNSCC and clicking on the Quick Alert link in the middle of the Home tab.

Announcements made through the Quick Alert system include, campus emergencies, school closings and important student information and reminders.

### Adverse Weather – Closings or Delays

Northwest State Community College will operate under the premise that it will be in session according to the College calendar. However, the president or administrative designee will have the prerogative to close school (including off-campus sites) under extenuating circumstances, and under such conditions the students will not be expected to report. Such closing information will be sent via Quick Alert to participating students, and will be announced over local radio and television stations. You will also find closing information at NorthwestState.edu or through a recorded message at (419) 267-5511.

### Admission

Admission to Northwest State Community College is open to any high school graduate or holder of a high school equivalency statement (GED). A final, official high school transcript or GED should be presented at the time of application. Some programs may have additional admission requirements including an application and appropriate GPA.

All incoming students with no prior college experience are required to take the ACCUPLACER Assessment, or submit ACT scores, for course placement prior to enrolling in college-level courses.

Students are not required to meet with an admissions recruiter before enrolling at NSCC, but you may find it helpful. A recruiter can suggest opportunities at the College, explain entrance requirements and answer any questions you may have about reaching your career goals. Students are encouraged to apply at least one semester prior to their intended start date.

### International Student Requirements

Before Northwest State can process an international student's application for admission and issue an I-20, the following documents are necessary:

1. A completed Northwest State Community College application for admission.
2. A certified true copy of a student's complete secondary school record, translated into English.

3. A certified true copy of any college or university studies the student may have completed, translated into English.
4. A photo copy of the student's VISA/PASSPORT and/or residency card and the I-94.
5. All international students wishing to transfer to NSCC from another U.S. institution must prove to be in good standing and have maintained a cumulative G.P.A. of 2.00 at the previous institution before acceptance to NSCC will be granted.
6. Proof of competency in English language usage – The student must have TOEFL PBT scores of 550 or higher, or TOEFL iBT of 70 or higher. TOEFL scores should be submitted directly to the Admissions Office. ACCUPLACER and computer assessments are required once the student arrives at Northwest State.
7. A certified statement of financial stability by a banking institution official which gives proof of the student's assets from parents, relatives, guardians or the student. Proof of personal responsibility for the student must accompany the banking institution statement of financial stability. All financial statements must be converted into American dollars before submission to the College.
8. After the above has been completed, and if the student has been accepted by Northwest State Community College, a deposit of one year's tuition plus book allowance (\$11,000.00) must be sent to the college before an I-20 will be issued. An additional \$2,000 should be brought for spending money upon entering the United States.

The complete international student policy and required forms can be found online at NorthwestState.edu/apply-now or in the Admissions Office.

### Course Placement (ACCUPLACER/ACT)

Prior to registration, all degree or certificate seeking students should be evaluated or show evidence of successful completion of college-level coursework in math, reading and English through ACT scores or the ACCUPLACER Assessment. An appointment is required for the ACCUPLACER Assessment. Contact the Admissions Office at (419) 267-1320 or go online to NorthwestState.edu/testing to schedule an assessment.

Students who receive a score of 8 or higher on the WritePlacer portion of the ACCUPLACER Assessment may choose to submit a writing sample to qualify for placement into ENG112-Composition II. The writing sample will be reviewed by full-time faculty members in the English department. If approved, the testing coordinator will notify the student of the following placement options available to them:

- Take ENG111 and ENG112, or
- Take ENG112 and another writing intensive ENG course. The second writing course will be substituted for ENG111, but cannot be used to meet a Humanities requirement. The approved list of writing courses is maintained by the Dean of Arts & Sciences.



## Admission requirements

### ACCUPLACER Assessment Retesting

1. Students may have one retest using either an alternate form of the ACCUPLACER Assessment or a Departmental Proficiency Test (but not both). College Credit Plus students may have one retest per year.
2. A retest must be requested prior to enrolling in related developmental courses.
3. Retesting must be approved by the Dean of Arts & Sciences or designee.
4. There must be at least a one month waiting period between testing dates involving a Departmental Proficiency test only.
5. Placement test results are valid for three years. After three years, retesting is recommended and the fee is waived.
6. Students may choose to retake the entire ACCUPLACER Assessment or choose specific sub-tests for retesting.
7. A \$20.00 retesting fee will be charged for the ACCUPLACER Assessment and a testing fee will be charged for the Proficiency Test.

### College Math Proficiency Policy

All associate degree programs offered at Northwest State Community College require completion of a college-level mathematics course (i.e., not developmental or remedial). All one-year certificate programs offered at Northwest State Community College require graduates to demonstrate a minimum math proficiency at the level of MTH080 - Review of Beginning Algebra. Proficiency can be demonstrated on the placement test at the time of entry, by passing a proficiency test, by successfully passing the course MTH080 - Review of Beginning Algebra, or by being a recent high school graduate (within the last six years) and have taken two (2) or more high school algebra courses (not including any pre-algebra or geometry courses) with grades of "C" or better in each semester.

### Student Orientation Advising and Registration

SOAR is a required program for new certificate or degree seeking students at Northwest State Community College. SOAR is an online program that is completed prior to registering for classes the first semester. For questions about SOAR please call (419) 267-5511 or email [orientation@NorthwestState.edu](mailto:orientation@NorthwestState.edu).

### Academic Advisors

In an effort to foster individualized attention, each student is assigned an academic advisor. An advisor can provide guidance regarding class scheduling and program requirements or discuss academic problems. Advisors are available to answer any questions you may have regarding class schedules or other College policies and procedures. Each advisor has regular office hours set aside for student appointments.

### Classification of Students

Applicants for admission to the College may elect one of the following student classifications:

#### Certificate Seeking Student

A student who has indicated, at the time of application, the intent to study toward a short-term or one-year certificate program and who has fulfilled all admission requirements.

#### Degree Seeking Student

A student who has indicated, at the time of application, the intent to study toward an associate degree and who has fulfilled all admission requirements.

#### Early Admit Student

A high school student who has been recommended by his/her guidance counselor or principal to take college courses for credit.

#### College Credit Plus Student

The State of Ohio allows area students attending public school (must reside in Ohio) to enroll in college-level coursework prior to graduation from high school under the College Credit Plus Program. Students in grades 7-12 who test into college-level coursework with their ACT or ACCUPLACER scores may enroll in college classes concurrently with secondary school enrollment. This program allows qualified students to earn college credit, or both high school and college credit. Secondary grade students in a nonpublic school or home-instructed may participate in the College Credit Plus program if the chief administrator of such the non-public school or the parent notifies the Ohio Department of Education by the first day of April prior to the school year in which the school's students will participate.

The student enrolling in College Credit Plus is not responsible for paying tuition, fees or textbook charges. Students may enroll in any semester including summer, for a maximum of 30 credits per academic year. Students exceeding the 30 credit hour limit will have the option to self-pay.



#### Guest/Transient Student

A student who is attending another institution of higher education and enters NSCC for specific courses which have been approved in writing by the other institution's vice president or registrar.

#### International Student

A student from another country who has met the requirements of the Student & Exchange Visitor Information System (SEVIS) as well as the requirements of NSCC. An international student must meet with an admissions representative before being admitted.

#### Non-Degree Student

A student who has indicated, at the time of application, the intent to pursue selected courses (i.e. personal enrichment).

## Ohio Transfer Policy

### Transfer Student

Either a “degree” or “non-degree” student who has indicated, at the time of application, the interest to transfer selected general studies courses or a full degree program to a four-year bachelor’s degree program.

### State of Ohio Policy for Institutional Transfer

The Ohio Board of Regents, following the directive of the Ohio General Assembly, developed a statewide policy to facilitate students’ ability to transfer credits from one Ohio public college or university to another in order to avoid duplication of course requirements. Since independent colleges or universities in Ohio may or may not be participating in the transfer policy, students interested in transferring to independent institutions are encouraged to check with the college or university of their choice regarding transfer agreements. For additional information, please visit [www.transferology.com](http://www.transferology.com).

The University Center hosts several four-year institutions every month. Representatives are available for one-on-one advising for students interested in transferring to their institution. The schedule is available on the plasma screen near C150C.

### Transfer Module, Transfer Assurance Guides, and Military Transfer Assurance Guides

The Ohio Department of Education’s Transfer and Articulation Policy established the Transfer Module, which is a subset or entire set of a college or university’s general education program. The Transfer Module consists of 54 to 60 quarter hours or 36 to 40 semester hours of courses in the following areas: English, Mathematics, Arts and Humanities, Social and Behavioral Sciences, Natural and Physical Sciences, and Interdisciplinary Study.

A Transfer Module completed at one college or university will automatically meet the requirements of the Transfer Module at another college or university once the student is admitted. Students may be required, however, to meet additional general education requirements at the institution to which they transfer. For example, a student who completes the Transfer Module at Institution S (sending institution) and then transfers to Institution R (receiving institution) is said to have completed the Transfer Module portion of Institution R’s general education program. Institution R, however, may require additional general education courses beyond the Transfer Module.

Since many receiving institutions require general education courses within or beyond the Transfer Module, students are encouraged early in their academic careers to meet with an academic advisor at the institution to which they plan to transfer. The Ohio Department of Higher Education (ODHE) has also approved Transfer Assurance Guides (TAGs) for several academic majors. Each TAG identifies courses that are required for particular areas of study (for example, Biology, Education, and History four-year degrees). Students completing TAG-approved coursework will receive transfer credit at Ohio institutions that fulfill partial degree requirements for these majors. For more information on TAGs for specific fields of study, see the ODHE website at [www.ohiohighered.org](http://www.ohiohighered.org).

### Military Transfer Assurance Guide (MTAGs)

The University System of Ohio is committed to the acceptance and awarding of college credit for training and experience in the United States Armed Forces or National Guard, as long as it has been approved by the American Council on Education or a regional accrediting body, such as the Higher Learning Commission. More information can be found on the University System of Ohio website.

### Responsibilities of Students

In order to facilitate transfer with maximum applicability of transfer credit, prospective transfer students should plan a course of study that will meet the requirements of a degree program at the receiving institution. Specifically, students should identify early in their collegiate studies an institution and major to which they desire to transfer. Furthermore, students should determine if there are language requirements or any special course requirements that can be met during the freshman or sophomore year. This will enable students to plan and pursue a course of study that will articulate with the receiving institution’s major. Students are encouraged to seek further information regarding transfer from both their advisor and the college or university to which they plan to transfer.

### Appeals Process

A student disagreeing with the application of transfer credit by the receiving institution shall be informed of the right to appeal the decision and of the process for filing the appeal on the Transfer of Credit Evaluation form. Each institution shall make available to students the appeal process for that specific college or university.

If a transfer student’s appeal is denied by the institution after all appeal levels within the institution have been exhausted, the institution shall advise the student in writing of the availability and process of appeal to the state-level Articulation and Transfer Appeals Review Committee.

### Appeals Review Committee

The Appeals Review Committee shall review and recommend to institutions the resolutions of individual cases of appeal from transfer students who have exhausted all local appeal mechanisms concerning applicability of transfer credits at receiving institutions.

### Conditions for Transfer Admission

The policy encourages receiving institutions to give preferential consideration for admission to students who complete the Associate of Arts or Associate of Science Degree with a cumulative grade point of 2.0 or better for all previous college-level courses.

The policy also encourages receiving institutions to give preferential treatment to students who have not earned an Associate of Arts or Associate of Science Degree, but who have earned 60 semester hours or 90 quarter hours with a cumulative grade point of 2.0 or better for all previous college-level courses.

The policy further encourages that students who have not earned an Associate of Arts or Associate of Science Degree, or who have not earned 60 semester hours or 90 quarter hours with a cumulative grade point of 2.0 or better for all previous college level courses, be eligible for admission as transfer students on a competitive basis.

## Acceptance of Transfer Credit

Students who have completed the Associate of Arts or Associate of Science Degree with a cumulative grade point of 2.0 or better will receive transfer credit for all college-level courses in which a grade of “D” or better has been earned. Students who have not earned an Associate of Arts or Associate of Science Degree will receive transfer credit only for those college-level courses in which a grade of “C” or better has been earned.

Admission to a given institution, however, does not guarantee that a transfer student will automatically be admitted to all majors, minors or fields of concentration at the institution. Once admitted, transfer students shall be subject to the same regulations governing applicability of catalog requirements as all other students. Furthermore, transfer students shall be accorded the same class standing and other privileges as all students on the basis of the number of credits earned. All residency requirements must be successfully completed at the receiving institution prior to the granting of a degree.

## Transfer Degrees

Through articulation agreements with four-year colleges and universities in the area, Northwest State Community College has developed transfer degrees/programs to provide students the opportunity to complete the first two years at Northwest State and then transfer to another college or university to complete the last two years of a baccalaureate degree. Bluffton College; Bowling Green State University; Defiance College; Franklin University; Lourdes College; and The University of Toledo are a few of the many options available to Northwest State Community College students. NSCC offers the Associate of Arts and the Associate of Science Degrees for undecided transfer students.

Many students have found that tuition and fees at Northwest State are less than those of four-year institutions. This, coupled with small classes and a low student-to-instructor ratio, makes NSCC an attractive alternative for students wishing to obtain the first two years of a bachelor’s degree.

## Financial Aid Office

Northwest State Community College offers several types of financial assistance to students. This aid includes grants, loans, scholarships and work-study opportunities. A typical Financial Aid package is a combination of several of these sources.

Financial assistance is based on financial need and academic ability, although some scholarships are given on the basis of academic achievement only. All forms required to apply for Financial Aid may be obtained through the Financial Aid Office or online at [NorthwestState.edu](http://NorthwestState.edu).

## Financial Aid Application Procedures

Applying for financial aid works best when initiated several months prior to the desired semester of enrollment. Students can apply for financial aid by visiting the U.S. Department of Education financial aid website at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). Completing the Free Application for Federal Student Aid (FAFSA) online is very efficient and convenient. Applications are available beginning October 1 for the upcoming academic year and should be submitted as soon as possible. NSCC’s FAFSA priority date is March 31 for the following academic year.

- Apply for a FSA ID at [fsaid.ed.gov](http://fsaid.ed.gov).
- File your FAFSA electronically at [www.fafsa.ed.gov](http://www.fafsa.ed.gov) and include NSCC’s Title IV School Code 008677

## Determining Eligibility

Financial aid eligibility at NSCC is based on the parents’ and/or students’ ability to pay relative to the cost of education. The ability to pay is determined through federal methodology to calculate an Expected Family Contribution (EFC).

To receive any type of aid, a student must:

- Be a United States citizen or an eligible non-citizen
- Have a high school diploma, completed a high school education in a homeschool setting that is approved under state law, or are enrolled in an eligible career pathway program and successfully completed one of the ATB alternatives, or GED
- Comply with Selective Service requirements (male students)
- Be enrolled as a regular student in an eligible program. Eligible programs for federal student aid at NSCC include Associate degrees and Certificate Programs
- Not be in default on any student loans including Stafford, Perkins, or PLUS loans
- Not owe a refund to any Federal programs (PELL, SEOG, ACG, SMART, TEACH)
- Comply with the Anti-Drug Abuse Act. Eligibility for any of the programs may be suspended or terminated by a court as part of a conviction for possessing or dispensing illegal drugs
- Maintain satisfactory academic progress
- Accurately verify income and other application data if requested by the Financial Aid Office
- Agree to use any federal student aid received for educational purposes
- Meet all additional federal or state requirements

## Verification of Information

Some applicants are selected at the federal or institutional level for verification of information contained on their application (FAFSA). This means that the Financial Aid Office is entitled to request additional information from you in order to determine your eligibility. Failure to provide this requested documentation would stop further processing.

## Award Eligibility

The three components used to determine your eligibility to receive financial aid funding are:

1. Cost of education or allowable expenses
2. Expected family contribution
3. Other financial resources available to you

## Cost of Education

This is the estimated average amount for expenses at NSCC according to your residency classification, hours enrolled and program of study. This budget uses average costs and includes everything from tuition and fees to miscellaneous expenses. Expense budgets may also include adjustments for childcare and costs related to a disability or other non-discretionary expenses. Since expense budgets reflect average costs, you may spend more or less than the amounts allowed; however, you may pay more for your personal expenses than the amount budgeted. The amount you spend, excluding tuition and fees, is up to you and depends on your own individual lifestyle, priorities, and obligations.



## Financial Aid

To obtain a copy of the current year's cost of attendance, please contact the Financial Aid Office, or you can view your student specific cost of attendance on your myNSCC account. The components included in NSCC's cost of attendance are:

- **Tuition and Fees:** Average charges for basic instructional costs and mandatory fees. Actual fees paid may vary based on the number of credits carried each semester.
- **Books and Supplies:** A standard allowance for required books and supplies.
- **Commuting Costs:** A modest allowance for transportation to and from NSCC.
- **Room and Board:** A five-county area average amount for housing, utilities and food charges.
- **Personal Expenses:** Entertainment, medical, laundry, toiletries, clothing, etc.

If attendance is less than or greater than nine months, or if enrollment is less than 12 credit hours per semester, budget components will be prorated accordingly. Please remember, financial aid often cannot meet all of your costs while attending NSCC, so it is very important for you to manage your financial resources wisely.

### Expected Family Contribution (EFC)

Since financial aid is designed to assist with your educational expenses, the EFC is the amount that you and your parents (if applicable) are expected to contribute toward your costs. This amount is determined from information provided on your Free Application for Federal Student Aid (FAFSA) according to a formula established by Congress. This is not the amount you will owe NSCC, it is an estimated contribution.

### Other Financial Resources

This component represents other known and expected financial resources you will have available to assist you with your educational costs, such as scholarships, Veterans Education Benefits, WIA, TAA, etc.

Your eligibility (financial need) is calculated by subtracting your Expected Family Contribution and Other Financial Resources from your allowable Costs of Education.

### Awarding Aid

Your award package is based on a combination of funds available and your eligibility. Your award package may not include funds from all aid programs. Some funds carry restrictions, and some are limited as to amounts that can be awarded. Financial aid packages are based on the level of eligibility from highest to lowest and files are worked generally in the order received by the Financial Aid Office.

The Federal Pell Grant is the first program awarded if you are eligible. The next programs awarded are grants (federal & state) and scholarships. NSCC funds are limited and awarded until funds are committed. Then Stafford Loans are awarded to students who indicate on the FAFSA and student data form they want loans. PLUS Loans are the last category of aid to be awarded. PLUS (Parent) loans are awarded only when requested by the student

or parent after the student applicant receives his/her award letter. Federal Work Study funds will be awarded to students on a case by case basis, after a job on campus has been secured by the student.

### Your Award Package

Your financial aid award package is designed to meet as much of your financial eligibility as possible. All awards are contingent on the following:

- Availability of funds from federal, state and institutional sources (if applicable).
- Accuracy of information provided on your application by you and/or your parents or spouse.
- Adjustments to your award when our office receives information that affects your eligibility. Any aid you receive, in addition to that listed on your award offer which exceeds your unmet need, will result in an adjustment in your award(s) from NSCC.
- Satisfactory academic progress toward your degree.
- Compliance with our requests to provide additional documentation to support your application.
- Eligibility to receive funds i.e., you are a U.S. citizen or eligible non-citizen, you have signed all required documentation, and you are enrolled in a degree-seeking program of study.

### Accepting or Declining Your Award

Unless otherwise indicated, the awards listed on your Financial Aid Award Notification represent an offer based on an estimated enrollment of full-time. Your aid will pay to your student account based on your actual enrollment and then be adjusted upon freezing of credits. **You must accept or decline each part of your aid package.** It is important that you make your decision, sign the award offer, and submit/return the document by the deadline date. If you want to accept a lesser amount than the amount awarded, indicate the amount you wish to request. This is very important, particularly on the loan amounts. Think about the amount and type of loan being accepted. If you have more than one type of loan, you will likely be required to repay those loans simultaneously. Do not borrow more than you absolutely need. The additional unsubsidized loan may be requested by completing the student loan request form.

**Awards will not be sent by paper if you are a current student and have a current NSCC email address. You will accept your awards electronically on your myNSCC account. An email will be sent including the steps to accept your awards. You will be able to accept, reject or adjust your awards electronically.**

If you have unique circumstances which may affect your costs of attending NSCC, please contact the Financial Aid Office. We may be able to re-evaluate your eligibility based on special conditions.

### Financial Aid Programs

Financial aid is funding in the form of grants, employment, loans and scholarships available to students to help pay the cost of attending the institution of their choice. Financial aid comes from the Federal Government, which is the largest provider of aid, as well as state governments, the schools themselves and a large variety of other public and private sources.

The following is a source of information concerning federal

## Financial Aid

financial aid for which you may be eligible. Current funding may vary from year to year and current programs can be found on the Department of Education website.

**Federal Pell Grant:** A Federal Pell Grant, unlike a loan, does not have to be repaid. Pell Grants are awarded only to undergraduate students who have not earned a bachelor's or professional degree. The maximum Pell Grant **amounts can change from year-to-year, for specific yearly amounts see the Financial Aid Office.** The lifetime limit for the Federal Pell Grant is 12 full-time semesters. The amount you receive will depend on your expected family contribution (EFC), cost of attendance, and whether you are a full-time or part-time student. You may not receive Pell Grant funds from more than one school at a time. Pell Grant funds will be credited to your student account.

**Federal Supplemental Educational Opportunity Grant (FSEOG):** FSEOG is for undergraduates with exceptional financial need, with priority being given to students who receive Federal Pell Grants. FSEOG does not have to be paid back. Funds will be credited to your expenses in the registration process in the Business Office. Students must be enrolled in at least 6 credit hours.

**Student Employment & Work-Study:** The Career Services Office, located in the "C" Building, assists students attending NSCC to locate employment. Both work-study and other part-time employment opportunities are listed with Career Services. On and off-campus employment opportunities are available.

Work-study eligibility will be determined once you have secured a work-study position. In order to be eligible, you must have completed the FAFSA and received your financial aid award notification from the Financial Aid Office. You must be enrolled in at least 6 credit hours Fall and Spring semesters, be maintaining a 2.0 cumulative GPA, and comply with the Financial Aid Satisfactory Academic Progress Policy. For more information about securing a work study position please contact the Career Services Office. Work-study awards are not credited to your expenses in the Business Office. You are paid on scheduled pay days for the actual hours worked during the preceding month. When you have earned the amount of your work-study award, your employer may decide to continue your employment as a regular student employee.

**William D. Ford Federal Direct Loan (Direct Loan) Program:** Loans made through this program are referred to as Direct Loans. Eligible students borrow directly from the U.S. Department of Education at participating schools. Direct Loans are either subsidized or unsubsidized Direct Stafford Loans (also known as Direct Subsidized Loans and Direct Unsubsidized Loans). With a subsidized loan, the Federal Government pays interest on the loan while you are attending school. If you receive an unsubsidized loan, you will be charged interest from the time the loan is disbursed until it is repaid in full. If you allow the interest to accumulate, it will be capitalized (added to the principal which means the loan "grows") and the amount you repay can become very expensive. If you choose to pay the interest as it accumulates, you will repay less over the life of the loan. You can receive both a subsidized and an unsubsidized loan for the same enrollment period.

- The interest rates are determined by congress. The interest is charged on the loan from the date that the first disbursement is made until the loan is paid in full. For current rates, please contact the Financial Aid Office.
- The borrower must also pay a loan fee of 1 percent of

the amount borrowed, which is deducted from each disbursement. The loan fee is paid to the lending institution.

- Repayment of the principle balance begins after you graduate, leave school or drop below half-time enrollment. You have six months before payments begin. This is called a "grace period." Contact the Department of Education for more information about repayment options. Federal regulations require the maximum annual Federal Stafford Loan amount an undergraduate student may borrow to be prorated in cases where it is known that the student's remaining period of study will consist of less than one (1) academic year. The proration is based on a ratio of the number of credits enrolled divided by 24. The student will be asked to fill out a loan proration form for the financial aid office.
- Direct Loans will be credited to your student account.
- Students must complete the Free Application for Federal Student Aid (FAFSA).
- Students must be enrolled in at least 6 credit hours to qualify for a student loan.

**Direct Plus Loans (Parent Loan):** Federal PLUS Loans enable parents with good credit histories to borrow to pay the education expenses of their children. To be eligible, the child must be a dependent, undergraduate student enrolled at least half-time. The yearly borrowing limit on the PLUS loan is equal to the cost of education minus any other financial aid received.

- The interest rates are determined by congress each year and are typically a fixed rate. The interest is charged on the loan from the date that the first disbursement is made until the loan is paid in full.
- The borrower must also pay a loan fee. The loan fee is a percentage of the loan amount and is proportionately deducted from each loan disbursement. The loan fee is paid to the lending institution. The percentage amount varies depending on when the loan is first disbursed. For current loan fee rates, please visit <https://studentaid.ed.gov>.
- Repayment generally begins within 60 days after the loan disbursement. There is no grace period. This means that interest begins to accumulate at the time of the first disbursement and repayment of both interest and principal begins while the student is in school.
- Contact the Financial Aid Office for information on how to process this type of loan.

**Nurse Education Assistance Loan Program (NEALP):** This is a state program for nursing students who, upon completion of their education, plan to practice nursing in the state of Ohio.

- Based on financial need.
- A student may receive a maximum of \$3,000 per year, which may be renewed for a maximum of four years or total loan balance of \$12,000.
- After graduation, the student may be eligible for loan forgiveness at the rate of 20 percent per year and a maximum loan cancellation of 100 percent.
- Applications are available at the Ohio Department of Higher Education (ODHE) web site <http://regents.ohio.gov/sgs/index.php>. Applications are due June 1 of each year. Call the ODHE Grants and Scholarships Office at 1-888-833-1133 for more information.
- Students must complete the Free Application for Federal

## Financial Aid

Student Aid (FAFSA) and submit the results as part of the application.

**Ohio College Opportunity Grant (OCOG):** The Ohio Department of Higher Education administers the OCOG program, which provides grant money to Ohio residents who demonstrate the highest levels of financial need as determined by the results of the FAFSA.

- Ohio residents in an associate degree, first bachelor's degree, or nurse diploma program at an eligible Ohio institution
- FAFSA Expected Family Contribution (EFC) of \$2,190 or less and a maximum household income of \$75,000
- The initial FAFSA must be submitted by October 1
- Students are limited to 10 semesters or 15 quarters of state, need-based grant aid (including combination of OCOG and OIG)
- Students enrolled at community colleges are only eligible for OCOG during the spring semester and only if they were enrolled during the previous summer and fall semesters and have a limited (reduced) pell award remaining for the spring semester
- OCOG can only be used for tuition and general fees

**Scholarships:** Primarily two departments on campus, the Admissions Office and the Financial Aid Office, award scholarships. Committees make selections, and application information is available at each office.

Scholarships are awarded generally in the spring of each year for disbursement in the following year. These awards are made on the basis of academic achievement, financial need, or a combination of the two. Many scholarships have additional requirements as well. Institutional scholarships are provided to the institution by donors who specify the award criteria. The selection process is managed by a committee and awards are disbursed through the Financial Aid Office. Generally, the Admissions Office serves incoming student scholarships.

### Disbursement of Funds

Provided you meet all qualifications to receive financial aid funds; any scholarship, grant or loan awarded to you will be



automatically credited to your expenses (tuition, fees, and any books/supplies charged to account) and any other charges assessed by the institution.

If financial aid credited to your account exceeds allowable charges due for the term, a refund will be issued for the difference. The refund will usually be issued in week 7 of instruction of each term. See the Academic Calendar for exact dates. Students need to select their refund preference prior to the refund period in order to prevent delays of receiving their refund. Refund options include direct deposit into a personal checking or savings account, or direct deposit through a third-party account. Please see the Student Refund FAQ page on the college website for more details regarding student refunds.

Check your online fee statement carefully. Some types of financial aid appear on your student account as credits and others (such as work-study) are paid at other intervals. Compare your credits, which show your aid against your award letter, to reconcile funds awarded to you. NOTE: If for any reason you register for classes late or enroll for insufficient credits, your aid will be delayed and possibly adjusted. Financial aid funds will not be credited to your account until all required documents have been processed.

Please remember, fees and other charges must be paid when due or a late fee may be applied and/or your registration may be canceled. If your financial aid or outside payment (i.e. scholarship, TAA, WIA, etc) does not arrive in time for you to pay your fees and other charges, you are responsible for payment of your bill on the due date. If you have specific questions regarding charges, credits, release processes or student account refunds, please contact the Business Office at (419) 267-1311.

### Class Attendance

Your financial aid will pay to your student account based on the number of credits you are attending at the time of disbursement. Aid will pay to your account upon start of additional hours. This may result in a late refund.

### Freeze Date

NSCC financial aid uses a “freeze” date each semester to determine a student’s enrollment status for awarding financial aid. The number of credit hours in which a student is enrolled on the freeze date is used to calculate the amount of federal financial aid the student will receive. This means that if a student adds or drops classes before the freeze date, the amount of financial aid for which the student is eligible will be affected. If classes are added or withdrawn after the freeze date, the financial aid will not change. If you are enrolled in a late-starting class and you drop that class after receiving aid, you may be required to return a portion if not all of the aid you received. Exceptions to this policy are students receiving Stafford Loans who must be enrolled for a minimum of six credit hours at the time of loan disbursement, and students who withdraw and/or stop attending all of their classes. These students will have their financial aid recalculated based on their withdrawal date or last day of attendance.

### Attendance Verification

To be eligible for federal financial aid, attendance in class must be verified. Instructors will verify attendance on the 14th class day. Enrollment will be reported to the Registrar’s Office. If a student



is not attending class, his/her registration for the course(s) will be terminated and the student's aid will be adjusted accordingly.

### Withdrawing From NSCC

If you withdraw from all courses, either officially or unofficially, your aid will be terminated and a Return of Title IV calculation will be performed by the Financial Aid Office to determine the amount of aid you are eligible to receive. A copy of this refund/return of Title IV funds is available in the Financial Aid Office and online. If you received funds for which you were not eligible, you will receive notification from NSCC for repayment of those funds.

If you have any student loans, The Department of Education will be notified of your enrollment status change and you may enter a "grace period" or repayment status. In keeping with the terms of your loans, you are required to inform The Department of Education of changes in your enrollment status.

If you plan to return to NSCC, you must pay off your balance owing with the Business Office. In order to receive financial aid you must be meeting financial aid satisfactory academic progress. Please refer to the Satisfactory Progress Policy to determine your eligibility status for future applications for aid.

### Repeating Courses

Federal regulations limit the number of times a student may repeat a course and receive financial aid for that course. A student may receive aid when repeating a course that was previously failed (received a failing or unsatisfactory grade) regardless of the number of times the course was attempted and failed. A student may receive aid to repeat a previously passed course (grade of 'D' or higher) one additional time. Once the student has completed any course twice with a passing grade (grade of 'D' or higher), he/she is no longer eligible to receive aid for that course. This rule applies whether or not the student received aid for earlier enrollment in the course. A copy of this repeated course policy can be picked up at the Financial Aid Office or found online.

### Satisfactory Academic Progress (SAP)

To remain eligible for financial aid at NSCC, you must make satisfactory academic progress toward your degree objective. Satisfactory Progress is a condition for continued eligibility and is measured by the following factors:

1. **Grade Point Average (GPA):** Students must meet a cumulative grade point average requirement according to the number hours attempted. Two consecutive terms with a cumulative GPA below the allowed rate will result in "Suspension."

Cr. Hrs. Attempted	Cumulative GPA
1-15	1.4
16-30	1.6
31-45	1.8
46+	2.0

**Transfer Students:** Transfer credits do not count in the

calculation of the cumulative GPA but are included in the calculation of maximum "length of eligibility" for degree completion.

2. **Credit Hour Completion:** All aid recipients must successfully complete no less than 67 percent of all credits attempted cumulatively. Successful completion of classes means passing grades must be earned. Grades of F, W, I, U, UC, P, WF, WM, WP, NP, and NR do not count towards successful course completion. Two consecutive terms with less than 67 percent completion rate will result in "SUSPENSION" of eligibility, and the student will receive NO further aid.

Any combination of all F, W, I, U, UC, P, WF, WM, WP, NP, AND NR grades for the term with zero credits earned will result in IMMEDIATE suspension and will no longer be eligible to receive financial aid. Examples of completion rates are below:

Total Hours Attempted	Minimum Hours Required to Complete
42	29
24	17
12	9
9	7
4	3

3. **Length of Eligibility for Degree Completion:** For each program of study an institution must establish a maximum time frame in which a student is expected to complete his or her degree requirements. The maximum "length of eligibility" students are allowed is 150 percent of the actual credits required for their degree or program.

Degree Program	Average Credits	150%
Certificate	36 Cr. Hrs.	57 Cr. Hrs
Associates Degree	70 Cr. Hrs.	105 Cr. Hrs.

A copy of the Satisfactory Progress Policy is posted at the NSCC web site [northweststate.edu](http://northweststate.edu). You are responsible for knowing and understanding this policy thoroughly. The information in this policy provides more detailed instructions on how the institution monitors progress and how to exercise the appeal process.

### Special Circumstances

If you or your parent(s) have had a substantial change in family income or assets due to unemployment, disaster, disability, divorce or the loss of other compensation or benefits since applying for financial aid, you and/or your parent(s) may be eligible for special consideration. In addition, if you have non-discretionary expenses, which may affect your ability to meet educational expenses, you may ask for reconsideration to increase your eligibility. All requests must be documented and reasons for the exception must

## Fees and Refund Policy

be provided. If you or your parent(s) have special circumstances, please contact the Financial Aid Office for assistance with the process.

### Student's Rights and Responsibilities

- You have the right to privacy. All records and data submitted with your application for financial aid are treated as confidential information.
- You have the right to a complete explanation of the award process. If you do not understand your financial aid award, or feel your application has not been evaluated fairly, please contact the Financial Aid Office.
- You have the right to be notified of cancellation or withdrawal of aid and to be informed of why this action is being taken.
- You have the right to appeal. You may request a review of any decision concerning your financial aid eligibility. Please contact the Financial Aid Office and make an appointment. If necessary you may be directed to submit a written appeal and supporting documentation.
- You have the responsibility to report funds or benefits from any source (such as outside scholarships) that you receive or are promised (before and after you are awarded financial aid).
- The Financial Aid Office is required BY LAW to make adjustments to prevent or correct over awards. We take this responsibility seriously. You will save yourself frustration, inconvenience, and possible financial penalty by reporting any changes in your financial status promptly.
- You have the responsibility to report any change in your student status immediately. If you move, change your name, drop credits, withdraw from school or do anything else that may affect your financial situation, please report that information to the Financial Aid Office and your student loan lender/servicer.
- You have the responsibility to keep copies of all correspondence regarding your financial aid, whether it is from the Financial Aid Office, governmental agencies, Department of Education or outside lenders.
- You have the responsibility to use financial aid funds for educational related expenses **only** such as tuition and fees, books, supplies and reasonable living costs.
- You have the responsibility to repay loans on time. Acceptance of any loan carries the serious obligation to repay. Failure to meet this obligation affects the availability of loans to future students. Before you accept any loans for financing your education, you should carefully consider the total amount and repayment requirements for which you will be responsible when you terminate your educational objectives.
- You have the responsibility to understand how the Financial Aid Office determines if you are making satisfactory academic progress and what happens if you do not maintain satisfactory progress.

### How to Avoid Problems

1. Come to the institution with some money of your own. Even if your aid is prepared on time, funds may not be available until classes begin and processing is complete. You will need money for housing, books and other immediate expenses. If you are able to save money during the summer before school starts, these savings

will be useful in meeting your beginning-of-the semester expenses and protecting you from hardships if your aid is delayed.

2. Be sure to complete a loan entrance counseling exam if you are a student loan borrower. This may be completed online at [www.studentloans.gov](http://www.studentloans.gov). Your loan funds will be delayed until you complete this requirement.
3. Pay your own fees and other charges by the due date if your FAFSA and/or financial aid paperwork is submitted after the financial aid file deadline. Fees are due one week prior to the start of each semester. If they are not paid when due, you are subject to a late fee and/or cancellation of registration. The Financial Aid Office cannot prevent cancellation for non-payment of fees. If you anticipate problems, see either the Financial Aid Office or the Business Office for assistance.
4. If you are not sure how dropping or adding classes will affect your aid status, do not drop any of your classes or withdraw from NSCC without checking with the Financial Aid Office first.
5. If you drop below the required minimum credit load or fail to complete the appropriate number of credits, your aid may be canceled and repayment of the aid may be required.
6. Please notify the Financial Aid Office of any changes in your permanent address.

### Using Financial Aid Funds in the Bookstore

No student on academic or financial aid probation or suspension can make purchases in the bookstore with financial aid funds until after the current semester grades have been posted. Students will remain eligible for federal financial aid while on financial aid probation, but will not be allowed to purchase books in the bookstore with future financial aid until a week prior to the start of classes. As of the week prior to the semester, all financial aid funds available to the student will be totally accessible for all bookstore purchases.

### Additional Information

Our goal is to provide information for you, the student, to enable you to meet your educational objectives and long term goals.

We have a qualified staff of professionals to assist you. If you have questions, please call us at (419) 267-1333. You may also come in to the office located in C110. Office hours are Monday through Thursday 8:00 a.m. to 6:00 p.m. and Friday 8:00 a.m. to 4:00 p.m.

Policies and procedures governing financial aid programs are subject to change at any time without prior notice or publication due to changes of policy by federal and state governments. NSCC Financial Aid Office is an equal opportunity/affirmative action office that does not discriminate on the basis of race, color, national origin, sex, sexual orientation or preference, marital status, age, physical or mental disability, creed or political belief, religion, or veteran status.

### The Tuition and Fee Installment Plan (TIP)

## Fees and Refund Policy

TIP is an alternative to the single payment of fees due at the beginning of each semester. A nonrefundable service fee will be charged to students for the Tuition and Fee Installment Plan.

Participants pay their fees in three installments for 16-week terms and in two installments for 8-week terms. The first installment is due according to the published fee payment schedule, with the second and third payments due in approximately 30-day increments. The second and third installments are due on the same dates for all students regardless of when the first payment was made. It is the students' responsibility to know the payment due dates and to make payments on time, even if they have not received a reminder notice.

A late fee will be added to an installment payment when payment is not received by the due date stated on the contract.

Tuition, out-of-state, lab, student and late fees are covered by this program. Courses added after the first payment is made are not covered. Courses (including flexibly scheduled courses) paid for after late registration dates are not covered. Books, supplies and noncredit tuition are not covered. Financial aid is deducted from total fees due before calculation of the payments. Financial aid finalized after the first payment is applied to the TIP balance due. The refund amount of a withdrawal from class is applied to the TIP balance due. Financial aid or a withdrawal which results in an overpayment (after the TIP balance is covered in full) will be refunded to the student.

### Senior Citizen Discount

Any person who is 60 years of age or older, and who has resided in the state for at least one year, shall be permitted to enroll in classes without instructional charge, provided such attendance is on a credit basis and classroom space is available. Your instructional and general fees will be waived, but you are still responsible for any lab fees, student fees, books and any required materials. The fee waiver will be applied to tuition only after all other grants and scholarships are used. Students need to pay for all other fees by the scheduled due date to avoid a late fee charge.

Complete the "Senior Citizen Fee Waiver" form in the Business Office and bring your driver's license or Golden Buckeye Card. (You will need to do this each semester you register for a class.)

### Payment of Fees

The amount of fees students pay each semester will depend upon the number of credit hours for which they are enrolled. Students choosing to audit courses will pay the same fees as if the courses were being taken for credit.

Students who have outstanding financial obligations to the College will not be permitted to register for any subsequent term, obtain grade transcripts or receive grades for the current term until those obligations are met.

Any student who does not pay their fees by the published due date for the semester may be removed from their classes without notice on that day. If you are registering for multiple sessions, the earliest due date applies.

Payment of fees is required prior to the first day of the semester. Failure to pay on time will result in a late fee being added.

**All fees are subject to change at the beginning of any semester.** If paying in person by credit card with a credit card not in your name, NSCC must have both a written authorization and the credit card signed by the card holder specifying if the card may be used for fees and/or books. This must be done each time the card is used.

### Student Fee

A student fee will be assessed to students each semester. Upon total withdrawal from all classes during the 100 percent refund period, the student fee will be fully refunded.

### Late Registration

Late registration will be permitted after the term has begun with the signature of the instructor and division dean on an Add/Drop/Withdrawal form. A late registration fee may apply.

### Course/Lab Fees

Course/Laboratory fees are assessed in certain courses to cover the cost of expendable materials used by the student, technology costs, and/or distance learning costs.

### Proficiency Examination and Credit by Documentation Fees

A non-refundable fee must accompany any application for a proficiency examination or credit by documentation. Contact your Division Dean to secure the proper proficiency application form.

### Refund of Student Fees

All withdrawals from class(es) may be done through a student's myNSCC account or in writing and are effective on the date received by the Registrar. The tuition and lab/material fee refund policy is shown below. The student fee is refunded if a complete drop is done during the 100 percent refund period.

In extreme circumstances, tuition and lab/material fees may be refunded after the refund period. Documentation proving extreme circumstances must be submitted to the Registrar for consideration and final approval from the Chief Fiscal Officer.

### Refund policy for courses that are 16 weeks or more:

Week 1	100% Refund
Week 2	75% Refund
Week 3	50% Refund
After Week 3	No Refund

### Refund policy for courses that are 8-15 weeks:

Week 1	100% Refund
Week 2	50% Refund
After Week 2	No Refund

### Refund policy for courses that are 2-7 weeks

Week 1	100% Refund
Week 2	No Refund

### Refund policy for courses that are 1 week or less:

Must be dropped the day before the course begins for a 100% refund.



## Fees and Refund Policy

Financial aid recipients should contact the Financial Aid Office if they plan to withdraw from (or stop attending) all classes during the semester.

### Ohio Residency

The following persons shall be classified as residents of the state of Ohio for subsidy and tuition surcharge purposes:

1. A dependent student, at least one of whose parents or legal guardian has been a resident of the state of Ohio for all other legal purposes for twelve consecutive months or more immediately preceding the enrollment of such student in an institution of higher education.
2. A person who has been a resident of Ohio for the purpose of this rule for at least twelve consecutive months immediately preceding his or her enrollment in an institution of higher education and who is not receiving, and has not directly or indirectly received in the preceding twelve consecutive months, financial support from persons or entities who are not residents of Ohio for all other legal purposes.
3. A dependent child of a parent or legal guardian, or the spouse of a person who, as of the first day of a term of enrollment, has accepted full-time, self-sustaining employment and established domicile in the state of Ohio for reasons other than gaining the benefit of favorable tuition rates.
4. A veteran, the veteran's spouse and any dependent of the veteran, who meets both of the following conditions:
  - a. A veteran either (i) served one or more years on active military duty and was honorably discharged or received a medical discharge that was related to the military service or (ii) was killed while serving on active military duty or has been declared to be missing in action or a prisoner of war.
  - b. If the veteran seeks residency status for tuition surcharge purposes, the veteran has established domicile in this state as of the first day of term of enrollment in an institution of higher education. If the spouse or a dependent of the veteran seeks residency status for tuition surcharge purposes, the veteran and spouse or dependent seeking residency status have established domicile in this state as of the first day of a term of enrollment in an institution of higher education, except that if the veteran was killed while serving on active military duty or has been declared to be missing in action or a prisoner of war, only the spouse or dependent seeking residency status shall be required to have established domicile in accordance with this division.
5. A student who, while a resident of this state for state subsidy and tuition surcharge purposes, graduated from high school in this state or completed the final year of instruction at home as authorized under section 3321.04 of the Revised Code, if the person enrolls in an institution of higher education and establishes domicile in this

state, regardless of the student's residence prior to that enrollment.

6. Deferred Action for Childhood Arrivals (DACA): On June 15, 2012 the Secretary of Homeland Security announced that certain students who came to the United States as children and meet several guidelines may request, through a formal process, consideration of deferred action for a period of two years, subject to renewal. Only individuals who can prove through verifiable documentation that they meet these guidelines are eligible to be considered for deferred action. Determinations will be made on a case-by-case basis under the guidelines. U.S. Citizenship and Immigration Services has a variety of useful resources about DACA on their website <https://www.uscis.gov/humanitarian/consideration-deferred-action-childhood-arrivals-daca>.

### Specific Exceptions and Circumstances

1. A person who is living and is gainfully employed on a full-time or part-time and self-sustaining basis in Ohio and who is pursuing a part-time program of instruction at an institution of higher education shall be considered a resident of Ohio for these purposes.
2. A person who enters and currently remains upon active duty status in the United States military service while a resident of Ohio for all other legal purposes and his or her dependents shall be considered residents of Ohio for these purposes as long as Ohio remains the state of such person's domicile.
3. A person on active duty status in the United States military service who is stationed and resides in Ohio and his or her dependents shall be considered residents of Ohio for these purposes.
4. A person who is transferred by his employer beyond the territorial limits of the fifty states of the United States and the District of Columbia while a resident of Ohio for all other legal purposes and his or her dependents shall be considered a resident of Ohio for these purposes as long as Ohio remains the state of such person's domicile and as long as such person has fulfilled his or her tax liability to the state of Ohio for at least the tax year preceding enrollment.
5. A person who has been employed as a migrant worker in the state of Ohio and his or her dependents shall be considered a resident for these purposes provided such person has worked in Ohio at least four months during each of the three years preceding the proposed enrollment.
6. A person who was considered a resident under this rule at the time the person started a community service position as defined under this rule, and his or her spouse and dependents, shall be considered as residents of Ohio while in service and upon completion of service in the community service position.
7. A person who returns to the state of Ohio due to marital hardship, takes or has taken legal steps to end a marriage, and reestablishes financial dependence upon a parent or

## Fees and Refund Policy

legal guardian (receives greater than 50 percent of his or her support from the parent or legal guardian), and his or her dependents shall be considered residents of Ohio.

8. A person who is a member of the Ohio National Guard and who is domiciled in Ohio, and his or her spouse and dependents, shall be considered residents of Ohio while the person is in Ohio National Guard service.

### Procedures

A dependent person classified as a resident of Ohio for these purposes and who is enrolled in an institution of higher education when his or her parents or legal guardian removes their residency from the state of Ohio shall continue to be considered a resident during continuous full-time enrollment and until his or her completion of any one academic degree program.

1. In considering residency, removal of the student or the student's parents or legal guardian from Ohio shall not, during a period of twelve months following such removal, constitute relinquishment of Ohio residency status otherwise established under paragraph 1 or 2 of this rule.
2. For students who qualify for residency status under paragraph 3 (of Ohio Residency), residency status is lost immediately if the employed person upon whom resident student status was based accepts employment and establishes domicile outside Ohio less than twelve months after accepting employment and establishing domicile in Ohio.
3. Any person once classified as a nonresident, upon the completion of twelve consecutive months of residency, must apply to NSCC for reclassification as a resident of Ohio for these purposes if such person in fact wants to be reclassified as a resident. Should such person present clear and convincing proof that no part of his or her financial support is or in the preceding twelve consecutive months has been provided directly or indirectly by persons or entities who are not residents of Ohio for all other legal purposes, such person shall be reclassified as a resident.
4. Any reclassification of a person who was once classified as a nonresident for these purposes shall have prospective application only from the date of such reclassification.
5. Any institution of higher education charged with reporting student enrollment to the Ohio Board of Regents for state subsidy purposes and assessing the tuition surcharge shall provide individual students with a fair and adequate opportunity to present proof of his or her Ohio residency for the purposes of this rule. Such an institution may require the submission of affidavits and other documentary evidence which it may deem necessary to a full and complete determination under this rule.

Documentation of full-time employment and domicile shall include the following documents:

1. A sworn statement from the employer or the employer's

representative on the letterhead of the employer or the employer's representative certifying that the parent or spouse of the student is employed full-time in Ohio.

2. A copy of the lease which the parent or spouse is the lessee and occupant of rented residential property in the state; a copy of the closing statement on residential and real property located in Ohio of which the parent or spouse is the owner and occupant; or if the parent or spouse is not the lessee or owner of the residence in which he or she has established domicile, a letter from the owner of the residence certifying that the parent or spouse resides at that residence.

Additional criteria which may be considered in determining residency for these purposes may include, but are not limited to the following:

1. If a person is subject to tax liability under section 5747.02 of the Ohio Revised Code;
2. If a person qualifies to vote in Ohio;
3. If a person is eligible to receive state welfare benefits;
4. If a person has an Ohio driver's license and/or motor vehicle registration.

Criteria evidencing lack of residency:

1. If a person is a resident of or intends to be a resident of another state or nation for the purpose of tax liability, voting, receipt of welfare benefits, or student loan benefits (if the student qualified for that loan program by being a resident of that state or nation);
2. If a person is a resident or intends to be a resident of another state or nation for any purpose other than tax liability, voting, or receipt of public assistance.

Residency application forms for in-state tuition are available online or in the Registrar's Office. The completed application requesting a change of out-of-state status, including all required documentation, must be received by the Registrar by the end of the third week of classes for the semester in question. The Registrar will review the application within five working days from the date of receipt to determine the candidate's residency status. The Registrar will notify, in writing, the student applicant within ten working days of the final determination of the request.

The applicant should plan to pay all fees, even if they believe their application will be approved. Provided that residency requirements were met prior to the first day of the semester, fees will be refunded back to the beginning of the semester in question once a final determination has been made.

### Indiana Reciprocity Agreement

Under the tuition reciprocity agreement with the Ohio Department of Higher Education and Indiana Commission for Higher Education, Northwest State Community College accepts at Ohio resident tuition rates for any Indiana resident of Adams, Allen, Blackford, Clark, DeKalb, Dearborn, Decatur, Delaware, Fayette, Flood, Franklin, Harrison, Henry, Jay, Jefferson, Jennings, Noble, Ohio, Randolph, Ripley, Rush, Scott, Steuben, Switzerland, Union, Wayne, Washington and Wells counties. Applicants must submit an application to receive resident tuition rates, enroll at NSCC and meet requirements for admissions. They must submit documentation to the Registrar's Office. Forms submitted after the first date of the

## Academic Policies and Procedures

term will not be considered for that semester. Once enrolled, the student must maintain satisfactory academic performance. This agreement is in effect July 1, 2015 - June 30, 2017.

### Selective Service Registration

Federal law requires that males having reached the eligible age of eighteen must register with the Selective Service System. Failure to provide proof of Selective Service registration will result in an additional out-of-state surcharge for all future terms. This surcharge will be waived only if proof of a Selective Service registration is received prior to the beginning of the semester. In addition, grades and transcripts will not be released without proof of registration, and financial aid eligibility may also be affected. Registration for a Selective Service number can be completed in one of two ways:

1. Applications are available at any post office. Complete the necessary forms and follow the procedures as outlined on the application.
2. Register online at [www.sss.gov](http://www.sss.gov). In many cases, the selective service number will be received instantly, instead of the 90 days it takes to complete the mail-in application procedure.

After applying for a number, eligible students should fill out a verification form in the Registrar's Office, and as soon as they receive their selective service number, submit it to the Registrar's Office for final documentation.

### Grading System

The quality of coursework at Northwest State Community College is indicated by means of letter grades. Each grade, in turn, carries credit points which are used in computing the student's cumulative point average.

<b>A</b>	<b>Superior Quality</b> (4.0 Credit Points)
<b>B</b>	<b>High Quality</b> (3.0 Credit Points)
<b>C</b>	<b>Average</b> (2.0 Credit Points)
<b>D</b>	<b>Below Average</b> (1.0 Credit Points)
<b>F</b>	<b>Failing</b> (0.0 Credit Points)
<b>I</b>	<b>Incomplete</b> (Must be completed by the end of the next semester for fall and spring, and September 15 for summer.)
<b>P</b>	<b>Progress</b> (0.0 Credit Points)
<b>W</b>	<b>Withdrawal</b>
<b>WM</b>	<b>Military Withdrawal</b>
<b>S</b>	<b>Satisfactory</b> (Satisfactory work for a developmental course).
<b>U</b>	<b>Unsatisfactory</b> (Unsatisfactory work for a developmental course.)
<b>AU</b>	<b>Audit</b> (no credit)
<b>CR</b>	<b>Credit Given</b> (Credit granted through proficiency testing or prior learning.)
<b>SC</b>	<b>Satisfactory Credit</b> (Satisfactory work for an elective course taken on a pass/fail basis.)
<b>UC</b>	<b>Unsatisfactory Credit</b> (Unsatisfactory work for an elective course taken on a pass/fail basis.)

*\*\*Grades of W, S, U, AU, P, CR, SC, UC and I, are not computed in the cumulative point average.*

### Midterm Grades

The purpose of a midterm grade is to identify how students are doing in their course(s) and make changes, if needed. Faculty are not required to submit midterm grades, and only 16 week courses are submitting midterm grades. Midterm grades are not recorded on your permanent record or transcript. They are designed to help students assess their mid-semester standing and make changes, if needed.

### Adding or Dropping Classes

Students add or drop classes through myNSCC at [NorthwestState.edu](http://NorthwestState.edu).

A student takes full responsibility for adding or dropping courses. Failure to attend classes or give proper written intention to withdraw will result in failure of a course. Students will be academically and/or financially responsible for any "W" or "F" grades received. The adding or dropping of courses requires the student to contact the Financial Aid Office and/or the Business Office to adjust the aid or make payment.

Students who are reported as non-attending for all courses during the first 14-days of the term are administratively dropped from the course(s). Online courses require an assignment submission to verify attendance.

### Adding Classes

All courses must be added prior to the first day of class for the specific term. All course additions must have written approval of the instructor and the Dean once classes have started. All added courses will be charged the full tuition rate.

Registering for more than 20 credit hours in the fall/spring terms or more than 10 hours in the summer term require a student to obtain permission from the Dean or Vice President for Academics.

### Auditing Courses

The term "audit" refers to a course which is taken without credit. Courses taken on this basis are not included in the computation of the cumulative grade point average and are not applicable to graduation requirements. A student must elect audit status at the time of registration or take action to change to audit during the refund period for that class length. (Class length: 1 week or less = enroll as audit; 2 weeks to 7 weeks = 1 week to change to audit; 8 weeks to 15 weeks = 2 weeks to change to audit; 16 wks = 3 weeks to change to audit.) The student initiates such action through the Registrar's Office. Students auditing a course will pay the same fees as if the course was being taken for credit.

### Dropping Classes

Student's drop courses using myNSCC through the 100 percent tuition refund period for a specific course.

### Withdrawing from class(es)

Dropping a course after the 100 percent tuition refund period is a "withdrawal," which may be completed by using myNSCC, in person at the Registrar's Office room C120, by faxing the request



## Academic Policies and Procedures

to the Registrar’s Office at (419) 267-5604, or by mailing the request which must be post marked on or before the last date for a “W” deadline.

Failure to attend classes or give proper written intention to withdraw will result in failure of a course. Students will be academically and financially responsible for any “W” or “F” grade received.

### Withdraw policy for courses that are 3 weeks or less:

No withdrawal option.

### Withdraw policy for courses that are 4-7 weeks:

End of second week to withdraw.

### Withdraw policy for courses that are 8-15 weeks:

End of the fourth week to withdraw.

### Withdraw policy for courses that are 16 weeks or longer:

End of the eighth week to withdraw.

**Students may withdraw from any or all courses on or before the posted withdrawal deadline.** Deadlines are posted on the College website. Withdrawals after the withdrawal deadline are on an exception basis only and may be approved by a Division Dean or the Vice President for Academics.

### Military Withdrawal

Withdrawals due to military activation during a semester will require the student to withdraw from classes at the time of activation, at which time a “W” will be assigned. Upon receipt of a copy of the student’s actual military activation orders, the College will refund 100 percent of the student’s tuition and fee for the semester, and any “W” grade will be changed to a “WM” to signify a military withdrawal on the transcript. Upon returning to college the student is required to submit a copy of Member page 4 of the DD214.

### Satisfactory Credit / Unsatisfactory Credit Option

Students are permitted to select Satisfactory Credit or Unsatisfactory Credit grade (SC/UC) status for a limit of two elective courses per associate degree, and one per certificate program. Courses must be designated as such no later than the end of the first week of classes. SC/UC status for flexibly scheduled courses must be designated as such no later than the end of the first week of the original registration. The Request for SC/UC Status Form must be completed in the Registrar’s Office, and students will not be allowed to change this status after formally selecting such. NOTE: SC/UC courses may not transfer to other institutions.

### Cumulative Point Average

The cumulative point average is obtained at the conclusion of each semester by dividing the total number of credit points earned by the number of semester credit hours the student has attempted. Please refer to the Grading System for point system.

Example:

Course	Credits	Grade	Points
ENG111	3	B	9
CIS119	1	A	4
CHM101	4	B	12
MTH109	<u>4</u>	<u>C</u>	<u>8</u>
	12 credits		33 points
			$33 \div 12 = 2.75$ cumulative GPA

### Grade Reports

Grades are accessed electronically through myNSCC.

### Dean’s List

For the purposes of the Dean’s List calculations, a full-time student is defined as a student carrying at least 12 graded credit hours for the semester. A part-time student is defined as a student carrying between 6 -11.99 graded credit hours for the semester. Each full-time student earning a grade point average of 3.50 or above on a 4.00 scale will be named to the full-time Dean’s List for that semester. Each half-time student earning a grade point average of 3.50 or above on a 4.00 scale will be named to the half-time Dean’s List for that semester.

### Repeated Courses

A student may repeat coursework for which he or she earned a “D”, “U”, “F” or “W” grade. When a course, or its current equivalent, is repeated, the most recent grade will be included in the calculation of the grade point average. The student must secure permission from the Division Dean to repeat a course more than once. Permission to repeat the course would include the development of an educational plan for the student including specific academic support services interventions. The original course grade will remain on the transcript and the course will be marked with an “E” for exclude in the repeat column. The most recent course grade will be marked as “I” for Include. A grade received for the repeated course will thereafter be substituted for the former grade in calculating the student’s cumulative point average.

For transfer courses, if the transfer course is taken after the NSCC course, the NSCC course will be marked as “E” in the repeat column and will not be used in calculating the student’s cumulative grade point average.

A course repeated will be considered as any other course in determining the credit hour load to be earned by the student in a semester.

To qualify for graduation, each required course in which an “F” grade is received must be repeated. The Vice President for Academics may waive the repeating of an “F” grade in special circumstances where a course is no longer available for the student to repeat and/or a reasonable substitution can be made.

Repeating a course may affect financial aid. Students receiving veteran educational benefits or other students who receive financial assistance from an outside agency should check for any agency rules that do not permit payment for courses that are taken more than once. Veteran educational benefits, for example, will not cover a third attempt for a failed course.

### Developmental Courses

Refresher courses are offered in reading, writing and mathematics for students who need or desire preparation for college-level studies. These courses may be required on the basis of ACCUPLACER Assessment scores, ACT scores, or elected by students. Students with questions regarding their need for these courses should consult with the Admissions Office or their advisor for clarification. Please see the Course Description section of this catalog for more details. Students whose placement scores indicate a need for developmental courses may be limited to twelve credit hours until

## Academic Policies and Procedures

satisfactory (“S”) academic status is achieved. Developmental courses do not count towards graduation requirements and are graded as Satisfactory or Unsatisfactory (S/U).

### Incomplete Grade

Students may request an incomplete grade through discussion with the instructor and by negotiating and completing an “Incomplete Grade Contract” with that instructor and the academic dean, provided that each of the following criteria is met:

1. The student is unable to complete the work due to reasons beyond their control.
2. The student is passing the course.
3. At least seventy-five percent of the coursework is completed.
4. The course must be completed without the aid of classroom instruction.

The contract must indicate the specific procedures and deadlines for fulfilling course requirements. A grade of an “I” will be assigned until a final grade can be established. Work must be completed by the deadline established by the instructor or by the end of the next semester for fall and spring and September 15 for summer, whichever is earlier. All incomplete grade contracts must be approved and signed by the Division Dean.

Failure to complete the requirements of the contract will result in failure of the course, and the “I” will be converted to a grade of “F” on the student’s permanent record by the Registrar’s Office. Extensions to the time limit may be made only upon recommendation of the instructor involved and approval of the Division Dean. Students are academically and financially responsible for an “I” grade received.

### Independent Study

Independent study courses are initiated by the dean of the division in which the independent study course is to be offered. The independent study of a course must be the last resort method of instruction considered only when program requirements, electives and appropriate substitutes are not available.

The independent study must satisfy the following three criteria:

1. The student is capable of successfully completing the course independently.
2. The course is appropriate for the independent study methodology.
3. The College is willing to offer the course independently.

### Academic Standing

Academic Standing is verified at the end of each semester. Students remain in good academic standing with a grade point average of 2.0 or higher. Students are placed on academic probation or suspension when the cumulative grade point average falls below minimum levels. Students on probation or suspension will work with the success center to develop academic success plans. In addition, students on probation or suspension will be required to take GSD100 Success Seminar.

### Academic Probation or Suspension

#### Academic Probation

Students will be placed on academic probation at the end of any semester, including summer session, in which their cumulative grade point average falls below the following minimum levels:

Credit hours attempted	Cumulative GPA below
1 - 15	1.40
16 - 30	1.60

31 - 45	1.80
46 +	2.00

Students will remain on academic probation until such time as their cumulative GPA meets or exceeds the minimum levels referenced above. While on probation, students may register for a maximum of 12 credit hours. NOTE: Veterans receiving VA educational assistance may have benefits terminated following their second semester of academic probation if progress is not being made toward the required GPA.

#### Academic Suspension

A student on probation will be suspended at the end of any semester, including summer, if the minimum cumulative grade point average is not reached while on probation. There will be no suspension if the semester grade point average is 2.00 or the student shows significant progress, as determined by the Vice President for Academics.

The period of suspension will be for one academic semester, excluding summer session. Students will be required to develop a success plan that is approved by the Division Dean prior to being released from academic suspension by the Vice President for Academics. A student may register for 6 credit hours the first semester returning from suspension.

### Credit by Transfer, Examination or Documentation

A student must have submitted an application for admission to the College.

#### Transfer Credit

Transfer credit will be allowed for any previous courses in which a “D” or better grade was earned from a U.S. regionally accredited institution of higher learning. Some course prerequisites and program requirements may only be fulfilled with a “C” grade or better.

International students may receive credit for coursework taken at foreign institutions of higher learning by:

1. Providing a Credential Evaluation Report from a credential evaluation service of the student’s choice (i.e. Educational Credential Evaluation, Inc. – (414) 289-3400; World Education Services - www.wes.org; Josef Sliney & Associates – (305) 273-1616; or,
2. A student may choose, in lieu of providing a Credential Evaluation Report (officially translated transcript), to take proficiency examinations for any applicable coursework according to the College’s Proficiency Examinations policy.

Credits transferred to NSCC will apply toward graduation only if they satisfy requirements for a particular major. Transfer credit not required by a particular major may be counted as additional hours completed.

Transfer credit may be awarded for courses in which a student received credit through a proficiency exam taken at another regionally accredited institution. Such credit will be given only if the transcript clearly indicates that credit was granted for the

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course at another institution. If the transcript simply indicates that a proficiency exam was taken but credit was not given for the course, NSCC will not accept the proficiency as transfer credit. Students may receive credit for courses taken at non-accredited institutions by successfully passing a proficiency examination, if one is available.

In order to be eligible for an associate degree awarded from NSCC at least thirty percent of the credits must have been earned at NSCC.

### Military Transfer Assurance Guide (MTAG)

The University System of Ohio is committed to the acceptance and awarding of college credit for training and experience in the United States Armed Forces or National Guard, as long as it has been approved by the American Council on Education or a regional accrediting body, such as the Higher Learning Commission. More information can be found on the University System of Ohio website.

Total military credit transferred may not exceed seventy (70) percent of any degree requirement.

### College Level Examination Program (CLEP), Advanced Placement (AP), and DANTES (DSST) Credit

1. Full college credit may be granted or prerequisite courses waived based upon College Level Examination Program (CLEP), Advanced Placement (AP), or DANTES (DSST) test results. A list of courses will be maintained by the Vice President for Academics.
  - a. Credit will be granted for equivalent courses for a score of 3 or higher on the AP test.
  - b. An AP score of at least 4 may be required for highly dependent sequence of courses in a STEM area.
  - c. A score of 3 or higher on an AP foreign language area will provide credit for at least the first year of a foreign language.
  - d. Credits earned via AP exams are transferable in Ohio according to the state's transfer module. (The NSCC AP code is 1235).
  - e. CLEP and DANTES credit will be granted for equivalent courses based on the American Council on Education minimum score.
2. Credit awarded through CLEP, AP, or DSST scores may not exceed 70 percent of any degree or certificate requirement.
3. Upon presentation of CLEP, AP, or DSST scores in the same area, credit will be awarded for either CLEP, AP, or DSST based upon the higher number of credit hours. In no case will CLEP, AP, and DSST credits be combined. In the event that the credit hours to be awarded through CLEP, AP, or DSST are equal, the individual department will award the appropriate credit at their discretion.

### Proficiency Examination

- Students may complete an application for a proficiency examination in an available subject area. Applications are available in each academic division's main office. The exam fee must be paid prior to the examination.
- If enrolled in the course in which examination is

requested, the exam must be completed before the end of the fourth week of a regular semester and before the end of the second week of a summer session.

- A student cannot proficiency in a course previously taken (successfully or unsuccessfully).
- A student may submit an application for a Proficiency Examination ONE TIME PER COURSE.
- Students certified as proficient, who are enrolled in the proficiency course, will be refunded the appropriate credit hour tuition charge for the course.
- Credit for the course for a satisfactory proficiency examination will become part of the student's permanent record, and a grade of "CR" will be assigned.
- Proficiency credit cannot be posted to the transcript until the end of the semester in which the student has completed at least one course at NSCC.
- A student may submit an application for proficiency examination, if not enrolled in the particular course for which examination is requested, at any time during the regularly scheduled semesters by completing the application process outlined above. All other policies will apply with the exception of refund of instructional charges.

### Credit by Documentation

Northwest State Community College recognizes that students may have knowledge and skills, based on prior learning and experiences, which could be considered for college credit. Prior learning assessment is a means to review prior learning, to identify concepts already acquired, and to appropriately place students into the sequence of courses toward a degree.

Examples of documentation that may identify successful accomplishment of course learning outcomes include but are not limited to: a portfolio of work samples, reference letters, employment verification, licensure, and certifications. Documentation requirements are determined by the Division Dean and faculty teaching the course.

A student may not receive credit by documentation for a course previously completed (successfully or unsuccessfully). A non-refundable documentation fee must be paid to have the course reviewed and entered on the transcript. Credit by Documentation will not be posted to the transcript until the end of the semester in which the student has completed at least one course at NSCC.

### Academic Honesty

Students and faculty are expected to engage in their academic work with integrity and respect for others. Students are expected to submit academic work that reflects their own original thought and is their own. Any misrepresentation in academic work, including plagiarism, is a form of academic dishonesty.

#### Examples of academic dishonesty include but are not limited to:

- Plagiarism – representing the words or ideas of another person as your own without identifying the source.
- Using the exact words from a source, including cutting and pasting from a Web site, without both quotation marks to indicate the extent of the material borrowed and a citation of the original source.
- Paraphrasing or summarizing ideas from a source without proper citation. Submitting work written or created by another, whether such work is written by a friend, an author or is downloaded from the internet.
- Quoting from an unacknowledged source during an oral



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- presentation.
- Patching together a work using phrases and ideas borrowed from a number of different sources.
- Accepting assistance or collaborating with other students beyond what is explicitly permitted by the faculty.
- Cheating - The use of unauthorized or prohibited materials. Students, who intentionally use or attempt to use unauthorized information in any academic exercise, including computers or exams, are cheating.
- Cooperating with another person in academic dishonesty, such as, taking an exam for another student, having another student take an exam for you, or exchanging information with another student during or after an exam.
- Copying from or looking at another person's exam or allowing another student to copy your exam.
- Obtaining unauthorized copies of an exam prior to exam time.
- Intentionally falsifying information in an academic exercise or clinical/laboratory record.
- Unauthorized resubmission of coursework for more than one course.

### Disciplinary Penalties for Academic Dishonesty

- A. The faculty member who detects academic dishonesty and the Division Dean will handle the discipline. In the event the faculty member is the dean, the Vice President for Academics handles the discipline. Each action will be documented in writing and the faculty member will be notified.
- B. For a first time offense, a grade of "F" will be issued for the project, paper, test or whatever assignment in which academic dishonesty has occurred. A faculty member may have other penalties specified in the course syllabus. The faculty member will impose the grade.
- C. For a second offense, not necessarily in the same course, a grade of "F" will be issued for the course in which academic dishonesty has occurred. The Vice President for Academics will inform the faculty member of the second offense, and the faculty member will impose the grade. The Vice President for Academics will inform the student.
- D. For a third offense, not necessarily in the same course, a grade of "F" will be issued for the course in which academic dishonesty has occurred. Additionally, any student who has been involved in three (3) offenses, not necessarily in the same course or semester, will be dismissed from the College immediately for one (1) semester (excluding summer). Upon readmission to the College, any future offense will cause the student to be dismissed immediately with no right to readmission. The Vice President for Academics will be responsible for imposing dismissal.
- E. The student may appeal any disciplinary action by following the steps of the grievance procedure.

### Catalog Requirements

Students will follow the curriculum requirements for their major as listed in the catalog in effect at the time of their admission to the College. Following a break of enrollment at NSCC of two years or

more, students will be updated to the catalog requirements in effect at the time of their re-enrollment.

### Change of Student Information

A change of major, address or name are processed by the Registrar's Office. A change of major can be submitted by emailing from a student's NSCC email account to registrar@NorthwestState.edu or by completing the Change of Student Information form in the Registrar's Office. An address change can be completed through the Change of Student Information form. A name change is completed by submitting the legal or court issued documents such as a marriage certificate, divorce decree or other documentation of legal action to the Registrar's Office.

### Attendance Policy

Student attendance is essential to success in the course. Faculty may issue a failing grade to students who incur excessive absences and who have not filed an official withdrawal from a course.

Excessive absences are defined as three consecutive absences or sporadic absences that impair satisfactory student progress in a course. For those students, instructors should report excessive absences and last date of attendance to Student Resources.

The College is obligated to report lack of attendance or last date of attendance to federal and state agencies that provide financial assistance to students. Failure to attend classes will result in loss of financial aid (grants and/or loans). Students considering withdrawing from all classes should contact the Financial Aid Office to discuss the financial implications of withdrawing from all classes.

The last date of attendance may be determined from attendance records, tests taken, or homework assignments submitted. Faculty will be required to report the student's last date of attendance when a final grade of "F" or "U" is assigned. All Title IV refunds will be calculated using the student's last date of attendance.

### Course Cancellation for Cause

The College reserves the right to cancel courses for cause, such as insufficient enrollment or unavailability of faculty.

### Course and Credit Hour Load Limitations

The maximum credit load for a student enrolled in a fall or spring term is 20 credit hours and 10 credit hours during a summer term, except upon recommendation of his/her advisor and approval of the Division Dean and/or Vice President for Academics. A student is considered to be enrolled full-time for a fall or spring term when enrolled in at least 12 credit hours and at least 6 credit hours for a summer term.

### Academic Fresh Start Policy

Once in a lifetime, a student may apply for a change of grade from "D", "F", "U", or "WF" to a W. The fresh start requirements for application are:

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1. A student must be currently enrolled in credit courses and have a declared major at NSCC.
2. The student must have demonstrated satisfactory academic progress for at least one academic term (12 cumulative credit hours beyond fresh start course(s) request) with a GPA of 2.0 for these courses at NSCC including developmental courses.
3. Courses requested for fresh start must have been taken during the first 30 credit hours attempted.
4. The application for Academic Fresh Start must be in writing and is subject to review and approval by the Division Dean and Vice President for Academics.
5. An application fee of \$10.00 per requested course change must be paid at the time of the application.
6. A transcript placement fee of \$20.00 per approved course must be paid within ten (10) days of notice of final approval.
7. Academic Fresh Start application forms are available in the Registrar's Office.

### Medical Fresh Start Policy

Once in a lifetime, due to catastrophic personal health/medical circumstances, students may be eligible to retake at no additional cost, classes that they failed (earned and "F" or "U" grade) as a result of their medical condition. The requirements are as follows:

1. The student's incapacitation must have exceeded two weeks in duration.
2. A medical fresh start only applies to illness/injury experienced by the student.
3. Petition for medical fresh start within two weeks of the end of the semester in which the event occurred. The petition must be in writing and is subject to review and approval by committee(s). The Medical Fresh Start form and instructions are available in the Registrar's Office.
4. The student had to be passing course(s) prior to the event.
5. The student must register to re-take the affected courses or equivalent credit hours within one year of filing the petition for Medical Fresh Start.
6. The student and his/her attending physician must complete and sign the Petition for Medical Fresh Start. The Petition for Medical Fresh Start must be mailed to the Registrar's Office directly from the physician.
7. A non-refundable petition fee of \$20.00 must be paid at the time of the application.
8. Upon registration for the affected courses, the student must submit their course schedule to the Registrar so that a fee waiver can be completed for those courses.

### Graduation Requirements

The associate degree is awarded upon the successful completion of any one of the two-year programs. A certificate is awarded upon the successful completion of any of the one-year certificate programs.

Students must:

- Successfully complete all required courses in their program. Certain majors require a "C" grade or better in certain courses to meet graduation requirements. Each

required course in which an "F" grade is received must be repeated.

- Attain a 2.0 grade point average in their technical courses. The cumulative technical point average (cumulative technical GPA) is obtained at the conclusion of each semester by dividing the number of credit points earned by the number of credit hours the student has attempted in technical courses only. Technical courses are designated by a "+" in front of the course number under each technology in this catalog.
- Maintain an accumulative grade point average of 2.0 in all courses.
- Complete 30 percent of the credits from Northwest State Community College.
- In addition, all associate degree graduates may be required to :
  - Complete a national normed test
  - Submit the required elements of a portfolio

Students are eligible to receive only one degree within a technology but may have more than one major. All majors are listed on the student's transcript. Diplomas are issued for each degree within a technology. Students applying for a certificate and associate degree within the same technology at the same time will be awarded the higher degree only. Students wishing to receive dual degree/dual technologies must meet with their academic advisor to fulfill their programs of study.

The graduation application is available in the Registrar's Office and online. The petition is due by June 15 for fall graduates, and October 1 for spring and summer graduates. This ensures evaluation prior to the beginning of the respective term to better assist students in scheduling any remaining courses that are needed. Students who file for graduation are required to complete their academic requirements for graduation within the next subsequent academic year or the graduation process is deemed incomplete. Re-application would then be required once requirements for a certificate or degree are achieved.

Each graduate is expected to attend the graduation ceremony after the application for graduation has been approved. Students who are unable to attend the graduation ceremony should notify the College by contacting the Registrar's Office at least two weeks prior to commencement.

### Graduation with Honors

Any student graduating with a cumulative point average of 3.50 or higher will be graduated with honors as follows:

3.50 - 3.74	Cum Laude
3.75 - 3.89	Magna Cum Laude
3.90 - 4.00	Summa Cum Laude

A notation of this honor will be placed on the student's diploma and transcript. Graduates' honors designations printed in the commencement program are based on fall semester calculations of all grades.

### Completing a Second Major

When a student completes a second major at any time within the same technology area, the second major will be added to the transcript. Students must complete a graduation petition, if the second major is completed after the initial degree was awarded.

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A graduation petition is available on the Registrar's Office link at NorthwestState.edu, or in the office located in C120.

### Commencement

The College has two graduation ceremonies. One is held at the end of the fall term for fall graduates and one is held at the end of the spring term for spring and summer graduates. All students who have petitioned to graduate are expected to attend. Diplomas are not distributed during the ceremony. Diplomas will be issued after the verification of graduation requirements is complete. (Allow 6 weeks from the date of the commencement ceremony for delivery of the diploma via mail.) Caps and gowns are required standard attire for the ceremony. Graduates' honors designations printed in the commencement program are based on the previous semester calculations of all grades.

### Current Electronic Portfolio Requirements Include

Students will have two required submissions to the E-Portfolio:

- The proposal essay from English 111 including Works Cited page.
- A late program essay; from the student's technical program (for an Associate of Arts or Associate of Science student, from the intended area of study upon transfer) that meets both communications and critical thinking requirements.
- Submissions are made through myNSCC.

### Student Directory Information

#### Right to Inspect and Review Records

The Family Education Rights and Privacy Act of 1974 was designated to protect the privacy of education records. It established the right of students to have access to inspect and review their academic records, as well as limits the release of any such information about a student without the student's consent. A request to inspect and review records shall be made in writing to the Registrar.

#### Directory Information

The items listed below are designated as "Directory Information" and may be released by this institution at its discretion:

Name	Major	Full-time or Part-time status
Address*	Birth Date	Dates of Attendance
Email*	Honors	Degree(s) Conferred

*\*For legitimate educational purposes only*

Under the provisions of the Family Educational Rights and Privacy Act of 1974, students have the right to withhold the disclosure of any or all of the above information. Should a student decide to withhold any information, he/she will need to fill out a Request to Prevent Disclosure of Directory Information form and submit it to the Registrar no later than the end of the second week of classes each semester. This form is available in the Registrar's Office. Such requests will be honored for one academic year or a shorter period of time as designated by the student. A complete

set of FERPA guidelines is available for students to review in the Registrar's Office.

**Third parties:** Whenever a student's information is passed on to a third party, the College will inform the third party that such information may not be passed on to a fourth party.

**Records:** The institution will maintain a record of persons who are not institutional employees who request access to a student's file or who obtain access to a student's file. These requests will be directed to the Registrar and/or the Vice President for Academics.

### Access to Student Records

It is College policy for a student to have the right to inspect and review personally identifiable records and the right for a hearing to challenge the content of those records:

#### Inspect and Review Records

1. Individuals who have attended Northwest State Community College have the right to inspect and review official records, files and data directly related to themselves, including material incorporated into each student's cumulative record folder in accordance with the College policy on access to student records.
2. A student may request, in writing, the opportunity to inspect and review his/her records.
  - a. The request should be made to the chief administrator or designee(s) of the department in which the records are on file.
  - b. A request must specify records to be inspected and reviewed.
3. Release of Information for Deceased Students.
  - a. Requests for information on individuals other than the executor during the first 10 years after death will be limited to the release of directory information only. Thereafter, all information becomes available to the public.
4. A request by a student to inspect and review his/her records will be granted within a reasonable period of time, but such time is not to exceed seven days in which classes are held after the request has been made.
5. Records will be inspected and reviewed by the student in the presence of the department head or his/her designee(s).
  - a. Records may not be changed or deleted during the process of inspection and review.
  - b. The student shall be advised of his/her right to challenge and the procedure to challenge any portion(s) of his/her College record.
  - c. Upon written request, the student shall be provided with a copy of requested documents within his/her record.
6. Northwest State Community College will release non-directory information, including grades, to parents of dependent students only with the written consent of the student, regardless of the student's age or dependency status. Written consent for such requests must be



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submitted to the Registrar's Office.

### Hearing to challenge content of records:

1. Students shall have an opportunity for a hearing to challenge the content of their College generated records, to insure that the records are not inaccurate, misleading, or otherwise in violation of the privacy or other rights of students, and to provide an opportunity for the correction or deletion of any such inaccurate, misleading, or otherwise inappropriate data contained therein. Third party records are not open to challenge.
2. A student may request, in writing, an opportunity for a hearing to challenge the content of his/her College record.
  - a. Request should be made to the President or President's designee(s).
  - b. A request must:
    - i. Identify in specific terms the portion(s) of the record to be challenged.
    - ii. State the reason(s) for challenging the portion(s) of the record so identified.
    - iii. State the remedy sought; i.e., the correction or the information under challenge.

### Hearing procedures:

1. The hearing will be conducted by the President or designee(s) who will act as the hearing officer.
2. The hearing will be granted within ten days after the request has been made.
3. The department head or his/her designee(s) responsible for the student record under challenge shall represent that record in the hearing.
4. Prior to the hearing, the hearing officer shall notify the student and the department head of the time, place and date of the hearing and of the specific portion(s) of the student's record to be challenged in the hearing.
5. The hearing shall be limited to consideration of the specific portion(s) of the student's record being challenged.
6. The student will have the right to be assisted by an advisor of his/her choice.
7. The burden of sustaining the challenge rests with the student.
8. The student and the department head have the right to present evidence and witnesses directly related to that portion(s) of the student's record being challenged.
9. The hearing officer shall keep a taped record of the hearing.
10. The hearing officer must provide the student with a written notification of the disposition of the challenge including the reason(s) for the disposition.

### Institutional personnel access to student records:

1. Students have 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.
  - a. 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, including law enforcement unit personnel; a person or company with whom the College has contracted such as an attorney, auditor or collection agent; 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.

- b. 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.
2. Financial aid information supplied by students or parents will be maintained on a confidential basis, with only necessary information released to institutional personnel from the standpoint of processing financial aid awards



### Second-Year Student Status

A "second-year student" is anyone who has completed thirty or more credit hours.

### Affirmative Action

#### Policy Statement

1. The Northwest State Community College affirmative action policy has as its objective the equal employment and treatment of all individuals without regard to race, color, religion, sex, national origin or ancestry, handicap, age, marital or parental status, veteran status, or other non-job related factors.
2. The College is fully committed to providing:
  - a. equal opportunities in all employment-related activities, including but not limited to, recruiting, hiring, advancement, transfer, compensation, benefits, and terms of employment;
  - b. Equal opportunities in all educational, social and recreational programs;
  - c. Physical access to all facilities.
3. It is the intent that this policy be in full compliance with

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all applicable federal and state laws and regulations concerning affirmative action.

### Harassment Policy Statement

#### General Policy Statement

It is the policy of Northwest State Community College to provide a positive, discrimination free educational and working environment. We are committed to a policy of non-discrimination on the basis of sex, race, color, national origin, sexual orientation, marital status, disability, religion, or age in admission and access to, or treatment, or employment in our programs or activities as required by Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, Title VI and VII of the Civil Rights Act of 1964, the Age Discrimination Act and their implementing regulations. Harassment, sexual harassment, and/or sexual misconduct of students, employees, or others working or visiting in the employment or academic setting will not be tolerated.

To help ensure that employees and students are not subjected to illegal harassment/bullying, and in order to create a comfortable work and learning environment, the college strongly opposes and prohibits any offensive physical, written, spoken, or non-verbal conduct as defined and otherwise prohibited by state and federal law.

Sexual misconduct in the work or academic setting will not be tolerated. The college seeks to provide and maintain a professional learning and working environment and considers consensual sexual relationships in which one individual has direct responsibility for the evaluation of the other, or has responsibility for supervising, advising, or counseling the other in the course of carrying out his/her job responsibilities, to be unprofessional.

Offenders will be subject to appropriate college adjudication processes and the full range of disciplinary action provided by college policy, up to and including discharge, dismissal, or expulsion. This policy and its procedures shall be the only internal college forum of resolution for harassment, sexual harassment, and/or sexual misconduct complaints.

#### Reports and Complaints of Harassing Conduct

Students are encouraged to promptly report incidents of harassing conduct to a vice president, the Dean of your division, faculty or administrators so that the College may address the conduct before it becomes severe, pervasive or persistent.

#### Confidentiality

The College will make reasonable efforts to maintain the confidentiality of the parties involved in a harassment investigation. Confidentiality, however, cannot be guaranteed. A full copy of the NSCC Anti-Harassment Policy is available in the Office of the Vice President for Academics.

### Code of Student Conduct

The code of student conduct exists to advance the core missions of the college, promote a safe and secure educational environment, foster the academic and social development of students, and protect the persons, property, processes and academic integrity of the college community. Although the code is intended to be as comprehensive as possible, it makes no attempt to list all activities,

behavior or conduct which may adversely affect the college community.

In order to maintain an orderly process for learning, the instructor/supervisor/administrator has the authority to exclude any student who is considered to be detrimental to an ongoing learning experience. Disciplinary action may include, but is not limited to, disciplinary probation, suspension, dismissal, expulsion, withholding of transcripts or other appropriate action.

The code applies to the on-campus conduct of all students and registered student organizations. The code also applies to the off-campus conduct of students and student organizations in direct connection with:

- a. A class assignment;
- b. Academic course requirements or any credit-bearing experiences, such as clinical experiences, externships, internships, field trips, study abroad or student teaching;
- c. Any activity supporting pursuit of a degree;
- d. Activities sanctioned, sponsored, conducted or authorized by the College or by registered student organizations;
- e. Any activity that causes substantial destruction of property belonging to the College or members of the College community or causes serious harm to the health or safety of members of the College community; or
- f. Any activity in which a police report has been filed, a summons or indictment has been issued or an arrest has occurred for a crime of violence.

All persons are encouraged to report code violations to a College official as soon as possible. Charges must be filed within sixty days of the incident or of the identification of the person having allegedly committed the violation. Students continue to be subject to city, state and federal laws while at the college. Violations of city county, state and/or federal laws may also constitute violations of the code. The college reserves the right to proceed with disciplinary action under the code, independently of any criminal proceedings and impose sanctions for code violation, whether or not the criminal proceedings are resolved or is resolved in the student's favor.

Any student found to have engaged, or attempted to engage, in any of the following conduct while within the College's jurisdiction will be subject to disciplinary action by the college. Prohibited Conduct may include but is not limited to academic misconduct, endangering health or safety of others, sexual misconduct, destruction of property, possession of dangerous weapons, dishonest conduct, theft, failure to comply with College authority, use or possession of drugs or alcohol, unauthorized presence, disorderly or disruptive conduct, hazing, abuse of discipline proceedings, misuse of computing resources, violation of college rules, and riotous behavior.

A student who is formally charged with a code violation will have their case heard at an administrative proceeding. Failure of the accused student to respond to the initiation of charges or schedule a preliminary meeting will not prevent the College from scheduling an administrative hearing and conducting the hearing in the student's absence. Disciplinary action may include but is not limited to disciplinary warning, disciplinary probation, suspension, dismissal, expulsion, withholding of transcripts or other appropriate action.

A complete copy of the policy with definitions and procedural

guidelines can be obtained from the Vice President for Academics.

### Student Due Process and Grievance Policy

Resolution of a problem, whether academic or administrative, including challenging of a grade, can be achieved through proper channels or authority and may be resolved at any level of the due process and grievance procedure. Any student filing a grievance must follow the step-by-step procedure in the listed sequence.

### Academic and Non-Academic Matter

**Informal discussion** between the student and the faculty member or administrator should take place within twelve (12) instructional days\* from the date of occurrence or discovery.\*\* If the matter is not resolved, the student may invoke the formal written appeal process outlined below.

\* An instructional day is defined as any day, Monday through Saturday, that NSCC holds classes, during the regular fall, spring, and summer (8 week) term.

\*\*A grade challenge date of occurrence will be the date posted to the transcript.

#### Step 1 - Formal Appeal Process

- i. The student will submit a written grievance form to the individual involved within six (6) instructional days following unresolved informal discussion. If the written request is not received within the 6-day deadline, the case will be considered closed and the student will have forfeited the right for an appeal hearing.
- ii. Within six (6) instructional days of receiving the formal grievance, the individual involved and the student will meet and attempt to resolve the problem to the mutual satisfaction of both parties.
- iii. The faculty member/administrator will issue a written response to the student within six (6) instructional days after the meeting.
- iv. If the problem is not resolved in step one or the above time frames are not adhered to by the faculty member/administrator, the student may proceed with Step 2.

#### Step 2 - Formal Appeal Process

- i. Within six (6) instructional days of receiving the written response from Step 1, the student will submit the original grievance form to the supervisor of the individual involved, with a copy to the Vice President for Academics.
- ii. Within six (6) instructional days of receiving all written documentation, the immediate supervisor will meet with the student and the individual involved to attempt to resolve the problem to the mutual satisfaction of both parties. The Vice President for Academics may attend this meeting at his/her discretion.
- iii. Within six (6) instructional days after the meeting, the immediate supervisor will issue a written response to all parties involved, with the original copy to the Vice President for Academics.
- iv. If the problem is resolved, the written resolution issued by the supervisor will become part of the original document and bring closure to the grievance.
- v. If the problem is not resolved, the student may proceed to Step 3.
- vi. If the above time frames are not adhered to by the student,

the case will be considered closed and the student will have forfeited the right for an appeal hearing.

#### Step 3 - Formal Appeal Process

- i. Within six (6) instructional days of receiving the written response from Step 2, the student may request a formal hearing by notifying the Vice President for Academics. If the request is not received within the 6-day deadline, the case will be considered closed, and the student will have forfeited the right for an appeal hearing.
- ii. \*Within six (6) instructional days of receiving the request, the Vice President for Academics will appoint an ad hoc due-process committee to hear the grievance.
  1. The ad hoc committee will consist of five (5) members: one grade level I, II, or III employee; two faculty members; an officer of the student body organization; and a person of the student grievant's choice (person must be a present student, faculty member or other employee of the college).
  2. Alternate committee members may be appointed as well by the Vice President for Academics. Grade level I, II, and III include Vice Presidents, Division Deans and student service professionals.
  3. The Vice President for Academics will appoint one member of the ad hoc committee to act as chair for the proceedings.
- iii. \*The hearing will take place within six (6) instructional days after the committee appointments. To prepare for the hearing, the chair of the ad hoc committee may make the following arrangements, which are intended to facilitate due process.
  1. Provide all ad hoc committee members with copies of the written grievance prior to the meeting.
  2. Identify a date, time and meeting place convenient for the ad hoc committee members, the student grievant, and the person who is the object of the grievance.
  3. Inform the student and the individual involved that they may present witnesses and additional written documentation at the hearing.
  4. The following chronology for the hearing and follow-up is recommended. (The proceedings may also be tape-recorded, provided that all parties are informed in advance.)
    - a. Select a recorder.
    - b. Review the grievance and hearing procedures. This segment will be closed to the grievant and faculty member.
    - c. Invite the student to be heard. The student may present witnesses and additional written documentation at this time. This segment will be closed to the faculty member / administrator.
    - d. Invite the individual involved to be heard, at which time he or she may provide witnesses and additional written documentation. This segment will be closed to the student.
    - e. In closed session, the committee will discuss its findings and reach a clear and explicit decision. The student and individual involved may be invited to reappear and provide more information as requested.
  5. Within six (6) instructional days after the formal hearing is concluded, the ruling of the ad hoc committee will be presented in writing to the



## College Policies

student, the faculty member/ administrator involved, the department dean, and the Vice President for Academics, who will implement the ruling.

6. The decisions rendered by the ad hoc due-process committee will be final. All committee members will need to sign the decision on Step 3 Form at the time the decision is made.
7. All original documentation will be kept on file in the Vice President for Academic's office.

*\*Timelines for step 3, iii. are not strictly enforced during the summer semester – student would be notified of altered timeframe.*

### Study at Other Institutions

A student who wants to attend another institution during the summer or any other part of the academic year, for the purpose of transferring credit to a degree program of NSCC, must first obtain permission from the Vice President for Academics and file a transient student form signed by the Vice President for Academics or the Registrar.

Only credit hours transfer - quality points and grades are not figured into the student's permanent record.

### Campus Crime and Security Policy

Northwest State Community College does comply with the Geanne Clery Disclosure of Campus Security and Campus Crime Statistics Act. The Campus Security Report can be found on the college website.

### Drug Free Workplace Policy

Northwest State Community College shall comply with the Drug Free Workplace Act of 1988 and the Drug Free Schools Community Act of 1989.

### Protection of Human Subjects Research Policy

Northwest State Community College shall comply with the federal provisions of the protection of human subjects in research policy in accordance with 45 CFR 46, and 21 CFR 56. Research proposals must be reviewed and approved prior to any research activity. Contact the Vice President for Academics for more information.

### Smoking and Tobacco Use Policy

Smoking and the use of tobacco products including electronic cigarettes (ecigarettes) is prohibited at all times in all Northwest State Community College buildings and fleet vehicles. This also applies to satellite and other locations where NSCC classes are conducted. Smoking is only permitted in the small courtyard south of the vending area of the "E" Building, on the smokers' court north of the sidewalk entering the Atrium and inside personal vehicles in the parking lot on the Archbold Campus.



## Northwest State Core Requirements

General Studies courses provide instruction that is essential to a well-rounded education, including written and oral communications, humanities, natural sciences, mathematics, and social and behavioral sciences. Every degree program requires a core of these general education courses to insure that our graduates are not only academically prepared but also better citizens. Arts & Sciences courses help the students develop ways of approaching information and experience that strengthen their reasoning capacity, their awareness of relationships and responsibilities in a social and civic context, and their attention to values and moral issues.

As part of the graduation requirements for the Associate of Arts, Associate of Science, Associate of Applied Business, Associate of Applied Science, Associate of Individualized Study, and Associate of Technical Study degrees, a student must complete at least five courses of general studies. These courses are distributed within five core categories. Students must take at least one course from each of the five categories as listed below. Students should consult their degree program for specific requirements within this core.

Associate of Arts and Associate of Science degrees are recommended primarily for students who plan to transfer to a four-year college or university. The planned program of instruction is generally equivalent to the first two years of a baccalaureate degree program.

### Core Requirements

**I** ENG111 Composition I

### II Natural Sciences

BIO100	World of Science
BIO101	Principles of Biology
BIO115	Ecology
BIO131	Nutrition
BIO150	The Human Body
BIO180	Genetics
BIO201	General Biology I
BIO202	General Biology II
BIO231	Anatomy & Physiology
BIO232	Anatomy & Physiology II
BIO257	Microbiology
CHM100	World of Science
CHM101	Principles of Chemistry
CHM201	General Chemistry I
CHM202	General Chemistry II
CHM256	Principles of Biochemistry
PHY100	World of Science
PHY101	Principles of Physical Science
PHY140	Astronomy
PHY150	Geology
PHY251	Physics: Mechanics & Heat
PHY252	Physics: Electricity & Magnetism

### III Humanities

ENG223	Interpretation of Literature
ENG230	Children's Literature
ENG240	Introduction to Poetry
ENG241	Introduction to Fiction
ENG250	American Literature Through the Mid-19th Century

ENG251	American Literature Since the Mid-19th Century
ENG260	British Literature Through the 18th Century
ENG261	British Literature 19th Century to Present
HUM209	Humanities and Cultures: Ancient & Medieval Worlds
HUM210	Humanities and Cultures: Renaissance to Present
HUM221	Music Appreciation
HUM230	Art Appreciation
PHI110	Critical Thinking & Logic
PHI201	Introduction to Philosophy
PHI210	Ethics
PHI220	Ethics in Health Care
PHI230	World Religions

### IV Social/Behavioral Sciences

HIS101	US History Pre-1876
HIS102	US History Post-1876
HIS203	US Since 1945
HIS210	The Modern World
PSY110	General Psychology
PSY210	Abnormal Psychology
PSY220	Social Psychology
PSY230	Human Growth & Development
SSC101	Sociology
SSC120	American Government
SSC130	Comparative Government
SSC210	Cultural Diversity

### V Mathematics and Data Analysis

MTH105	Quantitative Reasoning
MTH109	College Algebra
MTH112	Trigonometry
MTH170	Survey of Mathematics
MTH213	Calculus I
MTH214	Calculus II
STA120	Introduction to Statistics
STA222	Business Statistics

In addition to these requirements, MTH080 proficiency is required for all NSCC associate degree and one-year certificate graduates; however, individual programs may require a higher mathematics competence. This requirement may be fulfilled by placement test, proficiency test, or by taking the course.



Education  
is the most  
powerful weapon  
which you can use  
to change the world.

-Nelson Mandela





# ARTS & SCIENCES

Contact the Dean: Lana Snider

419.267.1247

[lsnider@northweststate.edu](mailto:lsnider@northweststate.edu)



## Arts & Sciences Division

If you are trying to identify a program that will help you increase your knowledge, skills and abilities while enhancing your career options then the Arts & Sciences Division has programs to meet your needs.

Develop your critical thinking skills, sharpen your writing ability, and enhance your knowledge by completing a degree in Arts & Sciences. Position yourself to compete for jobs in the global economy by choosing the first step toward a bachelor's degree and a successful career.

The Associate of Arts (AA), Associate of Science (AS) and the Transfer Module (TM) programs are all designed to transfer into various bachelor degree programs. The future demands highly-skilled and knowledgeable people who are adaptable, flexible, and capable of embracing change in a fast-paced world. Choosing to pursue an AA, AS or the TM will help you develop the skills and knowledge required to be a highly sought-after graduate – by both universities and employers. Sign up and take the first step on your journey to success! Whatever goals you want to accomplish, our courses will help you develop the ability to achieve them.

### Program Learning Outcomes

1. Produce unified, coherent, and well-developed essays following the rules of written academic English and proper source documentation.
2. Interpret the larger thematic, historical, or cultural significance of primary works in the humanities.
3. Define and apply key concepts when examining human functioning and problems in society.
4. Demonstrate symbolic and graphic manipulations using analytic mathematics skills appropriate to the program.
5. Incorporate the steps of the scientific method, beginning with a question, and concluding by analyzing data and drawing conclusions about a stated hypothesis.
6. Apply information literacy skills focusing on locating and evaluating scholarly sources.

### Prerequisites

All students are required to demonstrate proficiencies in reading, writing, and mathematics based on scores on a placement test or by taking the recommended classes. If you have not taken the tests, stop by the Admissions Office in C106 or call (419) 267-1320 for information or referral to testing.

Some courses listed in this program have specific prerequisites. See prerequisites required for each course in the Course Description section of this publication.

### General Education

For Northwest State Core Requirements for all graduates, See page 31.

Students enrolled in either the Associate of Arts or Associate of Science degree program must demonstrate the following abilities through placement testing or successful course completion:

ENG095	Integrated College Reading
ENG099	Writing Workshop
MTH050	Review of Basic Math
MTH080	Review of Beginning Algebra
MTH090	Intermediate Algebra
MTH099	Engineering Math
CIS090	Introduction to Computers
OAS090	Keyboarding Basics

Additional courses should be selected in line with the student's chosen field of study and the four-year college to which the student plans to transfer. Note that many four-year institutions require a foreign language sequence.

# Associate of Arts

## Arts and Sciences Division

**English and Composition:**

2 Courses Required

ENG111	Composition I (“C” or better required)	3
ENG112	Composition II (Required)	3

**Credits**

**Humanities:**

15 Credit Hours Required

- One literature course: ENG223, ENG240, ENG241, ENG250, ENG251, ENG260, ENG261 (required)

- One humanities survey: HUM209 or HUM210 (required)

- No more than 6 hours in the applied arts\*

ART103	Beginning Drawing*	3
ART210	Oil/Acrylics*	3
ART220	Beginning Sculpture*	3
ENG217	Introduction to Creative Writing* ...	3
ENG223	Interpretation of Literature	3
ENG230	Children’s Literature	3
ENG240	Introduction to Poetry	3
ENG241	Introduction to Fiction	3
ENG250	American Literature Through the Mid-19th Century	3
ENG251	American Literature Since the Mid-19th Century	3
ENG260	British Literature Through the 18th Century	3
ENG261	British Literature 19th Century to Present	3
HUM209	Humanities and Cultures: Ancient & Medieval Worlds	3
HUM210	Humanities and Cultures: Renaissance to Present	3
HUM221	Music Appreciation	3
HUM230	Art Appreciation	3
PHI110	Critical Thinking and Logic	3
PHI201	Introduction to Philosophy	3
PHI210	Ethics	3
PHI230	World Religions	3

**Credits**

**Mathematics and Natural Science:**

10 Credit Hours Required

- At least 1 course must be a lab course\*

- One Transfer Module (TM) approved mathematics or statistics class \*\*

- Please Note: BIO100, CHM100 and PHY100 are the same course-choose the disciplinary prefix of most interest to you

BIO100	World of Science	3
BIO101	Principles of Biology*	4
BIO115	Ecology*	4
BIO150	The Human Body	4
BIO180	Genetics*	4
BIO201	General Biology I*	4
BIO202	General Biology II*	4
BIO231	Anatomy & Physiology I*	4
BIO232	Anatomy & Physiology II*	4
BIO257	Microbiology*	4
CHM100	World of Science	3
CHM101	Principles of Chemistry*	4
CHM110	Science & Technology of Sustainability*	4
CHM138	Principles of Forensics	4
CHM201	General Chemistry I*	5
CHM202	General Chemistry II*	5
CHM256	Principles of Biochemistry*	3
PHY100	World of Science	3
PHY101	Principles of Physical Science*	4
PHY140	Astronomy*	4
PHY150	Geology*	4
PHY251	Physics: Mechanics & Heat*	4
PHY252	Physics: Electricity & Magnetism*	4
MTH109	College Algebra**	3
MTH112	Trigonometry**	3
MTH213	Calculus I**	5
MTH214	Calculus II**	5
STA120	Introduction to Statistics**	3

**Social/Behavioral Sciences:**

15 Credit Hours Required

One Behavioral Science Course Required:

PSY110	General Psychology	3
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One Social Science Course Required:

SSC101	Sociology	3
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For remaining credits, choose from the following:

ECO211	Macroeconomics	3
ECO212	Microeconomics	3
GEO110	World Geography	3
GEO210	Geography - U.S. & Canada	3
HIS101	U.S. History Pre-1876	3
HIS102	U.S. History Post-1876	3
HIS203	U.S. Since 1945	3
HIS210	The Modern World	3
HST212	Principles of Addiction	3
HST240	Social Problems	3
HST242	Marriage and the Family	3
PSY210	Abnormal Psychology	3
PSY220	Social Psychology	3
PSY230	Human Growth & Development	3
SSC120	American Government	3
SSC130	Comparative Government	3
SSC210	Cultural Diversity	3

**Credits**

**Elective:**

14 Credit Hours Required

Electives may include any 100 or 200 level course. Electives should be selected in line with the student’s chosen field of study and the four-year college to which the student plans to transfer. Note that many four-year institutions require a foreign language sequence.

**Total Required:**

60 Credit Hours

Curriculum guide sheets for typical programs are available from Admissions. Students planning to transfer to another college should use a guide sheet to help with academic planning. For additional guidance, students should contact the college to which they intend to transfer and contact the Arts & Sciences Division office.

Students must attain an overall 2.00 grade point average to graduate.



## Associate of Science

## Arts &amp; Sciences Division

**English Composition:**

2 Courses Required

ENG111	Composition I ("C" or better required)	3
ENG112	Composition II (Required)	3

**Credits****Humanities:**

12 Credit Hours Required

- One Literature course: ENG223, ENG240, ENG241, ENG250, ENG251, ENG260, ENG261 (required)

- One humanities survey: HUM209 or HUM210 (required)

- No more than 6 hours in the applied arts\*

ART103	Beginning Drawing*	3
ART210	Oil/Acrylics*	3
ART220	Beginning Sculpture*	3
ENG217	Introduction to Creative Writing*	3
ENG223	Interpretation of Literature	3
ENG230	Children's Literature	3
ENG240	Introduction to Poetry	3
ENG241	Introduction to Fiction	3
ENG250	American Literature Through the Mid-19th Century	3
ENG251	American Literature Since the Mid-19th Century	3
ENG260	British Literature Through the 18th Century	3
ENG261	British Literature 19th Century to Present	3
HUM209	Humanities and Cultures: Ancient & Medieval Worlds	3
HUM210	Humanities and Cultures: Renaissance to Present	3
HUM221	Music Appreciation	3
HUM230	Art Appreciation	3
PHI110	Critical Thinking and Logic	3
PHI201	Introduction to Philosophy	3
PHI210	Ethics	3
PHI230	World Religions	3

**Credits****Social/Behavioral Sciences:**

12 Credit Hours Required

- One Behavioral Science Course Required:

PSY110	General Psychology	3
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- One Social Science Course Required:

SSC101	Sociology	3
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For remaining credits, choose from the following:

ECO211	Macroeconomics	3
ECO212	Microeconomics	3
GEO110	World Geography	3
GEO210	Geography - U.S. & Canada	3
HIS101	U.S. History Pre-1876	3
HIS102	U.S. History Post-1876	3
HIS203	U.S. Since 1945	3
HIS210	The Modern World	3
HST212	Principles of Addiction	3
HST240	Social Problems	3
HST242	Marriage and the Family	3
PSY210	Abnormal Psychology	3
PSY220	Social Psychology	3
PSY230	Human Growth & Development	3
SSC120	American Government	3
SSC130	Comparative Government	3
SSC210	Cultural Diversity	3

**Credits****Mathematics and Natural Science:**

16 Credit Hours Required.

- At least 2 courses must be lab courses\*

- Mathematics proficiency must be demonstrated at the level of MTH 109 College Algebra and MTH112 Trigonometry or MTH213 Calculus I

- Please Note: BIO100, CHM100 and PHY100 are the same course-choose the disciplinary prefix of most interest to you

BIO100	World of Science	3
BIO101	Principles of Biology*	4
BIO115	Ecology*	4
BIO150	The Human Body	4
BIO180	Genetics*	4
BIO201	General Biology I*	4
BIO202	General Biology II*	4
BIO231	Anatomy & Physiology I*	4
BIO232	Anatomy & Physiology II*	4
BIO257	Microbiology*	4
CHM100	World of Science	3
CHM101	Principles of Chemistry*	4
CHM110	Science & Technology of Sustainability*	4
CHM138	Principles of Forensics	4
CHM201	General Chemistry I*	5
CHM202	General Chemistry II*	4
CHM256	Principles of Biochemistry*	3
PHY100	World of Science	3
PHY101	Principles of Physical Science*	4
PHY140	Astronomy*	4
PHY150	Geology*	4
PHY251	Physics: Mechanics & Heat*	4
PHY252	Physics: Electricity & Magnetism*	4
MTH109	College Algebra	3
MTH112	Trigonometry	3
MTH213	Calculus I	5
MTH214	Calculus II	5

**Electives:**

14 Credit Hours Required

Electives may include any 100 or 200 level course. Electives should be selected in line with the student's chosen field of study and the four-year college to which the student plans to transfer. Note that many four-year institutions require a foreign language sequence.

**Total Required:**

60 Credit Hours

Curriculum guide sheets for typical programs are available from Admissions. Students planning to transfer to another college should use a guide sheet to help with academic planning. For additional guidance, students should contact the college to which they intend to transfer and contact the Arts & Sciences Division office.

Students must attain an overall 2.00 grade point average to graduate.

# Visual Communication-Graphic Design

## Associate of Applied Business

### Arts and Sciences Division

Students for a variety of positions utilizing computer graphics and imaging skills. Graduates are prepared to produce public relations materials including print, video and electronic media.

Graduates may transfer as juniors to complete a bachelor’s degree in visual communications.

### Career Outlook

Opportunities within this field are expected to grow due to the emphasis on visual appeal in product design, advertising, marketing, web design and television. Willingness to relocate, however, may be an important factor since many of the opportunities will be in larger metropolitan areas.

### Program Learning Outcomes

Students will be able to:

1. Produce, analyze, and evaluate photos and video taken under various conditions.
2. Analyze, edit, and prepare photos for various uses.
3. Apply knowledge of graphics and drawing skills to create a product.
4. Manipulate software programs to create and enhance graphics, web pages, and print layouts.
5. Plan, prepare, and produce a multimedia project.

See page 31 for a list of Natural Science and Social Behavioral Science Electives.

### Communication Electives:

- BUS211 Business Communications
- ENG113 Speech
- ENG210 Technical Writing
- ENG214 Discussion & Conference Methods
- ENG217 Introduction to Creative Writing

### Mathematics Electives:

- MTH105 Quantitative Reasoning
- MTH109 College Algebra (Transfer)

### Program Electives:

- ART210 Oil/Acrylic Painting
- ART220 Beginning Sculpture
- BUS221 Business Law
- CAD111 CAD I
- MGT110 Management
- MTH112 Trigonometry (Transfer)
- VCT289 VCT Co-Op Experience

<u>First Semester</u>		<u>Credits</u>
ART103	Beginning Drawing .....	3
CIS114	Microsoft Applications .....	3
ENG111	Composition I .....	3
+ VCT103	Introduction to Visual Communication .....	3
+ VCT108	Photo Editing .....	2
+ VCT182	Photography .....	<u>3</u>
		17

<u>Second Semester</u>		<u>Credits</u>
+ CIS119	PowerPoint .....	1
+ CIS129	Web Page Development .....	3
ENG112	Composition II .....	3
+ VCT111	Layout & Design .....	3
+ VCT120	Vector Graphics .....	3
	Mathematics Elective .....	<u>3</u>
		16

<u>Third Semester</u>		<u>Credits</u>
ACC111	Financial Accounting .....	3
HUM230	Art Appreciation .....	3
+ VCT261	3D Computer Modeling .....	3
+ VCT268	Video Production .....	3
	Natural Science Elective .....	<u>3</u>
		15

<u>Fourth Semester</u>		<u>Credits</u>
+ VCT204	Concepts of Visual Communication	3
+ VCT266	Multimedia Production .....	3
	Communication Elective .....	3
	Program Elective* .....	3
	Social Behavioral Science Elective.	<u>3</u>
		15

**Total Program Credit Hours** **63**

- \* Students planning to transfer to a four-year college should take MTH112 Trigonometry.
- + Students must attain a 2.00 grade point average in these technical courses to graduate.

## Northwest State Transfer Module

### Arts & Sciences Division

The NSCC Transfer Module consists of 40 semester credit hours which will transfer to any Ohio public two- or four-year college. Students should follow the instructions below in selecting courses for the Transfer Module:

1. Choose courses to fulfill the minimum requirements in each section below, according to the guidelines provided.
2. Complete the remaining hours of the Transfer Module by selecting additional courses listed in any of the sections to total the 40 semester hours required for the Transfer Module. NOTE: Be sure to check with an advisor to assure that the courses chosen are appropriate for both the major and the transfer institution selected. Also, check the college catalog for any prerequisite requirements.
3. NSCC students completing the Associate of Arts or Associate of Science degree requirements will have satisfied this Transfer Module.

#### English Composition: Credits

- 2 courses required:

ENG111	Composition I (required).....	3
ENG112	Composition II (required) .....	3

#### Oral Communication: Credits

ENG113	Speech .....	3
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#### Mathematics Electives: Credits

- Select a minimum of 1 course from the following list:

MTH109	College Algebra.....	3
MTH112	Trigonometry.....	3
MTH213	Calculus I .....	5
MTH214	Calculus II .....	5
STA120	Introduction to Statistics.....	3

#### Arts & Humanities: Credits

- Select a minimum of 3 courses from the following list:

ENG223	Interpretation of Literature .....	3
ENG230	Children's Literature .....	3
ENG240	Introduction to Poetry .....	3
ENG241	Introduction to Fiction.....	3
ENG250	American Literature Through the Mid-19th Century .....	3
ENG251	American Literature Since the Mid-19th Century .....	3
ENG260	British Literature Through the 18th Century .....	3
ENG261	British Literature 19th Century to Present.....	3
HUM209	Humanities and Cultures: Ancient and Medieval Worlds.....	3
HUM210	Humanities and Cultures: Renaissance to Present .....	3
HUM221	Music Appreciation .....	3
HUM230	Art Appreciation.....	3
PHI110	Critical Thinking and Logic .....	3
PHI201	Introduction to Philosophy .....	3
PHI210	Ethics.....	3
PHI230	World Religions.....	3

#### Social/Behavioral Sciences Credits

- Select a minimum of 3 courses from at least 2 areas on the following list:

ECO211	Macroeconomics .....	3
ECO212	Microeconomics.....	3
GEO110	World Geography .....	3
GEO210	Geography - US and Canada.....	3
HIS101	U.S. History Pre-1876.....	3
HIS102	U.S. History Post-1876 .....	3
HIS203	U.S. Since 1945.....	3
HIS210	The Modern World .....	3
HST240	Social Problems.....	3
HST242	Marriage and the Family .....	3
PSY110	General Psychology .....	3
PSY210	Abnormal Psychology.....	3
PSY220	Social Psychology .....	3
PSY230	Human Growth & Development .....	3
SSC101	Sociology.....	3
SSC120	American Government.....	3
SSC130	Comparative Government .....	3
SSC210	Cultural Diversity.....	3

#### Natural and Physical Sciences: Credits

- Select a minimum of 6 credits from the following list:

- \* Denotes a lab course

BIO101	Principles of Biology* .....	4
BIO115	Ecology* .....	4
BIO150	The Human Body .....	4
BIO180	Principles of Genetics* .....	4
BIO201	General Biology I* .....	4
BIO202	General Biology II*.....	4
BIO231	Anatomy & Physiology I* .....	4
BIO232	Anatomy & Physiology II* .....	4
BIO257	Microbiology*.....	4
CHM101	Principles of Chemistry* .....	4
CHM110	Science and Technology of Sustainability.....	4
CHM201	General Chemistry I* .....	5
CHM202	General Chemistry II* .....	5
CHM256	Principles of Biochemistry* .....	3
PHY101	Principles of Physical Science* .....	4
PHY140	Astronomy* .....	4
PHY150	Principles of Geology*.....	4
PHY251	Physics: Mechanics & Heat* .....	4
PHY252	Physics: Electricity & Magnetism* .....	4





# SCIENCE, TECHNOLOGY, ENGINEERING TECH, & MATH

Contact the Dean: Dr. Dan Burklo  
419.267.1394  
[dburklo@northweststate.edu](mailto:dburklo@northweststate.edu)

## Science, Technology, Engineering Tech, and Math Division

*Mission: To serve by providing an excellent educational experience, with genuine interest in our students' success and personal growth for their entire college career and beyond.*

*Vision: To be an integral part of NSCC as a recognized leader in the STEM fields, not only in the community but the region and the state.*

Northwest State Community College offers a variety of degree and certificate programs in the field of Engineering Technologies. Students enrolled in an Engineering Technologies program will benefit from the small classroom sizes as they learn to analyze problems and, more importantly, how to fix them.

Through the Engineering Technologies Division, students will be prepared to enter the workforce immediately after graduation. They will also have the option of transferring into a four-year degree program at a partnering college or university.

Degree and certificate programs offered through the Engineering Technologies Division include:

### Associate of Applied Science

- Computer Science Engineering Technology
- Electro-Mechanical Engineering (pending)
- Electrical Engineering Technology
- Mechanical Engineering Technology
- Project Management Technology

### Information Technology

- Computer Programming
- Internet Security
- Network Administration

### Mechanical Engineering Technology

- CAD/CAM
- Plastics (pending)

### Certificate Programs

- Computer Aided Design
- Computer Technician
- Plastics Manufacturing
- Quality Control

### Course Sequence

The suggested sequence of courses is for full-time students. If you are a part-time student or have transferred courses in from another school, you should generally complete the courses listed under semester 1 before moving on to semester 2, 3, and then 4. Elective courses may be taken at any time. Please meet with your advisor if you need assistance to register. Your advisor can help you make any necessary changes to this recommended sequence.

### General Education

For Northwest State Core Requirements for all graduates, see page 31. Unless specified on the program page, Humanities and Social Behavioral Science electives should be selected from the Core Requirements list while Communication and Natural Science electives should be selected from the following elective lists.

#### Communications

ENG113	Speech
ENG210	Technical Communications

#### Natural Science

CHM101	Principles of Chemistry
CHM201	General Chemistry I
PHY101	Principles of Physical Science
PHY251	Physics: Mechanics & Heat
PHY252	Physics: Electricity & Magnetism

#### Technical Electives

Any AET, CAD, CET, EET, IND, INT, MET, PET, PLC or QCT course

### Prerequisites

All students are required to demonstrate proficiencies in reading, writing, and mathematics based on scores on the assessment test or take the recommended classes. If you have not taken these tests, stop by the Admissions Office in C106 or call (419) 267-1320 for information or referral to testing.

Some courses listed in this program have specific prerequisites. See prerequisites required for each course in the Course Description section of this publication.

# CAD/CAM

## Associate of Applied Science in Mechanical Engineering Technology

### Science, Technology, Engineering Tech, and Math Division

The CAD/CAM graduate will earn an Associate of Applied Science degree in the Mechanical Engineering Technology. Students completing the associate degree are qualified to play a support role to the engineering professionals in industry preparing blueprints, layouts, bills of materials, manufacturing and product support documentations. The CAD/CAM major will also prepare the student to interpret designs and to design components and tooling used in manufacturing and to operate production machines and program CNC machines, using G Codes and state-of-the-art CAM software.

### Career Outlook

Job seekers who have a two-year degree should have the best prospects for employment. With the shortage of skilled metalworkers in the United States today, the job opportunities are favorable for the CAD/CAM Technician.

### Program Learning Outcomes

Students earning an Associate degree from this program will:

1. Interpolate and complete engineered drawings using orthographic projection, isometric views, and proper dimensioning practices, then employ the use of Computer-Aided-Design (CAD) software.
2. Describe the different manufacturing processes and demonstrate proper use of precision measuring devices and instruments.
3. Demonstrate machining projects with an emphasis on safety, fixturing, feeds and speeds, tooling, precision, and accuracy.
4. Employ the use of Computer-Aided-Manufacturing (CAM) software.

See page 31 for a list of Humanities and Social/Behavioral Science Electives.

See page 40 for a list of Communications and Technical Electives.

<u>First Semester</u>	<u>Credits</u>
CAD111 CAD I.....	4
ENG111 Composition I.....	3
+ IND140 Principles of Machining .....	3
MET100 Intro to Engineering Technology.....	2
+ MET107 Engineering Graphics.....	<u>3</u>
	15

<u>Second Semester</u>	<u>Credits</u>
+ CAD213 CAD III .....	4
ENG112 Composition II .....	3
+ IND241 Tooling & Fixtures .....	3
+ MET222 Programming CNC.....	3
MTH109 College Algebra.....	<u>3</u>
	16

<u>Third Semester</u>	<u>Credits</u>
+ MET223 CAM I .....	4
MTH112 Trigonometry.....	3
+ QCT100 Quality Concepts.....	3
	3
	<u>3</u>
	16

<u>Fourth Semester</u>	<u>Credits</u>
+ MET260 CAM II .....	3
+ MET262 CAD/CAM Project .....	4
PHY251 Physics: Mechanics & Heat .....	4
+ CET115 Project Management or	
MET121 Manufacturing Processes or	
MET134 Engineering Materials .....	3
	<u>3</u>
	17

**Total Program Hours 64**

+ Students must attain a minimum grade of “C” in all courses with a ‘+’ to progress in the program and to graduate.



## Computer Aided Design Certificate

### Science, Technology, Engineering Tech, and Math Division

A Computer Aided Design Certificate prepares the individual to create engineering drawings using CAD software. Typically these individuals will work closely with mechanical engineers, sometimes receiving objectives and technical advice from supervisors and/or engineers (both Electrical and Mechanical), displaying both their knowledge of the software and current knowledge of drafting and design standards. It is expected by employers that individuals demonstrate excellent verbal, written and interpersonal communication skills.

Coursework (100 level or higher) completed in this certificate directly applies toward the associate degree in mechanical engineering technology with a CAD/CAM major.

#### Career Outlook

Graduates of this program may find employment as an entry-level CAD operator/technician or as a detailer working under the direction of a design engineer. Some of the typical duties of a CAD operator/technician will include: compiling and computing a variety of engineering data; developing and preparing schematics from designs made by you and/or others; making preliminary designs from rough specifications and/or verbal directions; generating and revising current engineering prints and three-dimensional patterns for parts and products; designing and modifying equipment used for manufacturing; building a bill of material for new or revised designs, revising drawings and checking prints for accuracy.

Job opportunities for CAD technicians will remain stable through the next several years, with most of the positions occurring from replacing workers who leave the profession or retire.

#### Program Learning Outcomes

Students earning a certificate from this program should demonstrate:

1. Demonstrate file handling and management
2. Demonstrate familiarity with computer software, CAD, computer hardware, and component terminologies
3. Interpret and apply the Cartesian coordinate system
4. Demonstrate setup, display, drawing, inquiry, and modify commands
5. Develop, modify, and manipulate symbols, crosshatching, and various types of dimensioning
6. Demonstrate inquiry commands and develop industrial-type detail and assembly drawings as well as produce finished projects

<u>First Semester</u>		<u>Credits</u>
+ CAD111	CAD I.....	4
IND103	Applied Geometry & Trigonometry	3
+ IND140	Principles of Machining.....	3
MET100	Into to Engineering Tech.....	2
+ MET110	Print Reading & Sketching.....	<u>3</u>
		15
<u>Second Semester</u>		<u>Credits</u>
+ CAD112	CAD II or	
+ CAD213	CAD III.....	4
ENG111	Composition I.....	3
+ IND241	Tooling & Fixtures.....	3
+ MET121	Manufacturing Processes or	
+ MET222	Programming CNC.....	3
+ QCT141	Precision Measurement.....	<u>3</u>
		16
	<b>Total Program Hours</b>	<b>31</b>

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

- + Students must attain a minimum grade of "C" in all courses with a '+' to progress in the program and to graduate.

# Computer Programming

## Associate of Applied Business in Information Technology

### Science, Technology, Engineering Tech, and Math Division

Computers play a part in nearly all phases of our life today. Businesses and governmental agencies, large and small, require trained computer specialists. The computer programming degree prepares computer programmers and computer operators to work with a wide variety of computers and languages used by area employers. Emphasis is placed upon business-oriented computer languages. Programming and practical applications of business data are stressed. In the laboratory, hands-on experience is provided using the Internet and PC compatible computers.

Graduates may find employment in entry-level positions with typical titles such as Computer Operator, Application Programmer, Maintenance Programmer, Software Developer or in Technical Support. A career path may include Lead or Senior Programmer and Data Processing Manager.

### Career Outlook

Employment of computer programmers is expected to be quite good. Opportunities should be especially favorable for those programmers who know several programming languages.

### Program Learning Outcomes

Student will be able to:

1. Demonstrate the ability to apply structured programming concepts.
2. Install and troubleshoot current Personal Computer hardware and current Operating System software.
3. Demonstrate software skills.
4. Write and debug programs.

### Mathematics Electives:

- MTH105 Quantitative Reasoning
- MTH109 College Algebra
- STA120 Introduction to Statistics
- STA222 Business Statistics

See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.

<u>First Semester</u>	<u>Credits</u>
BUS101 Introduction to Business.....	3
+ CIS111 Visual Basic Programming.....	4
+ CIS191 Computer Operations .....	3
ENG111 Composition I.....	3
Mathematics Elective .....	<u>3</u>
	16

<u>Second Semester</u>	<u>Credits</u>
+ CIS108 Internet Scripting.....	4
+ CIS109 Database Management .....	4
CIS114 Microsoft Applications.....	3
ENG112 Composition II .....	3
Humanities Elective .....	<u>3</u>
	17

<u>Third Semester</u>	<u>Credits</u>
ACC111 Financial Accounting .....	3
+ CIS150 Programming C++.....	4
+ CIS165 Java Programming.....	4
Natural Science Elective .....	<u>3</u>
	14

<u>Fourth Semester</u>	<u>Credits</u>
BUS211 Business Communications .....	3
+ CIS161 C#.....	4
+ CIS265 Java Programming II.....	4
Social Behavioral Science Elective	<u>3</u>
	14

**Total Program Credit Hours      61**

+ Students must attain a 2.00 grade point average in these technical courses to graduate.

# Computer Science Engineering Technology

## Associate of Applied Science

### Science, Technology, Engineering Tech, and Math Division

The Computer Science Engineering Technology program prepares graduates for the field of computer science with a comprehensive understanding of computer hardware and software at the machine and system level. The program combines curriculum in electronics and computer programming addressing both hardware and software aspects of computer design and applications. The design aspect places emphasis on computer structures, computer architectures, microcomputer systems, digital design, and computational applications. The applications part of the program includes a general knowledge of computer operating systems, utilization of software in engineering technologies, low- and hi-level programming techniques, and the use of mathematical algorithms.

#### Career Outlook

With an increasing utilization of computer systems and programming, demand for technicians with a computer science background is ever increasing. Graduates of this program will have the foundational coursework leading into four year computer science and electrical engineering programs at various universities, as well as being qualified for entry level engineering technicians in product design, engineering support, and other technical support positions. Typical job titles with this degree would include Application Specialist, Computer Systems Specialist, Computer Maintenance Technician, Field Service Representative, Field Engineer, Installation Technician, and Systems Integrator.

#### Program Learning Outcomes

Students earning an Associate degree from this program will be able to:

1. Apply fundamental electrical and magnetic theory and reduce to practice direct current (DC) circuits.
2. Discuss the foundations of digital logic.
3. Implement logic circuits using electronic and microprocessor hardware.
4. Write and debug software using high- and low-level structured programming techniques.
5. Utilize foundational algorithms and mathematical constructs.
6. Design and manage data network systems, including routers, switches, and data cable installations.

See page 31 for Humanities and Social Behavioral Science Electives.

See page 40 for Communications Electives.

<u>First Semester</u>		<u>Credits</u>
+	CIS191	Computer Operations ..... 3
+	EET121	DC Circuits..... 3
	ENG111	Composition I..... 3
	MET100	Intro to Engineering Technology..... 2
	MTH109	College Algebra..... 3
		Humanities Elective ..... 3
		17
<u>Second Semester</u>		<u>Credits</u>
+	EET122	AC Circuits..... 3
+	EET132	Discrete Structures ..... 3
+	EET240	Engineering Programming ..... 3
	ENG112	Composition II ..... 3
	MTH112	Trigonometry..... 3
		15
<u>Third Semester</u>		<u>Credits</u>
+	CIS165	Java Programming..... 4
+	EET231	Microprocessors ..... 4
+	EET272	Networking I ..... 3
	PHY251	Physics: Mechanics & Heat ..... 4
		15
<u>Fourth Semester</u>		<u>Credits</u>
+	EET221	Digital Circuits ..... 4
	PHY252	Physics: Electricity & Magnetism... 4
		Communications Elective ..... 3
+	EET282	Networking II ..... 3
		Social/Behavioral Science Elective. 3
		16
		<b>Total Program Hours</b> 64

+ Students must attain a minimum grade of “C” in all courses with a ‘+’ to progress in the program and to graduate.

# Computer Technician Certificate

## Science, Technology, Engineering Tech, and Math Division

The computer technician must have experience working on personal computers, experience working on networks and some programming experience. Technicians are acquainted with software packages such as word processors and spreadsheets. The computer technician must be knowledgeable in computer operations and computer systems.

<u>First Semester</u>	<u>Credits</u>
BUS101 Introduction to Business.....	3
+ CIS111 Visual Basic Programming.....	4
+ CIS191 Computer Operations .....	3
+ CIS193 Microsoft Server Technology.....	3
ENG111 Composition I.....	<u>3</u>
	16

### Career Outlook

Students can earn the associate degree by completing one year of full-time study beyond the Computer Technician Certificate. Graduates may find employment in entry-level positions such as computer technician, peripheral equipment operator, help desk technician or technical support.

<u>Second Semester</u>	<u>Credits</u>
BUS211 Business Communications .....	3
CIS114 Microsoft Applications.....	3
Mathematics Elective .....	3
+ Programming Elective.....	4
+ Technical Elective .....	<u>3</u>
	16

### Program Learning Outcomes

Students earning a certificate from this program will be able to:

1. Demonstrate the ability to apply structured programming concepts.
2. Install and troubleshoot current Personal Computer hardware and current Operating System software.
3. Demonstrate software skills.
4. Write and debug programs.

**Total Program Credit Hours** **32**

### Mathematics Electives:

- MTH105 Quantitative Reasoning
- MTH109 College Algebra
- STA120 Introduction to Statistics
- STA222 Business Statistics

### Technical Electives:

- CAD111 CAD I
- CIS109 Database Management
- CIS155 Linux Networking I
- CIS192 Microsoft Workstation Technology
- CIS195 Networking Essentials
- CIS194 IT Security Fundamentals
- CIS255 Linux Networking II
- CIS284 Microsoft Infrastructure Technology
- CIS285 Microsoft Directory Services Technology
- CIS290 Information Technology Internship
- EET272 Cisco Networking I

### Programming Electives:

- CIS108 Internet Scripting
- CIS150 Programming C++
- CIS161 C#
- CIS165 Java Programming

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

+ Students must attain a 2.00 grade point average in these technical courses to graduate.



## Electro-Mechanical Engineering Technology (pending) Associate of Applied Science

### Science, Technology, Engineering Tech, and Math Division

Graduates of this program will have the foundational coursework leading into four year mechanical and/or and electrical engineering technology programs at various universities, including a direct transfer into the Miami University degree completion program, as well as being qualified for entry level engineering technicians in product design, engineering support, and other technical support positions. This program, as well, is aligned to provide an option for college credit plus students who may be interested in an engineering technology field.

#### Career Outlook

The demand for technicians and engineering technologists remains high, with two of the main areas of interest in mechanical and electrical. While positions have historically been described as either mechanical or electrical, today many companies are looking for mechanical engineering technologists with some electrical background or electrical with some mechanical aptitude. Companies are looking for individuals with both mechanical and electrical skills. This has also been recognized by universities, who now offer Bachelor of Science degrees in electro-mechanical engineering technology. Graduates from this program will have the foundational coursework leading into four year mechanical and/or electrical engineering technology programs at various universities, including a direct transfer into the Miami University degree completion program. Graduates will also be qualified for entry level engineering technicians in product design, engineering support, and other technical support positions.

#### Program Learning Outcomes

Students earning an Associate degree from this program will be able to:

1. Understand fundamental electrical and magnetic theory and reduce to practice direct current (DC) and alternating current (AC) circuits.
2. Interpret electrical diagrams and schematics to predict behavior and to assess functionality using handheld and bench-top measurement instruments.
3. Implement computer-based instrumentation, and control of digital and analog electronics.
4. Interpolate and complete engineered drawings using orthographic projection, isometric views, and proper dimensioning practices, then employ the use of Computer-Aided-Design (CAD) software.
5. Describe the different manufacturing processes and demonstrate proper use of precision measuring devices and instruments.
6. Analyze and calculate the resolution of forces on rigid bodies; determine the stress, strain, and deflection.

See page 31 for a list of Humanities and Social/Behavioral Science Electives.

See page 40 for Communications Elective.

<u>First Semester</u>		<u>Credits</u>	
	ENG111	Composition I .....	3
	MTH109	College Algebra .....	3
	MET100	Intro to Engineering Technology ....	2
+	MET107	Engineering Graphics .....	3
+	EET122	DC Circuits .....	<u>3</u>
			14

<u>Second Semester</u>		<u>Credits</u>	
	ENG112	Composition II .....	3
	MTH112	Trigonometry .....	3
	PHY251	Physics-Mechanics and Heat .....	4
+	MET121	Manufacturing Processes .....	3
+	EET122	AC Circuits .....	<u>3</u>
			16

<u>Third Semester</u>		<u>Credit</u>	
+	MET235	Statics.....	3
+	MET234	Strengths of Materials.....	3
+	EET231	Microprocessors.....	3
		Social/Behavioral Science Elective	3
		Communications Elective.....	<u>3</u>
			15

<u>Fourth Semester</u>		<u>Credits</u>	
+	EET221	Digital Electronics .....	3
+	CAD213	Solid Modeling .....	4
+	CET115	Project Management OR.....	3
+	QCT100	Quality Concepts	
		Natural Science Elective.....	3
		Humanities Elective.....	<u>3</u>
			17

**Total Program Hours** **62**

+ Students must attain a minimum grade of "C" in all courses with a '+' to progress in the program and to graduate.

# Electrical Engineering Technology

## Associate of Applied Science

### Science, Technology, Engineering Tech, and Math Division

Electrical Engineering Technology (EET) is a comprehensive electrical technologies program that prepares graduates for employment as skilled technicians, or for pursuit of a Bachelor of Science degree in Engineering Technology. The EET program provides a foundation of electrical and electronics theory and practice applicable to a variety of subject areas including, but not limited to, Alternative energy systems, automation and control and electric drive technology. A focus on laboratory experience gives students the technical hand skill and problem solving insight to employ solutions in the field. The curriculum includes algebra-based courses with emphasis on applied science and engineering.

Students in the EET program have opportunity to participate in applied research and testing activities to supplement coursework.

### Career Outlook

Demand is growing for technicians in the electrical-related fields in northwest Ohio and across the country who possess diverse technical skills and problem solving acumen. The career outlook for graduates of the EET program is promising, with special opportunities in Alternative Energy and Electric Vehicle manufacturing and product improvement.

### Program Learning Outcomes

Students earning an Associate degree from this program will be able to:

1. Understand fundamental electrical and magnetic theory and reduce to practice direct current (DC) and alternating current (AC) circuits.
2. Interpret electrical diagrams and schematics to predict behavior and to assess functionality using handheld and benchtop measurement instruments.
3. Analyze electrical circuits using Ohm's Law and theorems for specifying conductors and components, and for calculating power and energy.
4. Fabricate electrical circuits, modules, and systems using industry-accepted practices.

See page 31 for a list of Humanities and Social/Behavioral Science Electives.

See page 40 for a list of Communications Electives.

<u>First Semester</u>	<u>Credits</u>
CAD111 CAD I or.....	4
CAD112 CAD II	
+ EET121 DC Circuits.....	3
ENG111 Composition I.....	3
MET100 Intro to Engineering Technology.....	2
MTH109 College Algebra.....	<u>3</u>
	15

<u>Second Semester</u>	<u>Credits</u>
+ EET122 AC Circuits.....	3
+ EET221 Digital Electronics.....	4
ENG112 Composition II .....	3
MTH112 Trigonometry.....	3
Communications Elective .....	<u>3</u>
	16

<u>Third Semester</u>	<u>Credits</u>
+ EET231 Microprocessors .....	4
+ EET272 Networking I .....	3
+ EET277 Industrial Electronics .....	3
PHY251 Physics: Mechanics & Heat .....	4
Social/Behavioral Science Elective .....	<u>3</u>
	17

<u>Fourth Semester</u>	<u>Credits</u>
+ EET240 Engineering Programming .....	3
+ PHY252 Physics: Electricity & Magnetism ..	4
+ PLC200 Programmable Controller I .....	3
+ EET282 Networking II or	
PLC230 Servo/Robotics Systems or	
CET115 Project Management.....	3
Humanities Elective .....	<u>3</u>
	16

**Total Program Hours                    64**

+ Students must attain a minimum grade of "C" in all courses with a '+' to progress in the program and to graduate.

# Internet Security

## Associate of Applied Business in Information Technology

### Science, Technology, Engineering Tech, and Math Division

An Internet Security professional assists in securing networks and computers from unauthorized activity. This program will teach students how to monitor networks using packet sniffing, secure networks using firewalls, secure network file systems, manage passwords, encrypt files, encrypt network traffic and deal with threats such as spyware, malware and viruses.

<u>First Semester</u>		<u>Credits</u>
BUS101	Introduction to Business.....	3
+ CIS191	Computer Operations .....	3
+ CIS193	Microsoft Server Technology.....	3
+ CIS195	Networking Essentials.....	3
ENG111	Composition I.....	<u>3</u>
		15

### Career Outlook

Career opportunities are numerous for individuals in this field. All organizations, large and small, use the computer as an integral part of their business. Workers need both software and hardware support to do their jobs. Graduates may find employment in entry-level positions with typical titles such as Internet Security Specialist, Network Security Analyst, Security Administrator or Computer Security Specialist.

<u>Second Semester</u>		<u>Credits</u>
CIS114	Microsoft Applications.....	3
+ CIS194	IT Security Fundamentals .....	3
ENG112	Composition II .....	3
	Natural Science Elective .....	3
+	Technical Elective .....	<u>3</u>
		15

### Program Learning Outcomes

Students earning an Associate degree from this program will be able to:

1. Demonstrate the ability to apply structured programming concepts.
2. Install and troubleshoot current Personal Computer hardware and current Operating System software.
3. Demonstrate software skills.
4. Implement procedures designed to counteract current Computer and Network security risks.

<u>Third Semester</u>		<u>Credits</u>
ACC111	Financial Accounting .....	3
+ CJT130	Criminal Justice Principles.....	3
	Mathematics Elective .....	3
+	Programming Elective.....	4
+	Technical Elective .....	<u>3</u>
		16

<u>Fourth Semester</u>		<u>Credits</u>
BUS211	Business Communications .....	3
+ CIS155	Linux Networking I.....	4
+ CIS284	Microsoft Infrastructure Technology	3
	Humanities Elective .....	3
	Social Behavioral Science Elective.	<u>3</u>
		16

### Mathematics Electives:

MTH105	Quantitative Reasoning
MTH109	College Algebra
STA120	Introduction to Statistics
STA222	Business Statistics

**Total Program Credit Hours      62**

### Programming Electives:

CIS108	Internet Scripting
CIS111	Visual Basic Programming
CIS150	Programming C++
CIS161	C#
CIS165	Java Programming

### Technical Electives:

CAD111	CAD I
CIS109	Database Management
CIS192	Microsoft Workstation Technology
CIS255	Linux Networking II
CIS285	Microsoft Directory Services Technology
CIS290	Information Technology Internship
EET272	Cisco Networking I

See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.

+ Students must attain a 2.00 grade point average in these technical courses to graduate.

# Mechanical Engineering Technology

## Associate of Applied Science

### Science, Technology, Engineering Tech, and Math Division

The machinery of modern industry consists of mechanical devices, levers that move, wheels that spin and cogs that must mesh. The mechanical engineering technology degree is designed to educate students in technology based, entry-level occupations related to the mechanical and manufacturing engineering fields. Graduates will be able to assist engineers and other professional staff engaged in plant and facilities maintenance and other plant engineering and management functions.

All aspects of industry are dependent on the production and reading of drawings to convey information.

The mechanical engineering technology degree provides students the opportunity to study engineering topics associated with the design and installation of mechanical equipment and systems with the option of transferring to another institution to pursue a four-year bachelor degree in Mechanical Engineering Technology.

The student who follows this course of study will be trained to function as a Mechanical Technician in a number of industrial situations which require knowledge of mechanical systems, engineering materials and equipment. The student may find himself/herself working closely with engineers engaged in designing, testing, servicing or assembly and installation of machinery and industrial equipment.

### Career Outlook

Many diverse occupations find their origins in the mechanical field. These occupations include a variety of titles in the areas of drafting, production, testing, design and analysis, to name a few. Employment in the mechanical field should be quite good with job opportunities growing as fast as average nationally and in the state of Ohio.

The largest need for mechanical engineering technicians will be in manufacturing, with companies continually wanting new or improved machinery.

### Program Learning Outcomes

Students earning an Associate degree from this program will:

1. Interpolate and complete engineered drawings using orthographic projection, isometric views, and proper dimensioning practices, then employ the use of Computer-Aided-Design (CAD) software.
2. Describe the different manufacturing processes and demonstrate proper use of precision measuring devices and instruments.
3. Examine the physical and chemical properties of engineering materials, analyze and calculate the properties of fluids.
4. Analyze and calculate the resolution of forces on rigid bodies; determine the stress, strain, and deflection, then design machines and mechanisms.

<u>First Semester</u>		<u>Credits</u>
	ENG111	Composition I..... 3
	MET100	Intro to Engineering Technologies 2
+	MET107	Engineering Graphics..... 3
+	MET121	Manufacturing Processes ..... 3
	MTH109	College Algebra <u>3</u>
		14

<u>Second Semester</u>		<u>Credits</u>
+	CAD213	CAD III ..... 4
	ENG112	Composition II ..... 3
+	MET134	Engineering Materials ..... 3
	MTH112	Trigonometry..... 3
	PHY251	Physics: Mechanics and Heat..... <u>4</u>
		17

<u>Third Semester</u>		<u>Credits</u>
+	QCT100	Quality Concepts..... 3
+	MET234	Strength of Materials..... 3
+	MET235	Statics ..... 3
		Natural Science Elective ..... 4
		Communications Elective ..... <u>3</u>
		16

<u>Fourth Semester</u>		<u>Credits</u>
+	MET255	Fluid Mechanics ..... 3
+	MET265	Machine Design ..... 3
+	CAD II	CADII or
+	EET121	DC Circuits or
+	CET115	Project Management..... 3
		Social/Behavioral Science Elective. 3
		Humanities Elective ..... <u>3</u>
		15

**Total Program Hours 62**

**See page 31 for a list of Humanities and Social/Behavioral Science Electives.**

**See page 40 for a list of Communications, Natural Science and Technical Electives.**

+ Students must attain a minimum grade of “C” in all courses with a ‘+’ to progress in the program and to graduate.



# Network Administration

## Associate of Applied Business in Information Technology

### Science, Technology, Engineering Tech, and Math Division

The Network Administration major provides the skills and training necessary to install and maintain networks using Microsoft and Linux Operating Systems. The program provides the student with training in current programming languages such as C++, Java, C#, and Visual Basic. Training is provided which will help students to prepare for certification tests offered by organizations such as CompTIA and Microsoft.

#### Career Outlook

Career opportunities are numerous for individuals in this field. All organizations, large and small, use computers as an integral part of how they do business. Workers need both software and hardware support to do their jobs. Graduates may find employment in entry-level positions with typical titles such as Network Administrator, Network Engineer, Network Installation Engineer, Computer Programmer, Technical Support or Help Desk. A career path may include Enterprise Network Administration, Lead or Senior Programmer, Systems Programmer and Data Processing Manager.

#### Program Learning Outcomes

Students earning an Associate degree from this program will be able to:

1. Demonstrate the ability to apply structured programming concepts.
2. Install and troubleshoot current Personal Computer hardware and current Operating System software.
3. Demonstrate software skills.
4. Install and troubleshoot Network Operating Systems and protocols.

#### Mathematics Electives:

MTH105	Quantitative Reasoning
MTH109	College Algebra
STA120	Introduction to Statistics
STA222	Business Statistics

#### Programming Electives:

CIS108	Internet Scripting
CIS111	Visual Basic Programming
CIS150	Programming C++
CIS161	C#
CIS165	Java Programming

#### Technical Electives:

CAD111	CAD I
CIS109	Database Management
CIS194	IT Security Fundamentals
CIS255	Linux Networking II
CIS290	Information Technology Internship
EET272	Cisco Networking I

See page 31 for a list of Humanities and Social/Behavioral Science Electives.

See page 40 for a list of Communications Electives.

<u>First Semester</u>		<u>Credits</u>	
	BUS101	Introduction to Business .....	3
+	CIS191	Computer Operations.....	3
+	CIS193	Microsoft Server Technology .....	3
+	CIS195	Networking Essentials .....	3
	ENG111	Composition I .....	3
			15

<u>Second Semester</u>		<u>Credits</u>	
+	CIS155	Linux Networking I .....	4
+	CIS284	Microsoft Infrastructure Technology ..	3
	ENG112	Composition II .....	3
		Social Behavioral Science Elective ...	3
+		Technical Elective.....	3
			16

<u>Third Semester</u>		<u>Credits</u>	
	ACC111	Financial Accounting .....	3
	CIS114	Microsoft Applications .....	3
+	CIS192	Microsoft Workstation Technology ...	3
+		Programming Elective .....	4
		Mathematics Elective .....	3
			16

<u>Fourth Semester</u>		<u>Credits</u>	
	BUS211	Business Communications.....	3
+	CIS285	Microsoft Directory Services Technology .....	3
		Humanities Elective.....	3
		Natural Science Elective.....	3
+		Technical Elective.....	3
			15

**Total Program Credit Hours** **62**

+ Students must attain a 2.00 grade point average in these technical courses to graduate.

## Plastics (pending)

### Associate of Applied Science in Mechanical Engineering Technology

#### Science, Technology, Engineering Tech, and Math Division

Plastics is one of the fastest growing manufacturing industries today. The plastics program at Northwest State Community College was created in response to the industry demand in northwest Ohio for employee training and student education in plastics manufacturing. Students will receive specialized training in thermoplastic materials, injection molding and plastics testing. Graduates will also be skilled in various processes such as blow molding, extrusion and thermoforming.

#### Career Outlook

While consumer demand for convenient, plastic products increases, so will the need for highly-skilled plastics technicians. Job titles in this field can include Molding Technician, Production Supervisor, design and development and quality control technician to name a few. Employment of plastic processing workers is expected to grow as fast as the average both nationally and in the state of Ohio. An increase in workers trained in the field will stem from manufacturers substituting plastic parts for those that had been manufactured from metal in the past.

#### Program Learning Outcomes

Students earning an Associate degree from this program will:

1. Discuss and explain polymers including history, current industry, recycling, types of polymers and properties, as well as analyze various polymeric structures and applications based on those structures.
2. Explain, compare, and contrast common manufacturing processes used in the plastics industry and select the appropriate process depending on the product, as well as the ability to outline major plastics process and establish a production intent process and troubleshoot various defects.
3. Demonstrate and explain the various properties and test associated with plastics materials, as well as the ability to make decisions on part requirements based on various properties and tests.
4. Explain secondary operations used in the plastics industry primarily for assembly and decoration and select appropriate secondary operations based on production requirements.
5. Evaluate and design a mold and die for dimensional stability, process ability, flow characteristics for production intent.

See page 31 for a list of Humanities and Social/Behavioral Science Electives.

See page 40 for a list of Communications Electives.

<u>First Semester</u>		<u>Credits</u>
	ENG111	Composition I..... 3
	MET100	Intro to Engineering Technology..... 2
	MTH109	College Algebra..... 3
+	MET107	Engineering Graphics..... 3
+	MET121	Manufacturing Processes ..... 3
		14

<u>Second Semester</u>		<u>Credits</u>
	ENG112	Composition II ..... 3
	MTH112	Trigonometry..... 3
	PHY251	Physics: Mechanics and Heat..... 4
+	CAD213	CAD111..... 4
+	PET115	Plastics Processes..... 4
		18

<u>Third Semester</u>		<u>Credits</u>
+	QCT100	Quality Concepts..... 3
+	MET234	Strength of Materials..... 3
+	MET235	Statics ..... 3
	CHM101	Chemistry ..... 4
+	PET215	Plastics Processes II ..... 4
		17

<u>Fourth Semester</u>		<u>Credits</u>
+	CET115	Program Management OR
+	MET255	Fluid Mechanics ..... 3
+	MET134	Engineering Materials ..... 3
		Communications Elective ..... 3
		Social/Behavioral Science Elective. 3
		Humanities Elective ..... 3
		15

**Total Program Hours 64**

+ Students must attain a minimum grade of “C” in all courses with a ‘+’ to progress in the program and to graduate.

## Plastics Manufacturing Certificate

### Science, Technology, Engineering Tech, and Math Division

A Plastics Manufacturing Certificate prepares the individual to setup and maintain injection molding processes; plastics testing processes and ensure quality control. Individuals may also be skilled in various processes such as blow molding, extrusion, and thermoforming. Typically these individuals report to manufacturing supervisors, receiving daily objectives from them.

Technicians work on assignments and tasks with minimum supervision and guidance, often requiring the technician to interface and pass down information to personnel on incoming and outgoing shifts. It is expected by employers that technicians demonstrate excellent verbal, written and interpersonal communication skills.

Coursework (100 level or higher) completed in this certificate directly applies toward the associate degree in plastics engineering technology.

### Career Outlook

Graduates of this program may find employment as entry-level mold technicians, mold setters, job setters and material handlers working under the direction of the manufacturing department. Some of the typical duties of these technicians will include performing: mold insert changes; material color changes; press start-ups and shut downs; mold changes and planned maintenance (PMs) on the molds; performing product inspections to verify conformance to specifications, ensuring quality control; and directing and performing adjustments of molding equipment, working closely with the production and the quality control departments.

### Program Learning Outcomes

Students earning a certificate from this program should demonstrate:

1. Discuss and explain polymers including history, current industry, recycling, types of polymers and properties.
2. Explain, compare, and contrast common manufacturing processes used in the plastics industry. Select the appropriate process depending on the product, as well as the ability to outline major plastics process and establish a production intent process and troubleshoot various defects.
3. Produce design concepts and orthographic projection. Interpolate dimensioning practices and read blueprints, as well as explain the various properties associated with plastics and the ability to perform functional tests used to determine properties.
4. Explain the theory of common secondary operations used in the plastics industry primarily for assembly and decorating.

<u>First Semester</u>		<u>Credits</u>
	IND105 Industrial Safety .....	2
	MET100 Intro to Engineering Tech.....	2
+	MET110 Print Reading & Sketching.....	3
+	PET110 Principles of Plastics .....	4
+	PET115 Plastics Processes I.....	<u>4</u>
		15

<u>Second Semester</u>		<u>Credits</u>
	ENG111 Composition I.....	3
	IND103 Applied Geometry and Trigonometry	3
+	PET215 Plastics Processes II .....	4
+	PET250 Plastics Secondary Operations .....	4
+	QCT100 Precision Measurement .....	<u>3</u>
		17

**Total Program Hours** **32**

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

- + Students must attain a minimum grade of "C" in all courses with a '+' to progress in the program and to graduate.

# Project Management Technology Associate of Applied Science

## Science, Technology, Engineering Tech, and Math Division

This program is designed to prepare graduates for careers as technicians, management trainees or supervisors in manufacturing. Courses include a mixture of business management topics with an emphasis on engineering technologies.

### Career Outlook

The demand for educated Project Managers continues to grow nationally and in the State of Ohio. Time management, hands on engineering, and refined communication skills are required by several industries in order to meet tight profit margins. Construction, Engineering, Logistics, and Manufacturing will be the strongest areas of employment for Project Management Technology.

### Program Learning Outcomes

Students earning an Associate degree from this program should demonstrate:

1. Interpolate and complete and complete engineered drawings using orthographic projection, isometric views, and proper dimensioning practices, as well as employ the use of Computer-Aided-Design (CAD) software.
2. Demonstrate proper use of precision measuring devices and instruments and the ability to apply SPC practices to various processes within the industry.
3. Efficiently and effectively manage projects, including scheduling, monitoring, and analyzing with respect to cost, time, and resources..
4. Basic knowledge of Engineering Technology based on the selected track

### Engineering Technology Tracks (Choose a track):

**Alternative Energy:** AET 100 Intro. to Alternative Energy and  
AET 200 Sustainable Building Design

**Construction:** CET 100 Construction Methods and Materials and  
CET 120 Construction Materials Testing

**Electrical:** EET 121 DC Circuits and  
EET 122 AC Circuits

**Mechanical:** MET 121 Manufacturing Processes and  
MET 134 Engineering Materials

**Plastics:** PET115 Plastics Processes I and  
PET215 Plastics Processes II

<u>First Semester</u>	<u>Credits</u>
ENG111 Composition I.....	3
+ MET100 Intro to Engineering Technology ....	2
+ MET107 Engineering Graphics.....	3
+ CIS114 Microsoft Applications.....	3
MTH109 College Algebra.....	<u>3</u>
	14

<u>Second Semester</u>	<u>Credits</u>
ENG112 Composition II .....	3
MTH112 Trigonometry.....	3
+ CAD213 CAD III .....	4
+ CET115 Project Management.....	3
+ Track 1.....	<u>3</u>
	16

<u>Third Semester</u>	<u>Credits</u>
PHY251 Physics: Mechanics & Heat .....	4
+ CET215 Project Management II.....	3
ECO212 Economics .....	3
Communications Elective .....	3
+ Track 2.....	<u>3</u>
	16

<u>Fourth Semester</u>	<u>Credits</u>
+ QCT100 Quality Concepts.....	3
ACC111 Financial Accounting .....	3
+ AET290 Capstone OR	
+ MET290 Engineering Tech Co-op Internship	3
Humanities Elective .....	3
Natural Science Elective .....	<u>4</u>
	16

**Total Program Hours** **62**

See page 31 for a list of Humanities and Social/Behavioral Science Electives.

See page 40 for Communications Electives.

+ Students must attain a minimum grade of “C” in all courses with a ‘+’ to progress in the program and to graduate.



## Quality Control Certificate

### Science, Technology, Engineering Tech, and Math Division

A Manufacturing Quality Certificate prepares the student for a career as a quality specialist (supplier quality engineer, green belt, mechanical inspector, quality technician, auditor and similar roles).

Twenty-first century manufacturing operations link productivity to quality. Lean manufacturing quality concepts are essential to modern competitiveness. Accordingly, persons seeking greater responsibility should consider the quality curriculum.

This program of study prepares the student to sit for American Society for Quality Technician exam. ASQ certifications are widely recognized and favorably impact hiring and compensation decisions.

#### Career Outlook

The greatest demand for engineering technicians will be in manufacturing. Companies need improved machinery, up-to-date processes, and lean manufacturing methods to compete on a global basis. Quality skills apply during all phases of the product cycle – from concept to production to distribution and service.

ISO/TS/OHSA certifications are becoming a common prerequisite for doing business, worldwide. This course of study imparts the skills needed to comply with many certification system requirements. Skills learned in this course form a solid foundation on which to build if your goal is to become a Quality Assurance Manager, Quality Engineer, or Quality Auditor.

#### Program Learning Outcomes

Students earning a certificate from this program should demonstrate:

1. Basic knowledge leading to quality from management, practitioner and customer perspectives.
2. Concentration on quality problem solving and process control tools.
3. Basic understanding of probability and philosophies espoused by Deming, Crosby, and Juran.
4. Basic knowledge of quality, measurement system analysis and control charting principles.
5. Proper selection and use of measuring tools for the feature based upon the print specification.
6. Proficiency for dealing with tolerance stacks, another layer of G D & T.
7. Basic understanding of more complex quality improvement methods by studying at least three of the following topics: Advanced SPC, Six Sigma Start-Up, DOE: Screening Experiments, Measurement Systems Analysis or Problem Solving.

<u>First Semester</u>		<u>Credits</u>
+	MET110	Print Reading & Sketching..... 3
	MTH109	College Algebra..... 3
+	QCT100	Quality Concepts..... <u>3</u>
		9

<u>Second Semester</u>		<u>Credits</u>
+	CAD100	CAD for Machining ..... 3
+	IND110*	Industrial Computing I ..... 3
+	QCT131	Quality for Lean Manufacturing ..... <u>3</u>
		9

<u>Third Semester</u>		<u>Credits</u>
+	QCT141	Precision Measurement ..... 3
+	QCT243	Advanced Quality Improvement..... 3
		Communications Elective ..... <u>3</u>
		9

<u>Fourth Semester</u>		<u>Credits</u>
+	PET110	Principles of Plastics ..... 4
+	QCT142	Advanced Concepts of GD&T ..... 3
+	QCT250	Certified Quality Technician/ Certified Mechanical Inspector Review <u>3</u>
		10

**Total Program Hours** **37**

See page 40 for a list of Communications Electives.

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

\* Prior to taking IND110, students should have basic computer literacy in Windows and at least one Windows application.

+ Students must attain a minimum grade of "C" in all courses with a '+' to progress in the program and to graduate.



# INDUSTRIAL TECHNOLOGIES

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## Industrial Technologies Division

Northwest State Community College offers a variety of degree and certificate programs in the field of Industrial Technologies. Students enrolled in an Industrial Technologies program will benefit from the small classroom sizes as they learn to analyze problems and, more importantly, how to fix them.

Students will be prepared to enter the workforce immediately after graduation. They will also have the option of transferring into a four-year degree program at a partnering college or university.

Industrial Technologies Degree and certificate programs include:

### Applied Science

- Industrial Technology
- Mechatronics

### Certificate Programs

- HVACR (Climate Control)
- Industrial Electrical
- Industrial Maintenance
- Machining
- Millwright
- Programmable Controller (PLC)

### Course Sequence

The suggested sequence of courses is for full-time students. If you are a part-time student or have transferred courses in from another school, you should generally complete the courses listed under semester 1 before moving on to semester 2, 3, and then 4. Elective courses may be taken at any time. Please meet with your advisor if you need assistance to register. Your advisor can help you make any necessary changes to this recommended sequence.

### General Education

For Northwest State Core Requirements for all graduates, See page 31. Unless specified on the program page, Humanities and Social Behavioral Science electives should be selected from the Core Requirements list while Communication and Natural Science electives should be selected from the following elective lists.

#### Communications:

ENG111	Composition I (General Studies)
ENG113	Speech
ENG210	Technical Communications
ENG214	Discussion & Conference Methods

#### Natural Science:

See Page 31 for Natural Science Electives

#### Technical Electives:

Any AET, CAD, EET, IND, INT, MET, PET, PLC or QCT course

## HVAC-R (Climate Control) Certificate

### Industrial Technologies Division

Heating, Ventilating, Air Conditioning, and Refrigeration, as a technical discipline, has made its transition to the “high-tech” field. Modern environmental control equipment use advanced controls involving pneumatic, electro-mechanical and direct digital control technologies. Today, common HVAC-R applications include the use of computers and computer network interfaces to facilitate building/space climate control and monitoring. Presently, manpower shortages exist for qualified personnel (see <http://www.mepatwork.com> for additional information). Men and women wanting to enter this field must understand these advanced technologies, their controls and communications networks if they are to be successful in this changing field.

### Career Outlook

A wide variety of employment possibilities exist for those individuals who have training in the Climate Control field. HVAC-R Installers and Service Technicians are always needed to support companies involved in product sales and service. These skilled tradespersons work in residential, commercial and industrial settings keeping related equipment operational throughout the climate seasons. refrigeration journeymen work in commercial and industrial settings providing support for the food industry. Air balance specialists work with environmental engineers to test and adjust newly installed and existing HVAC-R systems. Systems integrators unify various sub-systems involving the HVAC-R and fire control-life safety technologies under one common control.

### Program Learning Outcomes

Students earning a certificate from this program should demonstrate:

1. Comprehend relevant electrical symbols and abbreviations within projects.
2. Apply basic knowledge of operating systems, networking, and computer hardware in projects.
3. Illustrate proficiency in design concepts, orthographic projection, dimensioning practices, and blueprint reading through hands on projects and assignments.
4. Apply physics of fluids, components, troubleshooting and design applications for hydraulic and pneumatic systems.

**See page 56 for a list of Communications Electives.**

<u>First Semester / 1st 8 weeks</u>		<u>Credits</u>
+	IND120 Industrial Electricity I .....	3
	IND105 Industrial Safety .....	2
+	AET110 Energy Audit.....	<u>3</u>
		8

<u>First Semester / 2nd 8 weeks</u>		<u>Credits</u>
+	IND120 HVACR I.....	3
+	INT220 Electrical Prints and Troubleshooting...	3
+	IND131 Industrial Pipefitting.....	<u>3</u>
		9

<u>Second Semester / 1st 8 weeks</u>		<u>Credits</u>
+	IND223 Motors & Motor Controls .....	3
+	IND121 Industrial Electricity II .....	3
	Communications Elective .....	<u>3</u>
		9

<u>Second Semester / 2nd 8 weeks</u>		<u>Credits</u>
+	IND220 HVACR II.....	3
+	INT221 HVACR III .....	<u>3</u>
		6

**Total Program Hours** **32**

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

Must be proficient in MTH080.

- + Students must attain a minimum grade of “C” in all courses with a ‘+’ to progress in the program and to graduate.



## Industrial Electrical Certificate

### Industrial Technologies Division

This program will focus on learning experiences that will prepare students with the technical skills to work in the industrial electrical field in positions such as Industrial Electrician, Electrical Technician, Industrial Controls Technician or Maintenance Technician. All of these courses apply toward the comparable associate degree. Students in the program will be trained not only in traditional Electrician skills, but also how to operate and troubleshoot state-of-the-art programmable controller systems, solid state motor drives, instrument systems and industrial computer systems used by maintenance personnel in manufacturing and process plants.

Students will receive hands-on training on AC/DC motors, transformers, test equipment, basic hydraulic systems, and industrial wiring practices according to the National Electrical Code. Most of the technical classes will have 50 percent of the learning experience in the classroom, and the other 50 percent in the laboratory with hands-on training. This program focuses on basic fundamentals so that graduates can also adapt to the continuous changes in technology.

### Career Outlook

As manufacturers invest in new technology-driven equipment, the need for skilled technicians will remain in high demand.

### Program Learning Outcomes

Students earning a certificate from this program should demonstrate:

1. Illustrate knowledge of electrical symbols and abbreviations by applying toward assignments.
2. Illustrate proficiency in basic electrical theory, motor starters, solenoid valves, various control devices, motor circuits, and variable frequency drivers by applying knowledge and skills in individual and group projects.
3. Proficiency in the systematic elimination of the various parts of a system to locate a malfunctioning part safely but properly.
4. Comprehend PLC control systems, analog instrumentation, and Servo Robotics systems through knowledge and hands on based assessments.
5. Apply the physics of fluids, components, troubleshooting and design applications for hydraulic and pneumatic systems using instrumentation and controls systems through individual and group assignments.

See page 56 for a list of Communications Electives.

<u>First Semester</u>		<u>Credits</u>
+	IND120 Industrial Electricity I .....	3
	IND110* Industrial Computing I .....	3
	IND105 Industrial Safety .....	<u>2</u>
		8

<u>Second Semester</u>		<u>Credits</u>
+	IND121 Industrial Electricity II .....	3
+	IND134 Industrial Fluid Power .....	3
+	IND122 Industrial Wiring (NEC) .....	<u>3</u>
		9

<u>Third Semester</u>		<u>Credits</u>
+	IND220 Electrical Prints & Troubleshooting	3
+	IND223 Motors and Motor Controls .....	3
+	PLC200 Programmable Controller I .....	<u>3</u>
		9

<u>Fourth Semester</u>		<u>Credits</u>
+	IND221 Instrumentation & Controls I .....	3
+	PLC230 Servo/Robotics Systems .....	3
	Communications Elective .....	<u>3</u>
		9

**Total Program Hours** **35**

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

\* Prior to taking IND110, students should have basic computer literacy in Windows and at least one Windows application.

+ Students must attain a minimum grade of "C" in all courses with a '+' to progress in the program and to graduate.

# Industrial Maintenance Certificate

## Industrial Technologies Division

The industrial maintenance technician not only troubleshoots and repairs advanced industrial equipment, but is responsible for the layout and installation. This individual will be versed in electrical, hydraulics, pneumatics, pipefitting, welding, machine repair and installation as well as motor control systems and PLC control systems.

Coursework (100 level or higher) completed in this certificate directly applies toward the associate degree in maintenance technician/mechatronics.

### Career Outlook

Many manufacturing companies across the country no longer employ segregated trades (electrician, millwright, machinist, etc.) Instead, they are moving to a multi-craft classification that will perform electrical, mechanics, machining, welding, etc. Therefore, positions for general maintenance and industrial maintenance are currently in great demand.

### Program Learning Outcomes

Students earning a certificate from this program should demonstrate:

1. Distinguish electrical symbols and abbreviations and apply uses in assignments.
2. Illustrate proficiency in basic electrical theory, motor starters, solenoid valves, various control devices, motor circuits, and variable frequency drivers through practical lab exercises.
3. Illustrate proficiency in the systematic elimination of the various parts of a system to locate a malfunctioning part safely but promptly, through lab exercises.
4. Apply basic knowledge of PLC control systems through lectures, readings, exercises.
5. Apply mechanical knowledge of hydraulic and pneumatic systems through individual or group projects and assignments.

See page 56 for a list of Communications Electives.

<u>First Semester</u>		<u>Credits</u>
+	IND120	Industrial Electricity I ..... 3
	IND110*	Industrial Computing ..... 3
	IND105	Industrial Safety ..... <u>2</u>
		8

<u>Second Semester</u>		<u>Credits</u>
	IND103	Applied Geometry & Trigonometry 3
+	IND232	Machine Repair ..... 3
+	IND132	Benchwork ..... 2
+	PLC200	Programmable Controller I ..... <u>3</u>
		11

<u>Third Semester</u>		<u>Credits</u>
+	IND121	Industrial Electricity II ..... 3
+	IND134	Industrial Fluid Power ..... 3
		Communication Elective ..... <u>3</u>
		9

<u>Fourth Semester</u>		Credits
+	IND131	Industrial Pipefitting ..... 3
+	WLD110	Intro to Applied Welding Techniques 3
+	IND223	Motors & Motor Controls ..... <u>3</u>
		9

**Total Program Hours** **37**

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

\* Prior to taking IND110, students should have basic computer literacy in Windows and at least one Windows application.

+ Students must attain a minimum grade of "C" in all courses with a '+' to progress in the program and to graduate.

# Industrial Technologies

## Associate of Applied Science in Industrial Technology

### Industrial Technologies Division

This degree will focus on learning experiences that will prepare students with the technical skills to work within diverse technological fields within manufacturing and industrial environments.

Students will be able to obtain a generalist degree as well as have the opportunity to specialize in areas such as Industrial Electrical, Machining/CNC Programming, and Maintenance/Mechatronics. Courses consist of theory and practical, hands on applications. Students work collaboratively with each other and with the instructor to achieve competencies of each discipline, observing and practicing safety at all times. The technical classes will have 50 percent of the learning experiences in the classroom, and the remaining 50 percent in the laboratory environment applying hands-on learning. The courses comprising the generalist and specialist degree areas incorporate fundamentals critical in allowing students to adapt to the continuous changes in technology.

### Career Outlook

As manufacturers invest in new, technology-driven equipment, the demand for skilled graduates in diverse technical areas will remain in high demand.

### Program Learning Outcomes

Students earning an Associate degree from this program should:

1. Identify common industrial symbols and abbreviations and demonstrate their use (Industrial Electrical, PLC, HVACR)
2. Interpret and develop basic prints including dimensioning, calculations, and sketching, orthographic, isometric, sectional and auxiliary views (Machining, PLC)
3. Apply principles of electrical controls and fluid power applications to industrial situations (Maintenance Tech/ Mechatronics)
4. Basic knowledge of PLC control systems (Industrial Maintenance)
5. Knowledge of basic machining principles using lathes, mills, drills, band saw, and various hand tools (Millwright)
6. Basic knowledge of operating systems, networking, and computer hardware (PLC)
7. Knowledge of physics of fluids, components, troubleshooting and design applications for hydraulic and pneumatic systems (HVACR, Millwright, Industrial Maintenance, Machining CNC, Industrial Electrical)

See page 31 for a list of Humanities and Social/Behavioral Science Electives.

See page 56 for a list of Communications, Natural Science and Technical Electives.

<u>First Semester</u>		<u>Credits</u>
ENG111	Composition I.....	3
IND105	Industrial Safety .....	2
IND110*	Industrial Computing I.....	3
	Or	
CIS114	Microsoft Applications.....	3
MTH109	College Algebra.....	3
+	Technical Elective** .....	2
		14
<u>Second Semester</u>		<u>Credits</u>
ENG112	Composition II .....	3
IND103	Applied Geometry & Trig .....	3
+	Technical Electives**.....	2
		15
<u>Third Semester</u>		<u>Credits</u>
	Humanities Elective .....	3
	Natural Science Elective .....	3
+	Technical Electives**.....	2
		15
<u>Fourth Semester</u>		<u>Credits</u>
	Natural Science Elective (Including a Lab) .....	4
	Social/Behavioral Science Elective	3
+	Technical Electives** .....	10
		17
	<b>Total Program Hours</b>	<b>61</b>

\* Prior to taking IND110, students should have basic computer literacy in Windows and at least one Windows application.

\*\* See next page for listing of technical elective concentration areas.

+ Students must attain a minimum grade of “C” in all courses with a ‘+’ to progress in the program and to graduate.

# Industrial Technologies

## Associate of Applied Science in Industrial Technology

### Industrial Technologies Division

#### Technical Electives

AET110 Energy Audit  
 IND100 Precision Measurement  
 IND120 Industrial Electricity I  
 IND121 Industrial Electricity II  
 IND122 Industrial Wiring (NEC)  
 IND130 Rigging & Erecting  
 IND131 Industrial Pipefitting  
 IND132 Bench Work  
 IND134 Industrial Fluid Power I  
 IND140 Principles of Machining  
 IND141 Metallurgy & Heat Treatment  
 IND220 Electrical Prints & Troubleshooting  
 IND221 Instrumentation & Controls I  
 IND223 Motors & Motor Controls  
 IND232 Machine Repair  
 IND234 Industrial Fluid Power II  
 IND240 Machining Processes II  
 IND241 Tooling & Fixtures – Lubricants & Coolants  
 INT120 HVACR I  
 INT220 HVACR II  
 INT221 HVAC III Heating Systems  
 MET107 Engineering Graphics  
 MET222 Programming CNC  
 MET223 CAM I  
 QCT100 Quality Concepts  
 QCT141 Precision Measurement  
 PLC200 Programmable Controllers I  
 PLC210 Programmable Controllers II (AB)  
 PLC220 Programmable Controller III  
 PLC230 Servo/Robotic Systems  
 WLD100 Blue Print Reading and Welding Symbols  
 WLD110 Intro. to Applied Welding Techniques  
 WLD120 Gas Metal Arc Welding  
 WLD130 Flat & Horizontal Shield Metal Arc Welding  
 WLD140 Gas Tungsten Arc Welding  
 WLD150 Advanced Gas Metal Arc Welding  
 WLD210 Vertical and Overhead SMAW  
 WLD220 Advanced GTAW  
 WLD250 Pipe Welding  
 WLD260 Pre-Pipe Certification





# Machining Certificate

## Industrial Technologies Division

This program is designed to prepare the student for a career path as a skilled tradesman. Designed to meet the needs of a diverse vocational audience, the machining certificate is for students interested in career fields such as computer numerical control programming (CNC), or tool and die maker pattern maker.

### Career Outlook

The U.S. Department of Labor projects employment of machinists and tool and die makers to grow by 6 percent in the next decade. Employees with computer software application skills and the ability to perform multiple tasks have a greater chance for advancement.

### Program Learning Outcomes

Students earning a certificate from this program should demonstrate:

1. Demonstrate knowledge of basic print reading skills including dimensioning practices and calculations, sketching, including orthographic, isometric, sectional, and auxiliary views through individual and group projects, and written assessments.
2. Apply basic machining principles using lathes, mills, drills, band saw, and various hand tools through lectures, study, and assessments.
3. Illustrate proficiency in machining and fabricating projects with an emphasis on safety, fixturing, feeds and speeds, tooling, precision, and accuracy through assignments and projects.
4. Illustrate proficiency in welding with an emphasis on shielded metal arc (stick), oxy-acetylene, gas metal (MIG) and gas tungsten (TIG), through assignments and projects.

See page 56 for a list of Communications Electives.

<u>First Semester</u>		<u>Credits</u>
+	IND107	Print Reading & Sketching..... 3
	IND110*	Industrial Computing ..... 3
	IND105	Industrial Safety ..... 2
+	IND132	Benchwork ..... <u>2</u>
		10

<u>Second Semester</u>		<u>Credits</u>
	IND103	Applied Geometry & Trigonometry ..... 3
+	WLD110	Intro to Applied Welding Techniques.... 3
+	IND140	Principles of Machining ..... <u>3</u>
		9

<u>Third Semester</u>		<u>Credits</u>
+	IND100	Quality Concepts..... 3
+	IND240	Machining Processes II ..... 3
		Communications Elective ..... <u>3</u>
		9

<u>Fourth Semester</u>		<u>Credits</u>
+	IND241	Tooling & Fixtures ..... 3
+	IND141	Metallurgy & Heat Treatment ..... 2
+	MET222	Programming Computer Numerical Control..... <u>3</u>
		8

**Total Program Hours** **36**

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

- \* Prior to taking IND110, students should have basic computer literacy in Windows and at least one Windows application.
- + Students must attain a minimum grade of "C" in all courses with a '+' to progress in the program and to graduate.

# Maintenance Technician/Mechatronics

## Associate of Applied Science in Industrial Technology

### Industrial Technologies Division

This program prepares students for positions responsible for layout and installation of advanced industrial equipment. Graduates will also be able to troubleshoot and repair equipment to ensure the manufacturing lines keep running. Skills learned include electrical, hydraulics, pneumatics, pipefitting, welding, machine repair and installation as well as motor control systems, PLC control systems and instrumentation control networking.

### Career Outlook

Employers trying to stay competitive with an international marketplace are hard pressed to find a multi-crafted maintenance employee who can accomplish a multitude of vocational qualities (electrician, plumber, pipefitter, hydraulics and pneumatics specialists, HVACR, machine set-up, machine installer, welder, systems troubleshooter and control systems programming). This program will provide those employers with such a skilled professional.

### Program Learning Outcomes

Students earning an Associate degree from this program should:

1. Demonstrate a knowledge of fluid power and electrical symbols per ISO and JIC standards.
2. Read and interpret fluid power schematics.
3. Analyze electrical and PLC controls within fluid power circuits and systems.
4. Specify components, hoses, pipes and tubing, in the design, construction, and sizing of fluid power systems.
5. Apply principles of electrical controls and fluid power applications to industrial situations.

See page 31 for a list of Humanities and Social/Behavioral Science Electives.

See page 56 for a list of Communications, Natural Science and Technical Electives.

<u>First Semester</u>	<u>Credits</u>
ENG111 Composition I.....	3
IND105 Industrial Safety .....	2
IND110* Industrial Computing I.....	3
+ IND120 Industrial Electricity I .....	3
+ IND132 Benchwork .....	2
MTH109 College Algebra.....	<u>3</u>
	16

<u>Second Semester</u>	<u>Credits</u>
ENG112 Composition II .....	3
IND103 Applied Geometry & Trig .....	3
+ IND121 Industrial Electricity II .....	3
+ IND107 Blue Print Reading and Sketching ..	3
Humanities Electives.....	<u>3</u>
	15

<u>Third Semester</u>	<u>Credits</u>
+ IND134 Industrial Fluid Power I .....	3
+ IND223 Motors & Motor Controls .....	3
+ IND232 Machine Repair .....	3
+ PLC200 Programmable Controller I .....	3
Natural Science Elective .....	<u>3</u>
	15

<u>Fourth Semester</u>	<u>Credits</u>
+ IND221 Instrumentation & Controls I.....	3
+ IND234 Industrial Fluid Power II.....	3
+ PLC230 Servo/Robotic Systems .....	3
Natural Science Elective	
(Including a lab).....	4
Social/Behavioral Science Elective	<u>3</u>
	16

**Total Program Hours** **62**

\* Prior to taking IND110, students should have basic computer literacy in Windows and at least one Windows application.

+ Students must attain a minimum grade of “C” in all courses with a ‘+’ to progress in the program and to graduate.

## Millwright Certificate

### Industrial Technologies Division

The millwright is trained to install, dismantle or move machinery and heavy equipment according to engineered plans, blueprints or other drawings. The skill level of the millwright ranges from rigger, welder and machine repairman to fabricator, pipefitter and machine reconitioner.

#### Career Outlook

Openings for millwrights will be found in areas where manufacturing is high. Related vocations are also a possibility with pipefitters and riggers, machine repairmen, structural iron and steel workers being in high demand.

#### Program Learning Outcomes

Students earning a certificate from this program should demonstrate:

1. Illustrate knowledge of basic print reading skills including dimensioning practices and calculations, sketching including orthographic, isometric, sectional and auxiliary views through drawing projects and other practical and knowledge based assessment methods.
2. Demonstrate knowledge of basic machining principles using lathes, mills, drills, band saw, and various hand tools through practical exercises and knowledge assessment methods.
3. Demonstrate proficiency in machining and fabricating projects with an emphasis on safety, fixturing, feeds and speeds, tooling, precision, and accuracy through individual and group hands on projects.
4. Demonstrate proficiency in welding with an emphasis on shielded metal arc (stick), oxy-acetylene, gas metal (MIG) and gas tungsten (TIG) through hands on projects and assignments.
5. Illustrate knowledge of the physics of fluids, components, troubleshooting and design by applying principles in hands on projects and assignments.
6. Identify appropriate rigging tools necessary for various needs.
7. Employ mobile crane safety, inspection, hand signals and proper crane usage methods.

See page 56 for a list of Communications Electives.

<u>First Semester / 1st 8 weeks</u>		<u>Credits</u>
+	IND132 Benchwork .....	2
	IND105 Industrial Safety .....	2
+	IND107 Print reading & Sketching.....	<u>3</u>
		7

<u>First Semester / 2nd 8 weeks</u>		<u>Credits</u>
	Communications Elective .....	3
+	IND140 Principles of Machining .....	3
+	WLD110 Intro to Applied Welding Techniques....	<u>3</u>
		9

<u>Second Semester / 1st 8 weeks</u>		<u>Credits</u>
+	IND232 Machine Repair .....	3
+	IND134 Industrial Fluid Power I .....	3
+	IND130 Rigging & Erecting .....	<u>3</u>
		9

<u>Second Semester / 2nd 8 weeks</u>		<u>Credits</u>
+	IND131 Industrial Fluid Power I .....	3
	PHY101 Principles of Physical Science .....	3
+	IND100 Precision Measurement .....	<u>3</u>
		9

**Total Program Hours** **34**

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

- + Students must attain a minimum grade of "C" in all courses with a '+' to progress in the program and to graduate.

# Programmable Controller (PLC) Certificate

## Industrial Technologies Division

A Programmable Logic Controller (PLC) Certificate prepares the individual to install, maintain and troubleshoot industrial grade PLC systems. Technicians will work closely with maintenance supervisors and electrical engineers. Extensive self study (reading, research and practice) may be required on the job to improve and maintain technical proficiency of new and improved electrical control devices.

Typically, technicians work on assignments and tasks with minimum supervision and guidance, often requiring the technician to interface and pass down information between cross function personnel of incoming and outgoing shifts. It is expected by employers that technicians demonstrate excellent verbal, written and interpersonal communication skills.

### Career Outlook

Graduates of this program may find employment as entry-level control technicians, electrical technicians or as service technicians working under the direction of the maintenance or engineering department. Some of the typical duties of these technicians will include: troubleshooting and programming of PLC control systems; variable frequency drives; 480 volt 3 phase motor wiring; reading blueprints and electrical schematics; installing conduit and wiring; testing wiring connections; working closely with electrical engineers and / or general contractors.

### Program Learning Outcomes

Students earning a certificate from this program should demonstrate:

1. Illustrate knowledge of electrical symbols and abbreviations through knowledge and hands on assignments.
2. Demonstrate basic knowledge of operating systems, networking, and computer hardware through various assessment instruments.
3. Demonstrate proficiency in design concepts, orthographic projection, dimensioning practices, and blueprint reading through knowledge and hands on based assessments.
4. Illustrate basic ladder logic programming, addressing, editing, and troubleshooting by applying concepts to PLC design and demonstration projects.

See page 56 for a list of Communications Electives.

<u>First Semester / 1st 8 weeks</u>		<u>Credits</u>
+	IND120 Industrial Electricity I .....	3
	IND110* Industrial Computing I .....	3
	IND105 Industrial Safety .....	<u>2</u>
		8

<u>First Semester / 2nd 8 weeks</u>		<u>Credits</u>
+	IND121 Industrial Electricity II .....	3
+	PLC200 Programmable Controller I .....	3
	Communications Elective .....	<u>3</u>
		9

<u>Second Semester / 1st 8 weeks</u>		<u>Credits</u>
+	IND223 Motors & Motor Controls .....	3
+	IND221 Instrumentation & Controls.....	<u>3</u>
		6

<u>Second Semester / 2nd 8 weeks</u>		<u>Credits</u>
+	PLC210 Programmable Controller II .....	3
+	PLC220 Programmable Controller III.....	3
+	PLC230 SErvo/Robotics Systems .....	<u>3</u>
		9

**Total Program Hours 32**

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

\* Prior to taking IND110, students should have basic computer literacy in Windows and at least one Windows application.

+ Students must attain a minimum grade of "C" in all courses with a '+' to progress in the program and to graduate.




*Education breeds confidence.*  
**Confidence breeds hope.**  
*Hope breeds peace.*

-Confucius

A black and white photograph of a young woman with long, wavy hair, wearing a dark top, sitting and reading a book. The image is partially obscured by a large green triangle on the right side of the page.

# ALLIED HEALTH, BUSINESS, & PUBLIC SERVICES

A black and white photograph of a woman in a Ranger uniform, smiling. She is wearing a dark uniform with a badge and a radio. The background shows a control room with multiple monitors displaying various images. The image is partially obscured by a large green triangle on the right side of the page.

Contact the Dean: Janet Koeplinger  
419.267.1258  
[jkoeplinger@northweststate.edu](mailto:jkoeplinger@northweststate.edu)

## Allied Health, Business, and Public Services

The division of Allied Health, Business, and Public Services offers a variety of majors in the fields of criminal justice, early childhood education, human services, and health care. Many of the graduates from these programs are ready to join the workforce after they earn their diploma and are qualified for a State or national credential in their profession. However, there are also opportunities for these graduates to transfer on and earn their bachelor's degree from a four-year college or university.

Degree and Certificate programs offered through the Allied Health, Business, and Public Services Division include:

### Associate of Applied Business

Accounting  
Business Management  
Paralegal

### Associate of Applied Business in Business Management

Banking and Finance  
Entrepreneurship  
Human Resource Management  
Logistics and Supply Chain Management  
Marketing

### Associate of Applied Business in Office Administrative Services

Medical Support  
Office Administration  
Office Management

### Associate of Applied Science

Human Services  
Medical Assisting  
Paraprofessional Education

### Associate of Science

Pre-Business Administration

### Associate of Applied Science: Early Childhood Development

Pre-Kindergarten

### Associate of Applied Science: Criminal Justice

Criminal Justice  
Law Enforcement – Academy Option

### Certificate Programs

Accounting Assistant  
Emergency Medical Services  
Law Enforcement Academy  
Logistics and Supply Chain Management  
Office Assistant  
Phlebotomy  
Real Estate

### Northwest Ohio Allied Health Education Consortium

Health Information Technician  
Medical Laboratory Technician  
Occupational Therapy Assistant  
Radiographic Imaging  
Respiratory Care Practitioner

### Course Sequence

This is a suggested sequence of course(s) for full-time students. If you are a part-time student or have transferred course(s) in from another school, you should generally complete the courses listed under semester 1 before moving on to semester 2, 3, and then 4. Elective courses may be taken at any time. Please meet with your advisor if you need assistance to register. Your advisor can help you make any necessary changes to this recommended sequence.

### Prerequisites

All students are required to demonstrate proficiencies in reading, writing, and mathematics based on scores on the assessment test or take the recommended classes. If you have not taken these tests, stop by the Admissions Office in C106 or call (419) 267-1320 for information or referral to testing.

Some courses listed in this program have specific prerequisites. See course descriptions for these prerequisites in the Course Description section of this publication. Education majors are required to have a completed documentation file.

### General Education

For Northwest State core Requirements for all graduates, See page 31. Unless specified on the program page, Humanities and Natural Science electives should be selected from the Core Requirements list while Math electives should be selected from the following elective lists.

#### Math Electives

MTH109	College Algebra
MTH112	Trigonometry
MTH213	Calculus I
MTH214	Calculus II
STA120	Introduction to Statistics
STA222	Business Statistics

### Disclosure for Allied Health & Public Services Students

Students pursuing a degree in one of the Allied Health or Public Services professions leading to application for professional licensure or certification, and/or who will be participating in clinical placements, internships, or practica through their program, should be aware that their host facility may require a criminal background check, finger printing, or drug screening. Although the College will make reasonable efforts to place admitted students in field experiences and internships, it will be up to the host facility to determine whether a student will be allowed to work at the facility. Students shall further be aware that a criminal record may jeopardize licensure by the State certification body. Expunged convictions may or may not jeopardize licensure and internship placement. Students should consult the licensing certification body corresponding to their intended occupation for more details (see web sites below). Successful completion of a program of study at the College does not guarantee licensure, certification, or employment in the relevant occupation. Standards may change during a student's program of study.

**Note:** The inability to complete the internship or practicum requirements of a program will also mean the inability to complete the requirements for the degree.

### College Credit Plus Students

Many of our internship and practicum facilities require that students be at least 18 years of age in order to participate in activities associated with the professional role.

### Helpful Web Sites of Licensing and Certifying Boards

- American Association of Medical Assistants  
[www.aama-ntl.org/](http://www.aama-ntl.org/)
- State of Ohio Counselor, Social Worker, and Marriage & Family Therapist Board <http://www.cswmft.ohio.gov>
- Ohio Department of Mental Retardation and Developmental Disabilities  
<http://dodd.ohio.gov>
- Ohio Department of Alcohol & Drug Addiction Services  
<http://mha.ohio.gov>
- Ohio Department of Education [www.ode.state.oh.us/](http://www.ode.state.oh.us/)
- Ohio Department of Corrections [www.drc.ohio.gov/](http://www.drc.ohio.gov/)
- Ohio Peace Officer Training Commission  
[www.ohioattorneygeneral.gov/opotc](http://www.ohioattorneygeneral.gov/opotc)

# Accounting Associate of Applied Business

## Allied Health, Business, and Public Services Division

Students in accounting develop a high degree of technical skills in accounting systems and business organization. The accounting programs provide business-related experience on modern equipment. Courses utilize personal computers and electronic printing calculators. The Accounting degree program is designed to help students attain technical accounting skills and a broad knowledge of business fundamentals. Accounting systems are studied as they are applied every day in business and industrial organizations.

Graduates are qualified as senior clerks or junior accountants, positions as a cost accountant, accounting supervisor, payroll supervisor or office manager.

### Career Outlook

As the economy grows, the number of businesses will increase as well as the need for accountants. The accounting profession generally has a low rate of turnover; therefore, openings will be primarily created through retirements and promotions.

### Program Learning Outcomes

Students will be able to:

1. Create financial statements, reports, and schedules.
2. Demonstrate managerial decision making based on their interpretation of financial statements.
3. Integrate accounting knowledge into software programs.
4. Demonstrate accurate skills in recording and reporting of accounts.
5. Demonstrate mastery of a foundation of business understanding.

See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.

#### Accounting Electives:

- ACC240 Business Income Tax Accounting
- ACC291 Accounting Internship

#### Computer Accounting Electives:

- ACC260 Accounting on Computers

#### Mathematics Electives:

- MTH105 Quantitative Reasoning
- MTH109 College Algebra

<u>First Semester</u>	<u>Credits</u>
+ ACC111 Financial Accounting .....	3
+ ACC120 Payroll Accounting.....	3
ENG111 Composition I.....	3
Mathematics Elective .....	3
Social Behavioral Science Elective	<u>3</u>
	15

<u>Second Semester</u>	<u>Credits</u>
+ ACC112 Managerial Accounting .....	3
+ ACC140 Individual Income Tax Accounting	3
CIS114 Microsoft Applications.....	3
ENG112 Composition II .....	3
Humanities Elective .....	<u>3</u>
	15

<u>Third Semester</u>	<u>Credits</u>
+ ACC211 Intermediate Accounting I.....	3
+ ACC221 Cost Accounting I.....	3
+ Computer Accounting Elective .....	3
+ Accounting Elective .....	3
Business Elective .....	<u>3</u>
	15

<u>Fourth Semester</u>	<u>Credits</u>
+ ACC212 Intermediate Accounting II .....	3
+ ACC222 Cost Accounting II .....	3
+ ACC230 Auditing.....	3
BUS221 Business Law .....	3
Natural Science Elective .....	<u>3</u>
	15

**Total Program Credit Hours      60**

#### Business Electives:

- BUS160 International/Global Business
- BUS211 Business Communications
- BUS250 Labor Relations
- BUS260 International Trade
- CIS113 Microsoft Excel
- ECO211 Macroeconomics
- ECO212 Microeconomics
- MGT110 Management
- MGT210 Human Resource Management
- MGT280 Business Climate Analysis
- MKT230 Salesmanship

*All of the following are 1 credit hour courses:*

- CIS118 Access
- CIS119 PowerPoint
- CIS122 Intermediate Excel

+ Students must attain a 2.00 grade point average in these technical courses to graduate.



## Accounting Assistant Certificate

### Allied Health, Business, and Public Services Division

Accounting is an excellent foundation for any type of business or office position. Most managerial positions require at least some understanding of accounting functions. The one-year certificate program provides students with accounting skills in balance sheets, income statements, payroll accounting and personal tax accounting.

Those who complete the program are employable within one academic year as a payroll clerk, accounts payable clerk, Accounts receivable clerk or general accounting bookkeeper in business or industrial organizations. The student can earn the associate degree by completing one year of full-time study beyond the Accounting Assistant Certificate.

#### Career Outlook

As the economy grows, the number of businesses will increase as well as the need for accountants. The accounting profession generally has a low rate of turnover; therefore, openings will be primarily created through retirements and promotions.

#### Program Learning Outcomes

Students will be able to:

1. Create financial statements, reports, and schedules.
2. Demonstrate managerial decision making based on their interpretation of financial statements.
3. Integrate accounting knowledge into software programs.
4. Demonstrate accurate skills in recording and reporting of accounts.
5. Demonstrate mastery of a foundation of business understanding.

#### Computer Accounting Electives:

ACC260 Accounting on Computers

#### Mathematics Electives:

MTH105 Quantitative Reasoning  
MTH109 College Algebra

#### First Semester

		<u>Credits</u>
+	ACC111	Financial Accounting ..... 3
+	ACC120	Payroll Accounting..... 3
	ENG111	Composition I..... 3
		Business Elective ..... 3
		Mathematics Elective ..... <u>3</u>
		15

#### Second Semester

		<u>Credits</u>
+	ACC112	Managerial Accounting ..... 3
+	ACC140	Individual Income Tax Accounting ..... 3
	ENG112	Composition II ..... 3
	CIS114	Microsoft Applications..... 3
+		Computer Accounting Elective ..... <u>3</u>
		15

**Total Program Credit Hours**      **30**

#### Business Electives:

BUS160 International/Global Business  
BUS211 Business Communications  
BUS221 Business Law  
BUS250 Labor Relations  
BUS260 International Trade  
CIS113 Microsoft Excel  
ECO211 Macroeconomics  
ECO212 Microeconomics  
MGT110 Management  
MGT210 Human Resource Management  
MGT280 Business Climate Analysis  
MKT230 Salesmanship

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

- + Students must attain a 2.00 grade point average in these technical courses to graduate.

# Banking & Finance

## Associate of Applied Business in Business Management

### Allied Health, Business, and Public Services Division

The banking and finance degree provides students with a broad and practical background in bank-related management skills and the application of those skills to the banking field. Topics with which a bank manager should be familiar (commercial and real estate lending, investments, regulatory structure, and financial statements) receive major emphasis. Several course projects require extensive research into these bank-related fields. The graduate is also familiar with the computer field and with some accounting and spreadsheet applications.

The graduate is qualified for a position as a manager or assistant manager of a small bank, savings and loan or credit union. In a larger institution, the graduate could specialize in either the loan origination or consumer/commercial credit department.

Real estate classes are offered in a seminar format as full-day sessions on weekends.

### Career Outlook

Most opportunities will be found in financial institutions which include banks, credit unions, loan companies, insurance firms, stock brokerage firms, investment banking firms and commercial and residential real estate businesses. As the economy grows, loan officers/counselors will process more applications for commercial, consumer, and mortgage loans. Financial Manager Positions are expected to grow about as fast as the average, especially in the securities industry because more people are investing.

### Program Learning Outcomes

Students will be able to:

1. Analyze comprehension of the major styles of management.
2. Exhibit work skills of attendance, work ethic, and self-motivation.
3. Apply appropriate comprehension of business ethics.
4. Exhibit personal skills of business etiquette, proper business attire, and social skills.
5. Evaluate effective comprehension of banking practices.
6. Demonstrate appropriate understanding of the foundation of consumer banking.
7. Demonstrate appropriate understanding of the foundation of commercial banking.

<u>First Semester</u>	<u>Credits</u>
+ ACC111 Financial Accounting .....	3
BUS101 Introduction to Business.....	3
CIS114 Microsoft Applications.....	3
ENG111 Composition I.....	3
Mathematics Elective.....	<u>3</u>
	15

<u>Second Semester</u>	<u>Credits</u>
+ ACC112 Managerial Accounting .....	3
+ BAN110 Bank Management .....	3
ECO212 Microeconomics.....	3
ENG112 Composition II .....	3
+ MKT110 Marketing.....	<u>3</u>
	15

<u>Third Semester</u>	<u>Credits</u>
+ BAN210 Credit Management.....	3
+ BUS221 Business Law .....	3
CIS113 Microsoft Excel.....	3
+ PAR205 Real Estate Transactions .....	3
Social/Behavioral Science Elective.....	<u>3</u>
	15

<u>Fourth Semester</u>	<u>Credits</u>
+ BAN220 Investment Management .....	3
+ BUS211 Business Communications .....	3
+ MGT280 Business Climate Analysis .....	3
Humanities Elective .....	3
Natural Science Elective .....	<u>3</u>
	15

**Total Program Credit Hours      60**

### Mathematics Electives:

- MTH105 Quantitative Reasoning
- MTH109 College Algebra

**See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.**

+ Students must attain a 2.00 grade point average in these technical courses to graduate.

## Business Management

### Associate of Applied Business

#### Allied Health, Business, and Public Services Division

Today's successful managers need a variety of skills, including communication and analytical and decision-making skills. The demand for business management personnel has risen with the growing number of small businesses in northwest Ohio. At the same time, large businesses continuously require mid-management and supervisory personnel. The graduate of the business management program is skilled in supervision, labor relations, accounting, marketing, salesmanship, and decision-making. The graduate is qualified for a position as a general manager or assistant manager of a small business or a personnel specialist, foreman or supervisor of a manufacturer, commercial business, or other organization. The business management program offers a weekend college option along with the typical schedule of daytime or evening classes.

#### Career Outlook

Employment opportunities are varied and will depend on each individual goal. Entry-level management positions are found in the manufacturing, retail, food service, banking and governmental services. Individuals interested in sales positions will find many opportunities. Both nationally and in the state of Ohio, business services sales positions, particularly technical sales, are expected to grow much faster than the average. Companies which are new and existing will be hiring managers. Service industries, such as food service, will experience a faster than average growth.

#### Program Learning Outcomes

Students will be able to:

1. Demonstrate comprehension of the major styles of management.
2. Exhibit work skills of attendance, work ethic, and self-motivation.
3. Demonstrate comprehension of business ethics.
4. Evaluate the history of management and the importance of planning, organizing, leading and controlling.
5. Apply the various management principles and concepts with the various organizational designs and how they fit within their advantages and disadvantages.
6. Develop an understanding of the communication and interpersonal skills needed for managing organizations and how to manage change, technology, and innovation.
7. Create an understanding of individual and group behavior of work teams and apply the various motivations theories to work situations.

<u>First Semester</u>		<u>Credits</u>
+ ACC111	Financial Accounting.....	3
BUS101	Introduction to Business.....	3
CIS114	Microsoft Applications.....	3
ECO212	Microeconomics.....	3
ENG111	Composition I.....	3
		<u>15</u>

<u>Second Semester</u>		<u>Credits</u>
+ ACC112	Managerial Accounting.....	3
ENG112	Composition II.....	3
+ MGT110	Management.....	3
+ MKT110	Marketing.....	3
	Mathematics Elective.....	3
	Social Behavioral Science Elective...	3
		<u>18</u>

<u>Third Semester</u>		<u>Credits</u>
+ BUS221	Business Law.....	3
+ CIS113	Microsoft Excel.....	3
+ MGT210	Human Resource Management.....	3
+ MKT230	Salesmanship.....	3
	Humanities Elective.....	3
		<u>15</u>

<u>Fourth Semester</u>		<u>Credits</u>
ACC221	Cost Accounting I.....	3
BUS211	Business Communications.....	3
+ BUS250	Labor Relations.....	3
+ MGT280	Business Climate Analysis.....	3
	Natural Science Elective.....	3
		<u>15</u>

**Total Program Credit Hours** **63**

#### Mathematics Electives:

MTH105	Quantitative Reasoning
MTH109	College Algebra

See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.

- + Students must attain a 2.00 grade point average in these technical courses to graduate.

# Criminal Justice Associate of Applied Science

## Allied Health, Business, and Public Services Division

This degree is designed to prepare students for careers in the criminal justice field as well as prepare them for future academics and training. Students will become familiar with the components and processes of the criminal justice system as well as studying the areas of law, corrections, investigations and procedures at a more comprehensive level. Students will also examine social and criminal justice issues through multiple perspectives.

Students who have prior felony convictions may be excluded from numerous criminal justice career opportunities. Students, who have prior misdemeanor charges or excessive civil infractions, including traffic citations, may be denied an opportunity for practicum experience or employment within the criminal justice field. In addition, students should note that the people they associate with may inhibit the College from finding an adequate internship. Students who do not complete the practicum will not be able to complete the requirements for the degree. Tattoos are not considered part of professional appearance and must be covered whenever you are in the practicum setting or professional role. All students entering the program must adhere to the division's Substance Abuse Policy.

### Program Learning Outcomes

At the completion of the program students will be able to:

1. Have a general understanding and appreciation of the role of the CJ system at local, state, and federal levels.
2. Demonstrate knowledge of appropriate codes of professional ethics and the capability to critically and reflectively engage ethical issues in CJ, particularly questions of social responsibility and professional decision-making.
3. Demonstrate knowledge of the theories, principles and practice of criminal justice, including constitutional principles, judicial and correctional processes, legal institutions, and methods of law enforcement.
4. Have a sound basic education in CJ for graduates who choose to pursue a bachelor's degree.

#### Computer Elective:

Any 3 credit hour or 3 one credit hour computer course(s).

#### Math Elective:

See page 68 for list of courses. STA120 Introduction to Statistics is recommended.

#### Technical Electives:

- |         |                                     |
|---------|-------------------------------------|
| CJT136  | Juvenile Delinquency                |
| CJT242  | Probation and Parole                |
| CJT252  | Seminar in Criminal Justice         |
| CJT132  | Criminal Justice Administration     |
| CJT140  | Constitutional Law                  |
| CJT 220 | Law Enforcement in American Society |

<u>First Semester</u>	<u>Credits</u>
ENG111	Composition I ..... 3
+ CJT130	Criminal Justice Principles ..... 3
PSY110	General Psychology ..... 3
	Computer Elective ..... 3
	Natural Science Elective ..... <u>3-4</u>
	15-16

<u>Second Semester</u>	<u>Credits</u>
+ CJT134	Criminal Law..... 3
+ CJT230	Corrections ..... 3
ENG112	Composition II ..... 3
PSY210	Abnormal Psychology ..... 3
+ Technical Elective #1	..... 3
	Human Service/ Social Science Elective ..... <u>3</u>
	18

<u>Third Semester</u>	<u>Credits</u>
+ CJT240	Evidence and Procedure ..... 3
+ Technical Elective #2	..... 3
SSC101	Sociology
or	
SSC102	Sociology-Sustainable World ..... 3
	Math Elective ..... 3
	Humanities Elective ..... <u>3</u>
	15

<u>Fourth Semester</u>	<u>Credits</u>
+ CJT244	Criminal Investigation ..... 4
+ CJT290*	Criminal Justice Practicum..... 4
+ Technical Elective #3	..... 3
+ Technical Elective #4	..... <u>3</u>
	14

**Total Program Hours 62-63**

#### Human Service/Social Science Electives:

For Criminal Justice Majors only

- |         |  |
|---------|--|
| HST101  | Principles of Human Services                                       |
|         | <i>(recommended for those seeking careers in Probation/Parole)</i> |
| HST105  | Cultural Competence with Diverse Populations                       |
| HST 208 | Interview Techniques   |
|         | <i>(recommended for those seeking careers in Probation/Parole)</i> |
| HST212  | Principles of Addictions   |
| HST214  | Human Service Case Management                                      |
|         | <i>(recommended for those seeking careers in Probation/Parole)</i> |
| HST240  | Social Problems  |
| HST242  | Marriage and Family  |
| PSY220  | Social Psychology  |
| PSY230  | Human Growth & Development   |
| PSY260  | Forensic Psychology  |
| SSC110  | General Anthropology   |
| SSC120  | American Government  |
| SSC130  | Comparative Government   |
| SSC210  | Cultural Diversity   |
| SSC220  | Interpersonal Violence   |

- \* Students currently employed full-time in a professional criminal justice setting may be allowed to substitute this course.
- + Students must attain a minimum grade of "C" in all courses with a "+" to progress in the program and to graduate.



## Emergency Medical Services Certificate

### Allied Health, Business, and Public Services Division

This program prepares students for entry level career positions as EMT's and Advanced EMT's. Emergency medical technicians administer lifesaving care at the scene of accidental injury or sudden illness. The program leads to eligibility for state and national certification. The EMT-Basic (EMS102 and EMS103) and EMT-Advanced(EMS202 and EMS203) classes are held at Four County Career Center, Archbold, Ohio and require additional fees.

Students are required to have a records check through the Bureau of Criminal Investigation and Identification (BCI) prior to entering clinical experiences in EMS 102.

<u>Course</u>		<u>Credits</u>
BIO101	Principles of Biology.....	4
EMS102	EMT Basic I.....	4
EMS103	EMT Basic II.....	3
ENG111	Composition I.....	3
NRS105	Math for Nurses.....	1
PSY110	General Psychology .....	3
EMS202	EMT Advanced I.....	5
EMS203	EMT Advanced II.....	3
PHI220	Ethics in Health Care .....	3
SSC210	Cultural Diversity.....	3
		<u>32</u>

### Program Learning Outcomes

Students completing the certificate program are able to:

1. Initiate advanced patient assessment and appropriate intravenous procedures and use specific pharmacological agents for pain, respiratory, cardiac, and diabetic emergencies.
2. Challenge the certification exam and meet the standards set forth by the Ohio Board of EMS.
3. Perform all duties of an EMT - Intermediate.
4. Apply principles of effective oral and written communication skills with patients, their families and other health care providers.

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

Note: To qualify for Ohio EMT Basic (EMT-B) Certification, students must successfully complete EMS 102 and EMS 103.

To qualify for Ohio Advanced EMT Certification, students must have Ohio EMT Basic Certification and successfully complete EMS 202 and EMS 203.

# Entrepreneurship

## Associate of Applied Business in Business Management

### Allied Health, Business, and Public Services Division

Graduates of this program acquire skills to create innovative ventures, recognize opportunities, evaluate alternative courses of action and formulate a plan to successfully achieve organizational objectives. Entrepreneurial skills can be utilized within existing organizations and government agencies to effect changes necessary to the success and survival of the organization.

Students are prepared with assessment skills in financial and legal analysis. The creation of the business plan forms the foundation for the entrepreneur and is a major focus of the entrepreneurship program.

### Career Outlook

Entrepreneurship plays a vital role in the growth of the U.S. economy. Employment both nationally and in the state of Ohio, is expected to grow as fast as the average. From 2010 to 2020 the top areas of job creation will be administrative service and operations managers (15 percent growth rate) and computer systems and related services (18 percent growth rate), indicating areas of opportunities for individuals with a drive, vision and skills to provide new and creative services.

### Program Learning Outcomes

Students will be able to:

1. Exhibit work skills of attendance, work ethic, professionalism and self-motivation.
2. Demonstrate comprehension of business ethics.
3. Assess entrepreneurial opportunities.
4. Apply the various functional areas of accounting, marketing, finance, management, human resources and economics
5. Develop a feasible business plan utilizing business tools that prepare students to communicate the output effectively.
6. Evaluate the global environment of business.
7. Analyze potential start-up models and resources available given current and future trends and opportunities.

<u>First Semester</u>		<u>Credits</u>
BUS101	Introduction to Business .....	3
CIS114	Microsoft Applications.....	3
ECO212	Microeconomics.....	3
ENG111	Composition I.....	3
	Mathematics Elective.....	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
+ BUS211	Business Communications .....	3
ENG112	Composition II .....	3
+ MKT110	Marketing .....	3
	Computer Elective .....	3
	Natural Science Elective .....	<u>3</u>
		15

<u>Third Semester</u>		<u>Credits</u>
+ ACC111	Financial Accounting .....	3
+ BUS221	Business Law .....	3
MGT110	Management.....	3
+ MGT121	Entrepreneurship I.....	3
	Social Behavioral Science Elective .....	<u>3</u>
		15

<u>Fourth Semester</u>		<u>Credits</u>
+ ACC112	Managerial Accounting .....	3
+ MGT221	Entrepreneurship II .....	3
+ MGT280	Business Climate Analysis.....	3
+ MGT210	Human Resource Management.....	3
+ MGT230	Retail Management .....	3
	Humanities Elective .....	<u>3</u>
		18

**Total Program Credit Hours      63**

#### Computer Electives:

CIS113	Microsoft Excel
CIS129	Web Page Development

#### Mathematics Electives:

MTH105	Quantitative Reasoning
MTH109	College Algebra

See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.

+ Students must attain a 2.00 grade point average in these technical courses to graduate.

# Human Resource Management

## Associate of Applied Business in Business Management

### Allied Health, Business, and Public Services Division

An environment that is very fast paced and dynamic requires human resource professionals that are able to help manage a productive and efficient workforce. The human resource professional is a critical member of the management team and has direct responsibility for managing employee relations, wage and salary administration, benefits, as well as contract negotiations. The Ohio demand for professionals in the time period 2006 to 2016 is expected to grow at 14% compared to a national average of 11 percent for Human Resource Managers.

### Program Learning Outcomes

Students will be able to:

1. Demonstrate comprehension of the major styles of management.
2. Exhibit work skills of attendance, work ethic, and self-motivation.
3. Demonstrate comprehension of business ethics.
4. Evaluate an understanding of all the HR disciplines and how they contribute to overall organizational effectiveness.
5. Apply acquired human resources knowledge to resolve business and organizational issues.
6. Demonstrate an understanding of the relationship between strategic HR initiatives and an organization's global competitiveness.
7. Analyze the relative merits of a variety of human resources interventions such as organizational development, succession and workforce planning, strategic staffing, diversity training, cultural change, and rewards and recognition redesign.
8. Describe how to design, develop, and implement effective HR policies and programs.

<u>First Semester</u>		<u>Credits</u>
BUS101	Introduction to Business.....	3
ECO212	Microeconomics.....	3
ENG111	Composition I.....	3
+ MGT110	Management.....	3
	Mathematics Elective.....	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
CIS114	Microsoft Applications.....	3
ECO211	Macroeconomics.....	3
ENG112	Composition II.....	3
+ MGT120	Supervision.....	3
+ MGT210	Human Resource Management.....	<u>3</u>
		15

<u>Third Semester</u>		<u>Credits</u>
+ ACC111	Financial Accounting.....	3
+ ACC120	Payroll Accounting.....	3
+ BUS221	Business Law.....	3
CIS113	Microsoft Excel.....	3
	Natural Science Elective.....	3
	Social Behavioral Science Elective.....	<u>3</u>
		18

<u>Fourth Semester</u>		<u>Credits</u>
+ ACC112	Managerial Accounting.....	3
+ BUS211	Business Communications.....	3
+ BUS223	Employment Law, Safety & Security.....	3
+ BUS250	Labor Relations.....	3
	Humanities Elective.....	<u>3</u>
		15

**Total Program Credit Hours** **63**

### Mathematics Electives:

MTH105	Quantitative Reasoning
MTH109	College Algebra

See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.

+ Students must attain a 2.00 grade point average in these technical courses to graduate.

# Human Services Associate of Applied Science

## Allied Health, Business, and Public Services Division

The human services degree provides a foundation in social work, behavioral and social sciences which will prepare students for entry level generalist practice. The program is designed to integrate coursework with practical, hands-on experience through Methods classes and a field practicum in community social service agencies. These courses are taught by professionally trained licensed faculty. The program meets standards for Social Work Assistant certification by the Ohio Counselor, Social Work, Marriage & Family Therapist Board and the Ohio Chemical Dependency Professionals Board, CDCA Phase I (and Phase II with additional course work).

Students can earn a separate certification approved by the Ohio Board of Developmental Disabilities by taking additional coursework. Students must meet all program requirements, have day time availability and meet agency age requirements for a field placement. BCI & FBI Criminal records checks are required. Students who have prior felony convictions and excessive civil infractions may be ineligible for practicum placement and employment.

### Career Outlook

Social service, mental health, chemical dependency and developmental disability agencies are aware of the skill level and competence of graduates from the Human Services program with their SWA, CSCA certification and ability to work with supervision. Projected job growth for human service workers is expected to grow by 22% nationally and 15% in Ohio between the period of 2012-2022 (Bureau of Labor Statistics, Ohio Bureau of Labor Market Information).

### Program Learning Outcomes

Graduates will be able to demonstrate the following skills/ behaviors.

1. Identify and explain how the competencies established for entry level generalist practice are incorporated into the role of a Human Service worker (including knowledge, skills, attitudes, values & ethics).
2. Apply theories from social work, behavioral and social sciences to increase understanding of human behavior.
3. Apply knowledge of diversity by demonstrating a set of congruent behaviors, attitudes and policies that enable a system, agency or professional to function effectively across cultural differences. (Diversity not limited to gender, ethnicity, religion, sexual orientation, disability, socioeconomic differences or vulnerable populations).
4. Demonstrate critical thinking, communication & documentation skills to analyze problems and apply social work ethical principles at the micro, mezzo, and macro levels of practice.
5. Demonstrate evidence based practice skills to engage, assess, plan, intervene, advocate, refer, and evaluate individuals, families, groups, organizations & communities.

<u>Fall Semester</u>		<u>Credits</u>
	ENG111	Composition I..... 3
+	HST101	Principles of Human Services ..... 3
+	HST112	Group Work in Human Services .... 3
	PSY110	General Psychology ..... <u>3</u>
		15

<u>Spring Semester</u>		<u>Credits</u>
	ENG112	Composition II ..... 3
+	HST105	Cultural Competence with Diverse Populations ..... 3
+	HST212	Principles of Addictions ..... 3
	PSY210	Abnormal Psychology ..... 3
	HST240	Social Problems..... 3
		Math Elective ..... <u>3</u>
		18

<u>Fall Semester</u>		<u>Credits</u>
+	HST208	Interviewing Techniques ..... 3
+	HST210	Human Service Methods ..... 6
+	HST222	Ethics in the Helping Professions ... 3
		Humanities Elective ..... <u>3</u>
		15

<u>Spring Semester</u>		<u>Credits</u>
+	HST214	Human Service Case Management . 3
	HST242	Marriage & Family..... 3
+	HST290	Practicum I ..... 6
		Natural Science Elective ..... <u>3-4</u>
		15-16

**Total Program Hours**      **63-64**

#### Math Elective:

STA120 Introductions to Statistics is strongly recommended.

#### Natural Science Elective: Elective:

BIO101 Principles of Biology is strongly recommended.

#### Humanities Elective:

See page 31 for list of courses.

#### Additional Classes Approved by Ohio Board of Developmental Disabilities:

HST218	Introduction to Developmental Disabilities
HST219	Principles of Self-Determination
HST220	Principles of Work
HST221	Principles of Habilitation Programming

ALL coursework must be completed with a minimum grade of “C” or higher for state licensure.

- + Students must attain a 2.00 grade point average in each of these courses to graduate



## Law Enforcement Academy Certificate

### Allied Health, Business, and Public Services Division

The Law Enforcement Academy Certificate will lead to State of Ohio Certification as a Peace Officer.

- The student must meet Academy qualifications to be accepted into the program
- Students must be 21 years of age by December 31 of the year they enroll in the Academy, and have a high school diploma or GED.
- Students will be required to submit the Ohio Peace Officer Training Commission Student Enrollment Certification Record, Statement of Understanding, Physical form, training waiver, and liability forms.
- A valid driver's license is required.
- Background and criminal record checks will be completed and an interview is required. Students who have a state or federal weapons disqualifier, any felony conviction, currently registered as a sex offender, arson offender, convicted of a drug offense, theft or fraud, negligent assault, or convicted of a misdemeanor offense of violence or any related offenses as a result of domestic violence will not be eligible for admission.
- To successfully complete the Academy, students must meet the attendance and physical conditioning requirement.
- Students are encouraged to prepare in advance for the academy by developing, or continuing, a physical fitness routine. While students are enrolled in the Academy at NSCC, they have free access to the fitness room located on campus. For more information on physical fitness requirements and some valuable resources on becoming and staying fit, please visit [northweststate.edu/academic-divisions/allied-health-public-services/law-enforcement-academy](http://northweststate.edu/academic-divisions/allied-health-public-services/law-enforcement-academy) and click on Physical Fitness Resources.

Policies regarding the Law Enforcement Academy are available in the Academy Student Handbook. All students entering the program must adhere to the regulations within the handbook as well as the Division's Substance Abuse Policy. Tattoos are not considered part of a professional appearance and must be covered whenever you are in the practicum setting or professional role.

If you are interested in enrolling in the NSCC Law Enforcement Academy, please follow these steps:

- Complete an Application for Admission to NSCC by visiting [northweststate.edu/apply-now/](http://northweststate.edu/apply-now/)
- Contact the Allied Health, Business, & Public Services Division Secretary at 419-267-1345 for an Academy Application or to be placed on the list for the next scheduled Academy
- Obtain your health physical from your physician and then conduct the required fingerprinting at the NSCC Campus Police Office
- Contact the Allied Health, Business, & Public Services Division Secretary to schedule an interview with the Academy Commander.
- Bring ALL of your completed forms from the application packet to the interview

<u>Course</u>	<u>Credits</u>
+ CJT134 Criminal Law .....	3
+ CJT240 Evidence & Procedures .....	3
+ CJT244 Criminal Investigation.....	4
+ CJT246 Technical Skills for Officers.....	3
+ CJT281 Vehicle Patrol/Traffic Enforcement.	4
+ CJT282 Firearms/Driving .....	4
+ CJT283 Defensive Tactics/Physical Fitness .	3
+ CJT284 Human Conditions .....	4
<b>Total Program Hours</b>	<b>28</b>

Law Enforcement Academy - All courses listed must be taken within the Academy hours. The academy schedule is August to May, Monday – Thursday evenings from 6 – 10 p.m., and Saturdays 8 a.m. – 4 p.m. A complete course calendar will be distributed on the first day of class.

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

- + Students must maintain a minimum grade of "C" in all courses to progress in the program and graduate.

## Law Enforcement - Academy Option

### Associate of Applied Science in Criminal Justice Technology

#### Allied Health, Business, and Public Services Division

Upon successful completion of this program, students will graduate with an Associate of Applied Science Degree and will be eligible to take the State of Ohio Peace Officer Certification exam. The student must meet Academy qualifications to be accepted into the program. Students must be 21 years of age by December 31st of the year they enroll in the Academy, and have a high school diploma or GED. Students under 21 years of age will have limited employment opportunities. Students will be required to submit the Ohio Peace Officer Training Commission Student Enrollment Certification Record, a Statement of Understanding, physical form, training waiver and liability forms. A valid driver's license is required. Background and criminal record checks will be completed and an interview is required. Students who have a state or federal weapons disqualifier, any felony conviction, currently registered as a sex offender, arson offender, convicted of a drug offense, theft or fraud, negligent assault, or convicted of a misdemeanor offense of violence or any related offenses as a result of domestic violence will not be eligible for admission.

Policies regarding the Law Enforcement Academy are available in the Academy Student Handbook. All students entering the program must adhere to the regulations within the handbook as well as the division's Substance Abuse Policy. Tattoos are not considered part of professional appearance and must be covered whenever you are in the practicum setting or professional role.

#### Program Learning Options

At the completion of the program students will be able to: At the completion of the program students will be able to:

1. Describe the role of the criminal justice system at local, state, and federal levels.
2. Apply codes of professional ethics and principles of ethical decision-making to case situations.
3. Analyze the fundamental theories, principles, and practices of criminal justice, including constitutional principles, judicial and correctional processes, and legal institutions.
4. Apply methods of law enforcement to traffic and speed enforcement, accidents, civil disorders, and crime.
5. Meet the requirements of the Peace Officer Basic Training and qualify for certification through the Ohio Peace Officer Training Commission.

#### Computer Elective:

Any 3 credit hour or 3 one credit hour computer course(s).

#### Math Elective:

See page 68 for list of courses.

#### Humanities and Natural Science Elective:

Select from core requirements listed on page 31.

<u>First Semester</u>	<u>Credits</u>
+ CJT130 Criminal Justice Principles .....	3
ENG111 Composition I .....	3
PSY110 General Psychology .....	3
Computer Elective .....	3
Humanities Elective.....	3
Natural Science Elective.....	<u>3-4</u>
	18-19

<u>Second Semester</u>	<u>Credits</u>
+ CJT230 Corrections.....	3
ENG112 Composition II.....	3
PSY210 Abnormal Psychology .....	3
SSC101 Sociology	
Math Elective.....	3
Human Service/Social	
Science Elective.....	<u>3</u>
	18

#### Third and Fourth Semester Credits

**Academy Option:** All courses listed must be taken within the Academy hours.

**Note:** The Academy schedule is August to May, Mon-Thurs evenings 6-10 p.m., Saturdays 8a.m.-4 p.m.

+ CJT134 Criminal Law .....	3
+ CJT240 Evidence & Procedure .....	3
+ CJT244 Criminal Investigation .....	4
+ CJT246 Technical Skills for Officers .....	3
+ CJT281 Vehicle Patrol/Traffic Enforcement	4
+ CJT282 Firearms/Driving .....	4
+ CJT283 Defensive Tactics/Physical Fitness	3
+ CJT284 Human Conditions.....	<u>4</u>
	28

**Total Program Hours** **64-65**

#### Human Service/Social Science Electives:

For Criminal Justice Majors only

HST101 Principles of Human Services	
HST105 Cultural Competence with Diverse Populations	
HST212 Principles of Addictions	
HST240 Social Problems	
HST242 Marriage & Family	
PSY220 Social Psychology	
PSY230 Growth & Development	
PSY260 Forensic Psychology	
SPN111 Spanish I	
SSC110 General Anthropology	
SSC120 American Government	
SSC130 Comparative Government	
SSC210 Cultural Diversity	
SSC220 Interpersonal Violence	

+ Students must attain a minimum grade of "C" in all courses with a "+" to progress in the program and to graduate.

\* Students currently employed full-time in a professional criminal justice setting may be allowed to substitute these courses.

# Logistics and Supply Chain Management

## Associate of Applied Business in Business Management

### Allied Health, Business, and Public Services Division

A career in supply chain management deals with a dynamic environment of efficiently facilitating the delivery of goods to customers through a variety of intermediaries. The process is known as channel management and is only a small part of supply chain management. Supply chain management deals with the entire array of sourcing, procurement, conversion, and logistics management activities. Organizations must rely on effective supply chains to coordinate the vast array of inputs and outputs of globally networked companies. The combination of information technology and outsourcing have created organizations like Dell and Wal-Mart adept at forming alliances and/or performing specific strategic tasks to take advantage of market conditions.

#### Career Outlook

Employment outlook appears strong through 2014 for front line supervisors/managers of production/operating workers with 860 new jobs per year and hourly rates of pay at \$24.15. Upper management positions including general and operations managers will experience an average annual growth of 1,894 workers per year and wage rates of \$45.63/hr. and would require additional education and experience.

#### Program Learning Outcomes

Students will be able to:

1. Analyze comprehension of the major styles of management.
2. Exhibit work skills of attendance, work ethic, and self-motivation.
3. Apply appropriate comprehension of business ethics.
4. Employ a working knowledge of best practices in supply chain management.
5. Differentiate between make the stock and make the order strategies.
6. Employ methods to manage inventory efficiently and pool inventory risks across time, products, channels, and geography.
7. Optimally position the push-pull boundary to leverage economies of scale and economies of scope.

<u>First Semester</u>		<u>Credits</u>
+ ACC111	Financial Accounting .....	3
BUS101	Introduction to Business.....	3
CIS114	Microsoft Applications.....	3
ENG111	Composition I.....	3
MTH109	College Algebra.....	3
+ SCM220	Operations Management .....	<u>3</u>
		18

<u>Second Semester</u>		<u>Credits</u>
+ ACC112	Managerial Accounting .....	3
ECO212	Microeconomics.....	3
ENG112	Composition II .....	3
+ SCM200	Supply Chain Management.....	3
+ SCM230	Physical Distribution Logistics .....	<u>3</u>
		15

<u>Third Semester</u>		<u>Credits</u>
+ BUS221	Business Law .....	3
+ MKT110	Marketing.....	3
+ SCM210	Purchasing and Materials Management.....	3
STA222	Business Statistics .....	3
	Humanities Elective .....	<u>3</u>
		15

<u>Fourth Semester</u>		<u>Credits</u>
+ BUS211	Business Communications .....	3
CIS113	Microsoft Excel.....	3
+ MGT110	Management.....	3
	Natural Science Elective .....	3
	Social Behavioral Science Elective.....	<u>3</u>
		15

**Total Program Credit Hours**      **63**

See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.

+ Students must attain a 2.00 grade point average in these technical courses to graduate.

# Logistics and Supply Chain Management Certificate

## Allied Health, Business, and Public Services Division

A career in supply chain management deals with a dynamic environment of efficiently facilitating the delivery of goods to customers through a variety of intermediaries. The process is known as channel management and is only a small part of supply chain management. Supply chain management deals with the entire array of sourcing, procurement, conversion, and logistics management activities. Organizations must rely on effective supply chains to coordinate the vast array of inputs and outputs of globally networked companies. The combination of information technology and outsourcing have created organizations like Dell and Wal-Mart adept at forming alliances and/or performing specific strategic tasks to take advantage of market conditions.

### Career Outlook

Employment outlook appears strong through 2014 for front line supervisors/managers of production/operating Workers with 860 new jobs per year and hourly rates of pay at \$24.15. Upper management positions including general and operations managers will experience an average annual growth of 1,894 workers per year and wage rates of \$45.63/ hr. and would require additional education and experience.

### Program Learning Outcomes

Students will be able to:

1. Analyze comprehension of the major styles of management.
2. Exhibit work skills of attendance, work ethic, and self-motivation.
3. Apply appropriate comprehension of business ethics.
4. Employ a working knowledge of best practices in supply chain management.
5. Differentiate between make the stock and make the order strategies.

<u>First Semester</u>	<u>Credits</u>
+ ACC111 Financial Accounting .....	3
ENG111 Composition I.....	3
+ MGT110 Management.....	3
MTH109 College Algebra.....	3
+ SCM220 Operations Management .....	<u>3</u>
	15

<u>Second Semester</u>	<u>Credits</u>
ENG112 Composition II .....	3
+ MGT120 Supervision.....	3
+ SCM200 Supply Chain Management .....	3
+ SCM230 Physical Distribution Logistics .....	3
STA222 Business Statistics .....	3
Computer Elective.....	<u>3</u>
	18

**Total Program Credit Hours      33**

### Computer Electives:

- CIS112 Microsoft Word
- CIS113 Microsoft Excel
- CIS114 Microsoft Applications

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

+ Students must attain a 2.00 grade point average in these technical courses to graduate.



## marketing

## Associate of Applied Business in Business Management

## Allied Health, Business, and Public Services Division

Graduates of the marketing degree are skilled in marketing, small business management, salesmanship and advertising, as well as accounting, supervision and decision making. Graduates are qualified for a position as manager or assistant manager of a retail store, franchise outlet or department store. Graduates may also work as managers or supervisors of other organizations.

**Career Outlook**

Employment in marketing both nationally and in the state of Ohio, is expected to grow as fast as the average. The main employers in marketing and retail management are grocery stores, automotive dealerships, clothing stores and department stores.

**Program Learning Outcomes**

Students will be able to:

1. Analyze comprehension of the major styles of management.
2. Exhibit work skills of attendance, work ethic, and self-motivation.
3. Apply appropriate comprehension of business ethics.
4. Explain and apply the marketing functions of product/service planning, pricing, distribution, and promotion for both domestic and international marketing situations.
5. Synthesize principles and concepts of marketing in developing a marketing plan.
6. Apply current technology skills in real world situations.
7. Apply the principles of retailing and e-marketing within the marketing function of a business.
8. Apply critical thinking skills to perform marketing research and analyze information.
9. Develop marketing concepts both written and orally in clear concise language appropriate to the audience including business presentation skills.
10. Analyze the issues, advantages, and challenges related to diversity in a global workforce.

<b>First Semester</b>		<b>Credits</b>
BUS101	Introduction to Business.....	3
CIS114	Microsoft Applications.....	3
ECO212	Microeconomics.....	3
ENG111	Composition I.....	3
	Mathematics Elective.....	<u>3</u>
		15

<b>Second Semester</b>		<b>Credits</b>
ECO211	Macroeconomics.....	3
ENG112	Composition II.....	3
+ MGT120	Supervision.....	3
+ MKT110	Marketing.....	3
	Natural Science Elective.....	<u>3</u>
		15

<b>Third Semester</b>		<b>Credits</b>
+ ACC111	Financial Accounting.....	3
+ BUS221	Business Law.....	3
+ MKT210	Advertising.....	3
	Computer Elective.....	3
	Social Behavioral Science Elective.....	<u>3</u>
		15

<b>Fourth Semester</b>		<b>Credits</b>
+ ACC112	Managerial Accounting.....	3
+ BUS211	Business Communications.....	3
+ MGT230	Retail Management.....	3
+ MGT280	Business Climate Analysis.....	3
+ MKT230	Salesmanship.....	3
	Humanities Elective.....	<u>3</u>
		18

**Total Program Credit Hours** **63**

**Computer Electives:**

CIS113	Microsoft Excel
CIS129	Web Page Development
VCT111	Layout & Design

**Mathematics Electives:**

MTH105	Quantitative Reasoning
MTH109	College Algebra

See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.

+ Students must attain a 2.00 grade point average in these technical courses to graduate.

# Medical Assisting Associate of Applied Science in Medical Assisting

## Allied Health, Business, and Public Services Division

Medical assistants are multi-skilled allied health professionals specifically trained to work in ambulatory settings, such as physicians' offices, clinics, and group practices, performing administrative and clinical procedures. This program will prepare competent entry-level medical assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains.

The following performance standards are necessary to safely and accurately carry out medical assisting duties: critical thinking ability sufficient for clinical judgment, physical abilities sufficient to move from room to room and maneuver in small spaces, tactile ability sufficient for physical assessment, ability to prepare and administer medications, ability to transfer patients, ability to read medication labels and patient records, ability to take blood pressure and hear breath sounds through a stethoscope, communicate English clearly enough for most patients to understand and understand the verbal communication of English-speaking patients, clear written communication, and manual dexterity.

### Program Learning Outcomes

1. Demonstrate knowledge of human structure and function and recognize common disorders of the body.
2. Demonstrate competence in clinical duties associated with assisting a physician in the diagnosis and treatment of patients in an ambulatory setting.
3. Apply the legal concepts and ethical responsibilities associated with patient care and the documentation of health information.
4. Display professionalism with interpersonal situations and business functions.
5. Apply principles of office management; planning, policy development, supervisory process, personnel training, equipment and facility maintenance, and time management.
6. Apply principles of effective oral and written communication skills with patients, their families and other health care providers, including effective patient instruction on health topics.
7. Demonstrate competence in performing administrative clerical duties and managing medical practice finances.
8. Demonstrate proficiency in computer operations and applications relative to patient care and the management of a medical office.
9. Demonstrate the ability to solve problems through proper means of analysis / synthesis and application of rational, systemic and logical thinking.

### Admission Requirements for the Program:

- Course placement Algebra score at the MTH080 level or successful completion of MTH080.
- High School Biology and Chemistry with a grade of "C" or higher or BIO101 Principles of Biology with a "C" grade or higher.
- ACCUPLACER testing. Complete any developmental courses needed.
- GPA 2.0 or higher.

### Requirements prior to enrollment in Externship:

- American Heart Association Healthcare Provider CPR
- BCI Background Check
- Health Insurance Coverage
- Medical/Immunization Form
- Signed Confidentiality Statement

Note: Students shall not receive compensation or payment, monetary or otherwise, for the externship/practicum experience.

<u>Fall Semester</u>	<u>Credits</u>
CIS114	Microsoft Applications..... 3
ENG111	Composition I..... 3
BIO150	Human Body ..... 4
PSY 110	General Psychology ..... 3
OAS180	Medical Terminology..... 3
	<b>16</b>

<u>Spring Semester</u>	<u>Credits</u>
+ MEA101	Medical Assisting Clinical I..... 3
+ MEA105	Laboratory Techniques..... 3
+ MEA108	Administrative Medical Office Procedures ..... 3
+ MEA 110	Pharmacology for Allied Health Professionals ..... 3
+ MEA 205	Disease Conditions..... 3
	<b>15</b>

<u>Fall Semester</u>	<u>Credits</u>
OAS 111	Electronic Health Records ..... 3
+ MEA229	Diagnostic & Procedural Coding ..... 4
+ MEA283	Computerized Medical Insurance ..... 3
+ MEA 201	Clinical II ..... 3
ENG112	Composition II ..... 3
	<b>16</b>

<u>Spring Semester</u>	<u>Credits</u>
SSC 210	Cultural Diversity OR
HST 105	Cultural Competence w/Diverse Populations..... 3
+ MEA200	Administrative Externship ..... 4
+ MEA202	Clinical Externship..... 4
	Math Elective (Stats)..... 3
	Humanities Elective ..... 3
	<b>17</b>

**Total Program Hours 64**

**Felony Conviction Disclosure:** Previous conviction of a felony may prevent an applicant from being eligible for the certification exam given by the American Association of Medical Assistants. "Individuals who have been found guilty of a felony or pleaded guilty to a felony are not eligible to take the Certified Medical Assistants exam. However, the certifying board may grant a waiver based upon mitigating circumstances."

The Medical Assisting program is Accredited by the Commission on Accreditation of Allied Health Programs ([www.caahep.org](http://www.caahep.org)), upon the recommendation of the Medical Assisting Review Board (MAERB).

Students must maintain a minimum grade of "C" in all courses to progress in the program and graduate.

+ Refers to technical course work.

## Medical Support

### Associate of Applied Business in Office Administrative Services

#### Allied Health, Business, and Public Services Division

Medical support employees work in physicians' offices, hospitals, nursing homes, and other medical settings. They may transcribe dictation, prepare medical records or charts, schedule appointments, handle correspondence, prepare bills and process insurance forms. In addition to a good background in keyboarding, accounting and computers, there is a need for expertise with medical terminology and familiarization with medical references. Strong communication skills are also important in dealing with patients in stressful situations.

#### Career Outlook

The increase in medical services and the aging population place tremendous demands on physicians and hospitals. Medical support employees are essential workers who must accurately process medical and insurance documents.

#### Program Learning Outcomes

Students will be able to:

1. Exhibit proficient keyboarding skills.
2. Create documents using language arts skills such as proofreading, grammar, and punctuation.
3. Develop and formulate documents using computer software skills.
4. Develop time management and organizational skills.
5. Create financial statements, reports, and schedules.
6. Apply mathematical operations to realistic business problems.
7. Create documents using accurate medical terminology and transcription.
8. Determine accurate codes for medical billing procedures.

#### Extended Pathway:

After completing the Medical Support degree requirements, a student interested in sitting for the Certified Coding Associate (CCA), Certified Coding Specialist (CCS), and/or Certified Coding Physician (CCS-P) Exam(s), will want to complete the following:

MEA205 Disease Conditions

The above are required courses prior to registering for the following:

OAS223 CCA Coding Exam Review  
OAS224 CCS Hospital Coding Exam Review  
OAS225 CCS-P Physician Office Coding Exam Review

See page 31 for Humanities Electives.

#### Mathematics Electives:

MTH105 Quantitative Reasoning  
MTH109 College Algebra  
STA120 Introduction to Statistics

<u>First Semester</u>		<u>Credits</u>
	CIS104*	Desktop Management..... 1
+	CIS112*	Microsoft Word ..... 3
	ENG111	Composition I..... 3
	OAS101*	Business Document Formatting & Skillbuilding..... 3
+	OAS160	Administrative Technology & Procedures..... 3
+	OAS180	Medical Terminology ..... 3
		<u>16</u>

<u>Second Semester</u>		<u>Credits</u>
	BIO150	The Human Body ..... 4
	ENG112	Composition II ..... 3
+	OAS102	Advanced Business Formatting & Skillbuilding..... 3
+	OAS105	Document Editing & Proofreading 2
+	MEA108	Administrative Medical Office Procedure..... 3
	MEA110	Pharmacology for Allied Health Professionals..... 3
		<u>18</u>

<u>Third Semester</u>		<u>Credits</u>
	OAS103	Office Accounting ..... 3
+	OAS111	Electronic Health Records..... 3
+	OAS200	Speedbuilding..... 1
+	OAS229	Diagnostic & Procedural Coding .... 4
+	OAS282	Medical Transcription ..... 3
+	OAS283	Computerized Medical Insurance ... 3
		<u>17</u>

<u>Fourth Semester</u>		<u>Credits</u>
	CIS113*	Microsoft Excel..... 3
+	OAS291	Internship I ..... 1
	PSY110	General Psychology ..... 3
		Humanities Elective ..... 3
		Math Elective ..... 3
		<u>13</u>

**Total Program Credit Hours** **64**

\* CIS090 Introduction to Computers and OAS090 Keyboarding Basics are prerequisites to CIS104, CIS112, CIS113 and OAS101. A placement test is available for CIS090 & OAS090. See the Admissions Office.

+ Students must attain a 2.00 grade point average in these technical courses to graduate. Office management is a

# Office Administration

## Associate of Applied Business in Office Administrative Services

### Allied Health, Business, and Public Services Division

A management team is complete only with a qualified administrative staff. The office administrative services technology develops well-trained graduates for positions in business and in governmental agencies as principal assistants to the managers and administrators of industrial corporations, financial institutions, colleges and schools, hospitals, clinics, law firms, governmental agencies and small businesses.

Graduates' skills include records management, keyboarding on computers, operating word processing software programs on the PC, accounting and the composition of business letters and reports. They also prioritize work, process mail, arrange business trips, make appointments, answer the telephone, operate photocopy machines and assist in routine office duties. They may supervise other office employees.

### Career Outlook

This occupation is one of the largest in the United States. Employment opportunities should be very good, especially for those who have obtained excellent communication skills. Although many of the tasks that secretaries and administrators perform have become automated, it will be those tasks which require personal contact and communication which will continue to play a key role in the office activities of most organizations. Those duties include planning conferences, receiving clients and giving staff instructions. It is expected that several hundred thousand secretarial positions will be open annually throughout the U.S.

### Program Learning Outcomes

Students will be able to:

1. Exhibit proficient keyboarding skills.
2. Create documents using language arts skills such as proofreading, grammar, and punctuation.
3. Develop and formulate documents using computer software skills.
4. Develop time management and organizational skills.
5. Create financial statements, reports, and schedules.
6. Apply mathematical operations to realistic business problems.

#### Accounting Electives:

- ACC111 Financial Accounting
- OAS103 Office Accounting

#### Business Electives:

- ACC120 Payroll Accounting
- ACC260 Accounting on Computers
- CIS201 Workplace Technologies
- VCT111 Layout & Design

#### Management Electives:

- MGT110 Management
- MGT120 Supervision
- MGT210 Human Resource Management

#### Mathematics Electives:

- MTH105 Quantitative Reasoning
- MTH109 College Algebra

STA120	Introduction to Statistics	<u>Credits</u>
<b>First Semester</b>		
CIS104*	Desktop Management.....	1
+ CIS112*	Microsoft Word.....	3
CIS119*	PowerPoint .....	1
ENG111	Composition I.....	3
OAS101*	Business Document Formatting & Skillbuilding .....	3
+ OAS110	Records Management.....	<u>3</u>
		14

		<u>Credits</u>
<b>Second Semester</b>		
+ CIS113*	Microsoft Excel .....	3
CIS117	Microsoft Publisher .....	1
CIS118*	Access.....	1
ENG112	Composition II.....	3
+ OAS102	Advanced Business Document Formatting & Skillbuilding .....	3
+ OAS105	Document Editing & Proofreading	2
+ OAS160	Administrative Technology & Procedures .....	<u>3</u>
		16

		<u>Credits</u>
<b>Third Semester</b>		
+ OAS200	Speedbuilding.....	1
+	Accounting Elective .....	3
	Humanities Elective .....	3
	Management Elective .....	3
	Mathematics Elective .....	3
	Natural Science Elective .....	<u>3</u>
		16

		<u>Credits</u>
<b>Fourth Semester</b>		
+ BUS211	Business Communications .....	3
+ OAS230	Transcription.....	3
+ OAS249	Advanced Microsoft Suite.....	3
+ OAS291	Internship I .....	1
+	Business Elective.....	3
	Social Behavioral Science Elective .....	<u>3</u>
		16

**Total Program Credit Hours** **62**

**See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.**

\* CIS090 Introduction to Computers and OAS090 Keyboarding Basics are prerequisites to CIS104, CIS112, CIS113, CIS117, CIS118, CIS119, OAS101 and/or OAS104. A placement test is available for CIS090 & OAS090. See the Admissions Office.

+ Students must attain a 2.00 grade point average in these technical courses to graduate.



## Office Assistant Certificate

### Allied Health, Business, and Public Services Division

A one-year certificate is available for students who need a quick entry into the job market. The skills needed for entry-level positions in today's fast-paced and automated business office are provided in this program. The office assistant is prepared to assemble facts and figures from office records and express them in statements, letters, and forms; file office records, operate calculators, photocopy machines, and the latest word processing equipment; and assist with general business duties such as responding to mail, making arrangements for business trips, and scheduling appointments.

Students can earn the associate degree by completing one year of full-time study beyond the Office Assistant Certificate.

#### Career Outlook

Employment opportunities should be very good, especially for those who have obtained excellent communication skills. Although many of the tasks that secretaries perform have become automated, it will be those tasks which require personal contact and communication which will continue to play a key role in the office activities of most organizations.

#### Program Learning Outcomes

Students will be able to:

1. Exhibit proficient keyboarding skills.
2. Demonstrate language arts skills such as proofreading, grammar, and punctuation.
3. Demonstrate proficiency in computer software skills.
4. Demonstrate time management and organizational skills.

<u>First Semester</u>		<u>Credits</u>
	CIS104*	Desktop Management..... 1
+	CIS112*	Microsoft Word ..... 3
	CIS119*	PowerPoint ..... 1
	ENG111	Composition I..... 3
	OAS101*	Business Document Formatting & Skillbuilding..... 3
+	OAS110	Records Management..... 3
		<u>14</u>
<u>Second Semester</u>		<u>Credits</u>
+	CIS113*	Microsoft Excel..... 3
	CIS117	Publisher..... 1
	CIS118*	Access ..... 1
	ENG112	Composition II ..... 3
+	OAS102	Advanced Business Document Formatting & Skillbuilding..... 3
+	OAS105	Document Editing & Proofreading . 2
+	OAS160	Administrative Technology & Procedures ..... 3
		<u>16</u>
		<b>Total Program Credit Hours 30</b>

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

\* CIS090 Introduction to Computers and OAS090 Keyboarding Basics are prerequisites to CIS104, CIS112, CIS113, CIS118, CIS119, and/or OAS101. A placement test is available for CIS090 & OAS090. See the Admissions Office.

+ Students must attain a 2.00 grade point average in these technical courses to graduate. Office management is a critical

# Office Management

## Associate of Applied Business in Office Administrative Services

### Allied Health, Business, and Public Services Division

Office management is a critical component in the efficient and effective office operations. All organizations need timely and effective office and administrative support to operate efficiently. Office and administrative support supervisors and managers coordinate this support. These workers are employed in virtually every sector of the economy, working in positions as varied as teller supervisor, customer services manager or shipping and receiving supervisor.

### Career Outlook

Employment is expected to grow by 6 percent during the 2006-2016 period. According to the Bureau of Labor Statistics, office and administrative support supervisors and managers held 1.4 million jobs in 2006. Although jobs for office and administrative support supervisors and managers are found in practically every industry, the largest number are found in organizations with a large administrative support workforce, such as banks, wholesalers, government agencies, retail establishments, business service firms, health care facilities, schools and insurance companies. Because of most organizations' need for continuity of supervision, few office and administrative support supervisors and managers work on a temporary or part-time basis.

### Program Learning Outcomes

Students will be able to:

1. Demonstrate language arts skills such as proofreading, grammar, and punctuation.
2. Demonstrate proficiency in computer software skills.
3. Demonstrate the understanding of defining the problem, identification of possible solutions and development and implementation of the solution.
4. Analyze and differentiate the major styles of management.

### Accounting Electives:

- ACC111 Financial Accounting
- OAS103 Office Accounting

### Mathematics Electives:

- MTH105 Quantitative Reasoning
- MTH109 College Algebra
- STA120 Introduction to Statistics

### Technical Electives:

- CIS201 Workplace Technologies
- OAS249 Advanced Microsoft Suite

See page 31 for Natural Science, Humanities and Social Behavioral Science Electives.

<u>First Semester</u>	<u>Credits</u>
+ CIS112* Microsoft Word .....	3
ENG111 Composition I.....	3
+ OAS101 Business Document Formatting & Skillbuilding.....	3
+ OAS110 Records Management.....	3
+ Accounting Elective .....	<u>3</u>
	15

<u>Second Semester</u>	<u>Credits</u>
BUS221 Business Law .....	3
CIS113* Microsoft Excel.....	3
+ CIS118* Access .....	1
ENG112 Composition II .....	3
+ MGT110 Management.....	3
Mathematics Elective .....	<u>3</u>
	16

<u>Third Semester</u>	<u>Credits</u>
ECO212 Microeconomics .....	3
+ MKT110 Marketing .....	3
+ OAS160 Administrative Technology & Procedures.....	3
+ PAR101 Law Office Management.....	3
Natural Science Elective .....	<u>3</u>
	15

<u>Fourth Semester</u>	<u>Credits</u>
+ BUS211 Business Communications .....	3
CIS117 Microsoft Publisher.....	1
+ MGT210 Human Resource Management .....	3
+ OAS291 Internship I .....	1
Humanities Elective .....	3
Social Behavioral Science Elective.	3
+ Technical Elective .....	<u>3</u>
	17

**Total Program Credit Hours 63**

\* CIS090 Introduction to Computers and OAS090 Keyboarding Basics are prerequisites to CIS112, CIS113, and CIS118. A placement test is available for CIS090 & OAS090. See the Admissions Office.

+ Students must attain a 2.00 grade point average in these technical courses to graduate. The paralegal works under

## Paralegal Associate of Applied Business

### Allied Health, Business, and Public Services Division

The paralegal works under the direct supervision of an attorney, performing a variety of duties including research and investigation of facts. The Associate of Applied Business Degree in Paralegal Studies prepares students for an entry-level position in a law firm or law department of a business or financial institution. Typical job titles include legal assistant, title researcher and legal researcher. The paralegal may be called on to prepare a variety of law-related documents including standard forms, pleadings, deeds mortgages and other documents. The paralegal may search official records and record and file documents with County Clerk of Courts, Secretary of State or other officials. The paralegal will perform legal research for the preparation of briefs and other legal documents and communicate clearly and effectively in writing and orally with attorneys, clients and other government officials.

This program prepares the student for transfer to the University of Toledo's Bachelor of Science in Paralegal Studies.

#### Career Outlook

Most paralegals will be hired by private firms, although opportunities will also exist in the public sector. In larger cities there are also opportunities with consumer organizations, public agencies and the courts.

#### Program Learning Outcomes

Students will be able to:

1. Analyze and apply comprehension of law office practices.
2. Conduct legal research and comprehend legal documents.
3. Distinguish between civil and criminal procedures.
4. Analyze and apply comprehension of tort law situations and procedures.
5. Explain real estate transactions and probate procedures in Ohio.
6. Explain domestic relations law in Ohio.

See page 31 for a list of Natural Science Electives.

#### Business Electives:

BUS221	Business Law
ECO211	Macroeconomics (Transfer)

#### Mathematics Electives:

MTH105	Quantitative Reasoning
MTH109	College Algebra (Transfer)

<u>First Semester</u>		<u>Credits</u>
CIS114	Microsoft Applications.....	3
ENG111	Composition I.....	3
+ PAR100	Introduction to Paralegal.....	3
+ PAR101	Law Office Management.....	3
	Mathematics Electives .....	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
ACC111	Financial Accounting .....	3
ENG112	Composition II .....	3
+ PAR110	Civil Procedures .....	3
+ PAR115	Family Law .....	3
	Social Behavioral Science Elective.....	<u>3</u>
		15

<u>Third Semester</u>		<u>Credits</u>
+ PAR205	Real Estate Transactions .....	3
+ PAR210	Legal Research & Writing.....	3
+ PAR215	Tort Law .....	3
	Business Elective .....	3
	Natural Science Elective .....	<u>3</u>
		15

<u>Fourth Semester</u>		<u>Credits</u>
+ PAR220	Criminal Law .....	3
+ PAR222	Estates, Trusts & Wills.....	3
PHI110	Critical Thinking & Logic.....	3
SSC210	Cultural Diversity.....	3
	Program Elective.....	<u>3</u>
		15

**Total Program Credit Hours** **60**

#### Program Electives:

BIO101	Principles of Biology
BIO115	Ecology
BIO231	Anatomy & Physiology I
PAR221	Bankruptcy (Not for Transfer)
PHY140	Astronomy

#### Social Behavioral Science Electives:

PSY110	General Psychology
SSC120	American Government

+ Students must attain a 2.00 grade point average in these technical courses to graduate.

# Paraprofessional Education Associate of Applied Science

## Allied Health, Business, and Public Services Division

The paraprofessional education degree program prepares individuals for instructional teacher assistant positions in Pre-K to grade 12 settings. The program was developed to meet the Ohio Department of Education standards for the Paraprofessional Associate License. The curriculum integrates classroom and field experiences to provide the student with the opportunity to apply skills and techniques with multiple age groups.

<u>Fall Semester</u>		<u>Credits</u>
	EDP 160*	Intro to Paraprofessional Education 4
+	EDU100	Introduction to Teaching ..... 3
+	EDU 150	Child Development I..... 3
	ENG111	Composition I..... 3
	PSY110	General Psychology ..... 3
		<u>16</u>

A student who wishes to be recommended for the Paraprofessional Associate License must meet the criteria of the program as stated in the student handbook. Students must also show completion of standard first aid training, community CPR, common childhood illness recognition and child abuse and neglect training through additional college courses or approved community providers to be eligible for licensure.

<u>Spring Semester</u>		<u>Credits</u>
+	EDU120	Guidance & Classroom Management 3
+	EDU230	Family, School, Community ..... 3
+	EDU260	Instructional Technology..... 3
	ENG112	Composition II ..... 3
	PSY230	Human Growth and Development .. 3
		<u>15</u>

All students are required to have a documentation file which includes: a recent medical statement, non-conviction statement and records check through the Bureau of Criminal Investigation and Identification and the FBI. The appropriate forms are available from Education faculty and/or the division secretary. Specific program policies are stated in the ECD/EDU/EDP Student Handbook.

<u>Fall Semester</u>		<u>Credits</u>
+	EDU 140	Strategies for Teaching Reading ..... 3
+	EDU220	Special Education..... 3
+	EDU240	Educational Psychology ..... 3
	EDU 270*	Cultural & Linguistic Diversity ..... 3
	MTH170	Survey of Mathematics ..... 3
		<u>15</u>

### Program Learning Outcomes

Graduates of the Paraprofessional Educator program will:

1. Demonstrate knowledge and understand the principles of learning and child development in order to assist the classroom teacher.
2. Assist teachers in creating learning environments that promote high levels of student learning and achievement.
3. Assist in the implementation of instructional strategies that accommodate various learning styles, intelligences, and exceptionalities.
4. Assist teachers with the implementation of varied assessment tools.
5. Collaborate and communicate with students, parents, other educators, administrators, and the community to support student learning.
6. Demonstrate an understanding of the importance of professional growth, ethical conduct, and involvement as an individual and as a member of a learning community

<u>Spring Semester</u>		<u>Credits</u>
+	EDP290*	Paraprofessional Internship..... 2
+	EDU210	Creative Arts Curriculum..... 3
+	EDU250	Education Seminar ..... 2
	ENG214	Discussion & Conference Methods. 3
	ENG230	Children’s Literature ..... 3
		Natural/Physical Science Elective... 4
		<u>17</u>
		<b>Total Program Hours 63</b>

### Natural/Physical Science Elective:

Select any 4 credit hour lab course with a BIO, CHM, or PHY prefix.

Students must attain a minimum grade of “C” in all courses to progress in the program and to graduate.

+ Refers to technical coursework.

\* For an ODE Paraprofessional Associate License, students must have a grade of “B” or higher in EDP160, EDU270, and EDP290.



## Pre-Business Administration

### Associate of Science

#### Allied Health, Business, and Public Services Division

Students who wish to transfer into the College of Business Administration (COBA) at the University of Toledo can complete the first two years at Northwest State and earn an Associate of Science in Pre-Business Administration. Courses will transfer to the Bachelor of Business Administration degree. Many other four-year colleges and universities will also accept the courses for transfer credits.

#### Career Outlook

Employment opportunities are varied and will depend on each individual goal. Entry-level management positions are found in the manufacturing, retail, food service, banking and governmental services. Individuals interested in sales positions will find many opportunities. Both nationally and in the state of Ohio business services sales positions, particularly technical sales are expected to grow much faster than the average. Companies which are new and existing will be hiring managers. Service industries, such as food service, will experience a faster than average growth.

#### Program Learning Outcomes

Students who complete the Pre-Business Administration program will be able to transfer to four-year colleges in degree programs in which students will be able to:

1. Demonstrate comprehension of the major styles of management.
2. Demonstrate mastery of a foundation of business understanding.

#### Humanities Electives:

*At least one from each prefix*

HUM209	Humanities & Cultures: Renaissance to Present
HUM210	Humanities & Cultures: Ancient & Medieval Worlds
HUM221	Music Appreciation
HUM230	Art Appreciation
PHI110	Critical Thinking & Logic
PHI201	Introduction to Philosophy
PHI210	Ethics
PHI230	World Religions

#### Social Behavioral Science Electives:

HIS101	U.S. History Pre-1876
HIS102	U.S. History Post-1876
PSY110	General Psychology
SSC101	Sociology
SSC120	American Government

<u>First Semester</u>		<u>Credits</u>
ACC111	Financial Accounting .....	3
ECO212	Microeconomics .....	3
ENG111	Composition I .....	3
MGT110	Management .....	3
	Humanities Elective .....	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
ACC112	Managerial Accounting .....	3
CIS114	Microsoft Applications .....	3
ENG112	Composition II .....	3
MKT110	Marketing .....	3
	Humanities Elective .....	<u>3</u>
		15

<u>Third Semester</u>		<u>Credits</u>
MTH109	College Algebra .....	3
SSC210	Cultural Diversity .....	3
	Humanities Elective .....	3
	Natural Science Elective .....	4
	Social Behavioral Science Elective .....	<u>3</u>
		16

<u>Fourth Semester</u>		<u>Credits</u>
ECO211	Macroeconomics .....	3
STA222	Business Statistics .....	3
	Humanities Elective .....	3
	Literature Elective .....	3
	Natural Science Elective .....	<u>4</u>
		16

**Total Program Credit Hours** **62**

#### Literature Electives:

ENG223	Interpretation of Literature
ENG240	Introduction to Poetry
ENG241	Introduction to Fiction
ENG250	American Literature Through the Mid-19th Century
ENG251	American Literature Since the Mid-19th Century
ENG260	British Literature Through the 18th Century
ENG261	British Literature 19th Century to Present

#### Natural Science Electives:

*One course per prefix*

BIO101	Principles of Biology
BIO115	Ecology
BIO180	Principles of Genetics
PHY140	Astronomy
PHY251	Physics: Mechanics and Heat
PHY252	Physics: Electricity and Magnetism

# Pre-Kindergarten

## Associate of Applied Science in Early Childhood Development

### Allied Health, Business, and Public Services Division

The early childhood development (ECD) degree program prepares individuals for teaching positions in child care facilities, Head Start centers, and pre-schools as well as provides professional training for in-home child care providers. The curriculum integrates classroom and field experiences to provide the student with the opportunity to apply skills and techniques in fostering the young child's social, emotional, physical, creative and cognitive growth.

This program is approved by the Ohio Department of Education for the Pre-Kindergarten Associate License. A student who wishes to be recommended for the Pre-Kindergarten Associate License must meet the criteria of the program as stated in the student handbook and must formally apply for admission. Students must also show completion of standard first aid training, community CPR, common childhood illness recognition and child abuse and neglect training through additional college courses or approved community providers to be eligible for licensure. The student must have day-time availability for field placements.

All students are required to have a documentation file which includes: a recent medical statement, non-conviction statement and records check through the Bureau of Criminal Investigation and Identification and the FBI. The appropriate forms are available from Education faculty and/or the division secretary. Specific program policies are stated in the ECD/EDU/EDP Student Handbook.

### Program Learning Outcomes

Graduates of the Pre-Kindergarten program will:

1. Apply content knowledge in early childhood learning environments.
2. Create learning environments that promote growth and development and achievement for all students.
3. Describe and apply instructional strategies to promote students' learning and meet the needs and interests of all students.
4. Construct and use varied assessments to inform instruction, evaluate, and ensure student learning in Pre-Kindergarten learning environments.
5. Collaborate and communicate with students, families, other educators, administrators, and the community to support student learning.
6. Demonstrate responsibility for professional growth, performance and involvement as an individual and as a member of a learning community.

<u>Fall Semester</u>		<u>Credits</u>
+	ECD190*	Fundamentals of Early Childhood Education.....
		3
	ECD 150	Infant Toddler Development .....
		2
+	EDU100	Introduction to Teaching .....
		3
+	EDU150	Child Development I .....
		3
	ENG111	Composition I.....
		3
+	PSY110	General Psychology .....
		<u>3</u>
		17

<u>Spring Semester</u>		<u>Credits</u>
+	ECD201*	Pre-K Curriculum & Methods.....
		3
+	EDU120	Guidance & Classroom Management .....
		3
+	EDU210	Creative Arts Curriculum.....
		3
+	EDU230	Family, School, Community .....
		3
	ENG112	Composition II .....
		<u>3</u>
		15

<u>Fall Semester</u>		<u>Credits</u>
+	EDU140	Strategies for Teaching Reading .....
		3
+	EDU220	Special Education.....
		3
+	EDU240	Educational Psychology .....
		3
+	EDU 270*	Cultural & Linguistic Diversity .....
		3
	MTH170	Survey of Mathematics .....
		<u>3</u>
		15

<u>Spring Semester</u>		<u>Credits</u>
	ECD290	Pre-Kindergarten Practicum.....
		3
	EDU250	Education Seminar .....
		2
+	EDU260	Instructional Technology.....
		3
	ENG230	Children's Literature .....
		3
		Natural/Physical Science Elective...
		<u>4</u>
		15

**Total Program Hours** **62**

#### Natural/Physical Science Elective:

Select any 4 credit hour lab course with a BIO, CHM or PHY prefix.

Students must attain a minimum grade of "C" in all courses to progress in the program and graduate.

+ Refers to technical coursework

\* ODE Pre-K Associate License requires grade of "B" or higher in ECD190, ECD201, EDU270, and ECD290.

## Phlebotomy Technician Certificate

### Allied Health, Business, and Public Services Division

The Phlebotomy Certificate prepares students to be an important member of the health care team. The phlebotomist's primary role is to collect blood specimens for testing which aids the physician in the proper diagnosis and treatment of illness. Graduates will be prepared for entry level employment and will be qualified to sit for one of the national certification exams. This program will provide a career pathway to Medical Assisting, Medical Laboratory Technician and other allied health professions.

For Gainful Employment information, find this certificate program online at NorthwestState.edu under the Allied Health, Business, & Public Services link.

### Program Learning Outcomes

Students completing the Phlebotomy Technician Certificate will:

1. Comply with infection control standards and federal, state, and locally mandated regulations regarding safety practices.
2. Follow standard operating procedures to collect, transport, handle and process blood and other specimens.
3. Model professional appearance, behavior and interpersonal skills in the work environment.
4. Perform duties within legal and ethical boundaries.

<u>Course</u>		<u>Credits</u>
BIO150	Human Body* .....	4
CIS114	Microsoft Applications.....	3
ENG111	Composition I.....	3
OAS180	Medical Terminology .....	3
+ MEA105	Laboratory Techniques.....	3
+ MEA108	Admin Med Office Procedures.....	3
+ MEA207	Phlebotomy Externship .....	6

**Total Program Hours** **25**

### \*Prerequisite requirement:

BIO 101 or high school Biology & Chemistry with a grade of "C" or better.

Demonstrated proficiency at the level of MTH 080 review of Beginning Algebra by placement test score or successful completion of the course.

### Program Requirements Prior to Externship:

American Heart Association Healthcare Provider CPR  
BCI/Background Check  
Health Insurance Coverage  
Health Physical & Immunization Form  
Confidentiality Statement

*Gainful employment information for NSCC's certificate programs can be found online at NorthwestState.edu/GainfulEmployment. Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

Students must maintain a minimum grade of "C" in all courses to progress in the program and graduate.

+ Refers to technical course work

\* Prerequisite requirement: BIO101 or high school Biology and Chemistry with a grade of "C" or better.

# Real Estate Certificate

## Allied Health, Business, and Public Services Division

Real estate agents assist people in buying, selling and renting properties and businesses. Real estate agents work for brokers on a contractual basis. Some real estate agents work for construction companies, promoting homes that the company is building. Students who complete the Real Estate Certificate are qualified to pursue licensure as a real estate salesperson. The Ohio Real Estate Commission has approved the following courses in preparation for licensure: REA210 Real Estate Principles, REA220 Real Estate Law, REA230 Real Estate Finance and REA240 Real Estate Appraisal. Credits earned in the Real Estate Certificate also apply toward a Banking & Finance degree.

Real estate classes are offered in a seminar format as full-day sessions on weekends.

### Career Outlook

Employment will be stable in the state of Ohio for real estate agents. The demand for home purchases and management of rental units is expected to grow in the future. People will continue to move to other parts of the country, creating a demand for home sales, while others will be seeking larger homes as their income increases. Real estate agents will be able to work more efficiently with the increased use of technology in the field, such as computers, cellular phones, and pagers. Access to the Internet will also allow agents to show clients homes without leaving the office, therefore helping the agent to serve more clients than in the past.

### Program Learning Outcomes

Student will be able to:

1. Explain basic terms regarding real estate.
2. Define the laws governing the real estate industry.
3. Explain terms and procedures regarding real estate financing.
4. Apply the techniques of appraising to determine the value of a residential real estate property.

<u>First Semester</u>		<u>Credits</u>
+	ACC111 Financial Accounting .....	3
	ENG111 Composition I.....	3
+	REA210 Real Estate Principles.....	3
+	REA220 Real Estate Law.....	3
	Mathematics Elective .....	<u>3</u>
		15

<u>Second Semester</u>		<u>Credits</u>
+	ACC112 Managerial Accounting .....	3
	CIS114 Microsoft Applications.....	3
	ENG112 Composition II .....	3
+	REA230 Real Estate Finance .....	3
+	REA240 Real Estate Appraisal .....	<u>3</u>
		15

**Total Program Credit Hours      30**

### Mathematics Electives:

- MTH105 Quantitative Reasoning
- MTH109 College Algebra

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

- + Students must attain a 2.00 grade point average in these technical courses to graduate.



## Northwest Ohio Allied Health Education Consortium

### Allied Health, Business, and Public Services Division

This initiative brings four institutions of higher education in the northwestern corner of Ohio into partnership to share existing Allied Health programs. The partner schools are Northwest State Community College, Rhodes State College, Marion Technical College and Clark State Community College. Students can enroll in any of these partner colleges while attending their hometown college or university with the help of distance education formats such as live video conferencing, webcasting, podcasting and other distance modalities. For example, Northwest State students can take their general education core courses at NSCC and become enrolled in the Occupational Therapy Assistant program at Rhodes State with a reduction in travel due to the use of distance education. Clinical education experiences may be available in your hometown as well.

More information on the Northwest Ohio Allied Health Education Consortium can be found at [www.ohioalliedhealth.com](http://www.ohioalliedhealth.com).

#### Health Information Technician

Health Information Technician (HIT) focuses on the management of healthcare data. As a Health Information Technician, you would be responsible for maintaining components of health information systems consistent with the medical, administrative, ethical, legal, accreditation, and regulatory requirements of the health care delivery system. The health information technician must collect, integrate, and analyze primary and secondary health care data; disseminate information and manage information resources related to the research, planning, provision, payment and evaluation of healthcare services. Health information technicians are found in all types of healthcare facilities including hospitals, research centers, and clinics.

#### Medical Laboratory Technician

Medical Laboratory Technician courses are offered in a blended format, using the distance education and live laboratory sessions at Marion one day a week. Clinical education experiences may be available in the local area and will be arranged during the last quarter in the program. Upon successful completion of the program, students received an Associate's Degree from Marion Technical College. The program is designed to teach students how to collect and process specimens, perform basic analytical tests, monitor quality control and solve medical laboratory problems. Students in the program receive instruction in classroom sessions, lab practices and clinical experiences.

#### Radiographic Imaging

Upon successful completion of the program, the student will be eligible to take the examination in radiography of the American Registry of Radiologic Technologists. Graduates of the program find employment as radiographers in a variety of settings including hospitals, clinics, physicians' offices and mobile units, as well as numerous specialty fields including computed tomography, magnetic resonance imaging, mammography and vascular procedures. In addition, radiography is considered the foundation for careers in diagnostic medical sonography (ultrasound), radiation therapy and nuclear medicine. Graduates may also qualify for job opportunities with commercial firms and (once advanced academic credentials are obtained), may compete for faculty appointments in radiography education as well as radiology administration positions

#### Respiratory Care

Skilled providers of respiratory care are in increasing demand. Respiratory Care Practitioners are prepared to administer pulmonary care under the direction of licensed physicians. Their tasks involve the administration of medical gases, medications by inhalation, pulmonary drainage and positive pressure breathing treatments. Knowledge of special life-support equipment and methods of monitoring the critically-ill patients are required of respiratory care practitioners. Individuals educated as respiratory care therapists must complete a minimum of two years of education. Upon completion of the Respiratory Care Program at Rhodes State College, graduates are eligible to sit for the national board exams to become a Registered Respiratory Therapist (RRT).

#### Occupational Therapy Assistant

An occupational therapy assistant treats patients using purposeful and meaningful activities. The treatment is holistic including focus on the patients' physical, cognitive and psychological abilities. Occupational therapy assistants (OTA) aid individuals of any age to regain skills needed to participate in productive, satisfactory and meaningful living. Under the supervision of an occupational therapist, an assistant can treat clients with cognitive, physical, emotional and/or developmental disabilities in a variety of healthcare and other settings. After successfully completing an accredited Occupational Therapy Assistant Program, the graduate is eligible to take the National Certification Examination for the Occupational Therapy Assistant administered by the National Board for Certification in Occupational Therapy (NBCOT)

#### For More Information Contact

Janet Koeplinger, Dean of Allied Health, Business, and Public Services  
(419) 267-1258 or [jkoeplinger@NorthwestState.edu](mailto:jkoeplinger@NorthwestState.edu)



# NURSING

Contact the Nursing Division Office  
419.267.1246



## Nursing Division

The Nursing Division at Northwest State Community College offers nursing degree and certificate programs that prepare students to meet the rapidly changing demands of the healthcare industry.

All programs in the Nursing Division are fully approved by the Ohio Board of Nursing; the RN and LPN to RN programs are also accredited by the Accreditation Commission for Education in Nursing, 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326, 404-975-5000.

Graduates are eligible to take the National Council Licensure Exam (NCLEX) for licensure and enter directly into the workforce. Students who have prior misdemeanor, felony, or D.W.I. convictions may be denied access to clinical agencies and the opportunities to take the NCLEX. State Law (Senate Bill 38 and Senate Bill 160) requires certain agencies providing care to children or adults age 60 or older to require a Bureau of Criminal Identification and Investigation (BCII) check of past misdemeanors and felonies. Job seekers are prohibited from holding such jobs if they have previously been convicted of (or pleaded guilty to) a variety of offenses. Contact the Dean of Nursing for further information.

Degree and Certificate programs offered through the Nursing Division include:

### Associate of Applied Science in Nursing

Registered Nurse (RN)

LPN to RN Advanced Standing Program (RN)

### Certificate Program

Practical Nursing (PN)

### Prerequisites

All students are required to demonstrate proficiencies in reading, writing, and mathematics based on scores on the ACCUPLACER placement test, ACT test or take the recommended classes. If you have not taken the placement test or ACT, stop by the Admissions Office or contact at (419) 267-1320 or [admissions@NorthwestState.edu](mailto:admissions@NorthwestState.edu) for information or referral to testing.

Some courses listed in this program have specific prerequisites. See course descriptions for these prerequisites in the Course Description section of this publication.

### Clinical Requirements

Clinical agencies utilized by the nursing program may require a negative criminal background check and a negative drug screen. Although the College will make reasonable efforts to place admitted students in clinical experiences, it will be up to the host facility to determine whether a student will be allowed to be placed at that facility. A positive criminal background check or drug screen requires a conference with the Dean of Nursing to determine whether the student can continue in the clinical nursing program. Students with a positive background check or drug screen may be dismissed from the nursing program.



This is a rigorous program. Full-time employment is not recommended during the clinical courses.

Guidelines from the Center for Disease Control state that “health care workers who have exudative lesions or weeping dermatitis should refrain from all direct patient care until the condition resolves.”

The following physical requirements are necessary to safely and accurately carry out the nursing duties:

- Critical thinking ability sufficient for clinical judgment
- Physical abilities sufficient to move from room to room and maneuver in small spaces
- Tactile ability sufficient for physical assessment
- Ability to prepare and administer medications
- Ability to transfer patients
- Ability to read medication labels and patient records
- Ability to take blood pressure and hear breath sounds through a stethoscope (special types are available)
- Communicate English clearly enough for most patients to understand and understand the verbal communication of English speaking clients
- Clear written communication

### General Education

For Northwest State Core Requirements, See page 31. For the NSCC Transfer Module, see page 38.

### Course Sequence

There is a suggested sequence of courses for full-time students. If you are a part-time student or have transferred course(s) in from another college, you should generally complete the courses listed under semester 1 before moving on to semester 2, and 3, etc. General education courses may be taken at any time. Please meet with a nursing advisor to plan a course of study.

If taken prior to admission, the student must provide official documentation that knowledge of BIO150, BIO231, BIO232, BIO234, and BIO257 is seven (7) years old or less. If coursework is older than seven years, current knowledge may be demonstrated by taking a re-qualifying exam or by retaking the course. This seven-year or less science

requirement does not apply to LPN to RN students.

Nursing core courses must be taken in sequence; a minimum of four semesters for the RN program and a minimum of three semesters for the LPN to RN program and PN program.

The Associate Degree Nursing program is designed to prepare students to demonstrate competency in providing nursing care in a variety of health care settings and for employment as a registered nurse. The four semester program incorporates face to face and online coursework, labs, and clinicals to prepare the student to function as a member of the healthcare team. Students must meet all admission criteria prior to being admitted to the nursing program. After meeting admission criteria, students are given the first available seat in the nursing program. Policies regulating the nursing program are available in the *Student Nurse Handbook*.

## Nursing Division

### Career Outlook for RNs

Nationally, and in the State of Ohio, employment of Registered Nurses is expected to grow. The number of middle-aged and elderly people who need more health care services, is expected to rise rapidly. Home health care services will probably show the fastest growth area for Registered Nurses. Many people are choosing to stay home rather than go to a long-term care facility, and these individuals will need nurses highly skilled in doing complex tasks. Hospitals are the largest employers of Registered Nurses; however, with more patients recuperating at home, the largest future growth will probably be in outpatient care, especially in chemotherapy and rehabilitation.

### Career Outlook for LPNs

Employment of LPNs is projected to grow faster than average. Overall job prospects are expected to be very good, but job outlook varies by industry. The best job opportunities will occur in nursing care facilities and home health care services, while applicants for jobs in hospitals may face competition.

Employment of LPNs is expected to grow 22 percent between 2010 and 2020, faster than the average for all occupations, in response to the long-term care needs of an increasing elderly population and the general increase in demand for health care services.





## Registered Nursing (RN) Associate of Applied Science in Nursing

### Nursing Division

#### Application to the RN program

- Apply to Northwest State Community College
- Apply to RN program (separate application)
- Submit official high school and other college transcripts

#### Admission to the RN program

Admission criteria must be met in order to obtain a seat in the nursing program. After meeting admission criteria, students are given the first available seat in the clinical program.

#### Admission Criteria includes:

- High school graduate or GED
- GPA  $\geq 2.5$
- Test into college level math, reading and English per ACT or ACCUPLACER or take recommended courses
- High school biology and chemistry with labs with final grade of “B”, or “C” with ACT science of  $\geq 24$ , or equivalent college courses with “C” or better
- Computer and Keyboard proficiency through coursework or testing
- NLN preadmission exam (PAX) with a relative score (percentile)  $\geq 50$  on each of 3 sections
- Completion of the following college courses with a “C” grade or better:
  - ENG111 Composition I
  - PSY110 General Psychology
  - BIO231 Anatomy & Physiology I

Courses required for admission cannot be repeated for a satisfactory grade more than one time.

#### Upon Acceptance

The applicant must submit: Nursing Acceptance deposit fee (\$100.00) to hold a seat in the assigned clinical course.

Following acceptance into the program and prior to starting NRS141 clinical, students must meet health and immunization requirements and obtain CPR by taking either the American Heart Association or the American Red Cross CPR, professional level BLS, and be a state tested nursing assistant- STNA. A BCII criminal background check must be completed prior to beginning the program. A drug screen may be required by clinical agencies.

#### Program Learning Outcomes

1. Integrates knowledge from physical, biological, behavioral sciences and concepts for nursing practice to make sound judgments in the provision of safe, quality patient care for individuals, families, and groups.
2. Integrates the nursing process to maintain, restore, and promote health of patients by seeking creative approaches to problems and examining the evidence underlying clinical nursing practice.
3. Incorporates principles of communication and effective interpersonal relationships to provide holistic, patient-centered care for diverse patients of all ages.
4. Advocates for patients in the promotion of self-determination and ongoing growth as human beings in an ethical environment of dignity and respect.
5. Assumes responsibility for continued learning and growth in nursing practice and personal and professional development.
6. Accepts accountability and responsibility for nursing practice which is guided by the knowledge, skills and attitudes necessary to continually improve the quality and safety of patient care.
7. Summarizes the role of the associate degree nurse including use of technology to promote safe, quality care.
8. Applies concepts of leadership and management in utilizing human and material resources to promote the health of individuals, families, and groups.

## Registered Nursing (RN) Associate of Applied Science in Nursing

### Nursing Division

#### FALL SCHEDULE

<u>Pre-Requisite Courses</u>		<u>Credits</u>
ENG111	Composition I.....	3
BIO231	Anatomy & Physiology I.....	4
PSY110	General Psychology .....	<u>3</u>
		10
<u>Fall Semester</u>		<u>Credits</u>
+ NRS140	Professional Concepts I.....	1
+ NRS141	Health and Illness Concepts I.....	6
+ NRS144	Pharmacology.....	2
BIO232	Anatomy & Physiology II.....	<u>4</u>
		13
<u>Spring Semester</u>		<u>Credits</u>
+ NRS142	Professional Concepts II .....	1
+ NRS143	Health and Illness Concepts II .....	7
BIO234	Human Diseases .....	3
BIO131	Nutrition .....	<u>3</u>
		14
<u>Fall Semester</u>		<u>Credits</u>
+ NRS240	Professional Concepts III.....	1
+ NRS241	Health and Illness Concepts III.....	8
BIO257	Microbiology.....	4
PSY230	Human Growth and Development ..	<u>3</u>
		16
<u>Spring Semester</u>		<u>Credits</u>
+ NRS242	Professional Concepts IV.....	1
+ NRS243	Health and Illness Concepts IV.....	8
STA120	Introduction to Statistics .....	<u>3</u>
		12
<b>Total Program Hours</b>		<b>65</b>

#### SPRING SCHEDULE

<u>Pre-Requisite Courses</u>		<u>Credits</u>
ENG111	Composition I.....	3
BIO231	Anatomy & Physiology I.....	4
PSY110	General Psychology .....	<u>3</u>
		10
<u>Spring Semester</u>		<u>Credits</u>
+ NRS140	Professional Concepts I.....	1
+ NRS141	Health and Illness Concepts I.....	6
+ NRS144	Pharmacology.....	2
BIO232	Anatomy & Physiology II.....	<u>4</u>
		13
<u>Fall Semester</u>		<u>Credits</u>
+ NRS142	Professional Concepts II .....	1
+ NRS143	Health and Illness Concepts II .....	7
BIO234	Human Diseases .....	3
BIO131	Nutrition .....	<u>3</u>
		14
<u>Spring Semester</u>		<u>Credits</u>
+ NRS240	Professional Concepts III.....	1
+ NRS241	Health and Illness Concepts III.....	8
BIO257	Microbiology.....	4
PSY230	Human Growth and Development ..	<u>3</u>
		16
<u>Fall Semester</u>		<u>Credits</u>
+ NRS242	Professional Concepts IV.....	1
+ NRS243	Health and Illness Concepts IV.....	8
STA120	Introduction to Statistics .....	<u>3</u>
		12
<b>Total Program Hours</b>		<b>65</b>

#### Optional Nursing Electives:

NRS100	Nurse Aide
NRS105	Math for Nurses
NRS133	CPR
NRS150	End of Life Care

Clinical Component must be completed within three (3) years. Students must attain a minimum grade of “C” in all courses to progress in the program and graduate.

+ Refers to technical coursework.

## LPN to RN Advanced Standing Program (RN)

### Associate of Applied Science in Nursing

#### Nursing Division

This three semester program is designed to prepare the Licensed Practical Nurse for licensure as a Registered Nurse. The program incorporates face to face and online coursework, labs, and clinical to prepare the student to function as a member of the health care team. Students must meet all admission criteria prior to being admitted to the nursing program. Policies regulating the nursing program are available in the Student Nurse Handbook.

#### Application to LPN to RN Program

- Apply to Northwest State Community College
- Apply to LPN to RN program (separate application)
- Submit official high school and other college transcripts

#### Admission to the LPN to RN Advanced Standing Program

Admission criteria must be met in order to obtain a seat in the nursing program. After meeting admission criteria students are given the first available seat in the clinical program.

#### Admission criteria includes:

- LPN program certificate
- Practical Nursing License in the State of Ohio without restrictions
- GPA  $\geq 2.5$
- Test into college level math, reading and English per ACT or ACCUPLACER or take recommended courses
- High school chemistry with lab with a final grade of “B”, or “C” with ACT science score  $\geq 24$ , or equivalent college course with “C” or better
- NLN preadmission exam (PAX) with relative score (percentile)  $\geq 50$  on each of 3 sections
- Computer and keyboard proficiency through coursework or testing
- Completion of the following college courses or their equivalent, with a “C” grade or better
  - BIO231 Anatomy & Physiology I
  - BIO232 Anatomy & Physiology II
  - PSY230 Human Growth and Development
  - PSY110 General Psychology
  - ENG111 Composition I
  - BIO131 Nutrition
- Work experience of six months continuous nursing experience with minimum of 800 hours within past two years

Courses required for admission cannot be repeated for a satisfactory grade, more than one time.

#### Upon Acceptance

The applicant must submit: Nursing Acceptance deposit fee (\$100) to hold a seat in the assigned clinical course.

Following acceptance into the program, and prior to beginning NRS231 clinical students must meet health and immunization requirements and obtain CPR by taking either the American Heart Association or American Red Cross CPR, professional level BLS. A BCII criminal background check must be completed prior to beginning the program. A drug screen may be required by clinical agencies.

#### Program Learning Outcomes

1. Integrates knowledge from physical, biological, behavioral sciences and concepts for nursing practice to make sound judgments in the provision of safe, quality patient care for individuals, families, and groups.
2. Integrates the nursing process to maintain, restore, and promote health of patients by seeking creative approaches to problems and examining the evidence underlying clinical nursing practice.
3. Incorporates principles of communication and effective interpersonal relationships to provide holistic, patient-centered care for diverse patients of all ages.
4. Advocates for patients in the promotion of self-determination and ongoing growth as human beings in an ethical environment of dignity and respect.
5. Assumes responsibility for continued learning and growth in nursing practice and personal and professional development.
6. Accepts accountability and responsibility for nursing practice which is guided by the knowledge, skills and attitudes necessary to continually improve the quality and safety of patient care.
7. Summarizes the role of the associate degree nurse including use of technology to promote safe, quality care.
8. Applies concepts of leadership and management in utilizing human and material resources to promote the health of individuals, families, and groups.

# LPN to RN Advanced Standing Program Associate of Applied Science in Nursing

## Nursing Division

### ARCHBOLD

<u>Pre-Requisite Courses</u>		<u>Credits</u>
ENG111	Composition I.....	3
PSY110	General Psychology .....	3
BIO231	Anatomy & Physiology I .....	4
BIO131	Nutrition .....	3
PSY230	Human Growth & Development .....	3
BIO232	Anatomy & Physiology II .....	4
		20

<u>First Semester</u>		<u>Credits</u>
+ NRS230	Transition to Professional Concepts in Nursing .....	2
+ NRS231	Transition to Health & Illness Concepts .....	5
BIO234	Human Diseases .....	3
		10

<u>Second Semester</u>		<u>Credits</u>
+ NRS240	Professional Concepts III .....	1
+ NRS241	Health & Illness Concepts III .....	8
BIO257	Microbiology .....	4
		13

<u>Third Semester</u>		<u>Credits</u>
NRS242	Professional Concepts IV .....	1
+ NRS243	Health & Illness Concepts IV .....	8
STA120	Introduction to Statistics .....	3
		12

**Total Program Hours** **55**

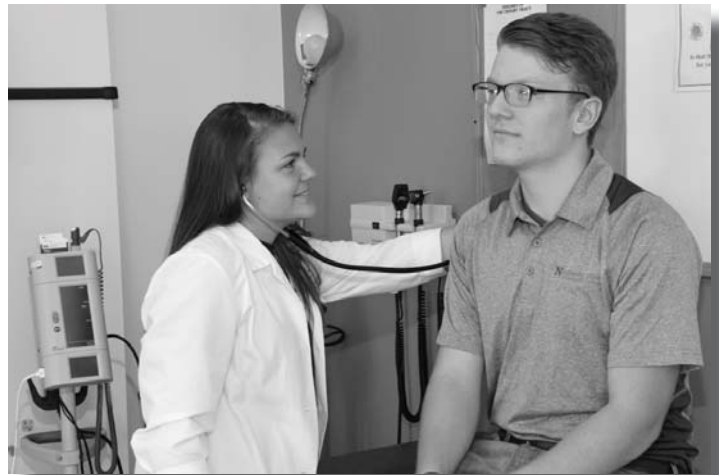
**Optional Nursing Electives:**

- NRS105 Math for Nurses
- NRS133 CPR
- NRS150 End of Life Care

Clinical component must be completed within five (5) semesters.

Students must attain a minimum grade of “C” in all courses to progress in the program and graduate.

+ Refers to technical coursework





## Practical Nursing (PN) Certificate

### Nursing Division

The Practical Nursing program is a one-year (12 month) certificate program designed to prepare students to demonstrate competency in providing nursing care in a variety of health care settings and for employment as licensed practical nurses. Students must meet all admission criteria prior to being admitted to the nursing program. Policies regulating the nursing program are available in the Student Nurse Handbook.

The PN program has been designed to facilitate articulation into the LPN to RN Advanced Standing Program. Instead of BIO150 The Human Body, students who are planning to articulate to the Advanced Standing Program may choose to take BIO231 Anatomy & Physiology I and BIO232 Anatomy & Physiology II. When the two semester sequence of A & P is chosen, BIO231 must be taken prior to entrance into the PN clinical courses.

#### Application to the PN Program

- Apply to Northwest State Community College
- Apply to PN Program (separate application)
- Submit official high school transcript and other college transcripts

#### Admission to The Practical Nursing Program

Admission criteria must be met in order to obtain a seat in the nursing program. After meeting admission criteria students are given the first available seat in the clinical program.

#### Admission criteria includes:

- High school graduate or GED
- GPA  $\geq 2.25$
- Test into college level English and reading per ACT or ACCUPLACER or take recommended courses
- Test out of MTH080 per ACT or ACCUPLACER or take recommended course work
- High school Biology and Chemistry with labs with a final grade of "C", or BIO101 or equivalent college course with "C" or better
- Computer and keyboard proficiency through coursework of testing

Courses required for admission cannot be repeated for a satisfactory grade more than one time.

#### Upon acceptance

The applicant must submit: Nursing Acceptance deposit fee (\$100.00) to hold a seat in the assigned clinical course.

Following acceptance into the program and prior to beginning PNE120 clinical, students must meet health and immunization requirements and obtain CPR by taking either the American Heart Association or the American Red Cross, CPR Professional Level BLS and be a state tested nursing assistant- STNA. A BCII criminal background check must be completed prior to beginning the program. A drug screen may be required by clinical agencies.

#### Program Learning Outcomes

1. Apply knowledge from the biological, physical, behavioral, and nursing sciences in providing individualized, safe, effective nursing care in structured, predictable settings.
2. Participate in the nursing process to provide individualized nursing care to patients across the life span and health continuum.
3. Utilize therapeutic communication and interpersonal skills with patients, families, colleagues, and other members of the health care team.
4. Provide nursing care which values the worth and dignity of each patient.
5. Practice within the role of the Practical Nurse according to established legal and ethical guidelines.
6. Demonstrate accountability for own nursing practice in all areas of the health care delivery system
7. Demonstrate responsibility for continued life-long learning and growth in nursing practice.

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

## Practical Nursing (PN) Certificate

### Nursing Division

#### FALL START COURSE SEQUENCE

<u>Fall Semester</u>		<u>Credits</u>
BIO150	The Human Body .....	4
	or	
BIO232*	Anatomy & Physiology II .....	4
ENG111	Composition I.....	3
+ PNE120	Essentials of Practical Nursing.....	8
PSY110	General Psychology .....	<u>3</u>
		18

<u>Spring Semester</u>		<u>Credits</u>
PSY230	Human Growth & Development .....	3
+ PNE119	Pharmacology.....	3
+ PNE121	Nursing Care of Mother and Newborn.....	2.5
+ PNE122	Nursing Care of the Child .....	2.5
+ PNE123	Nursing Care: Adults I .....	<u>4.5</u>
		15.5

<u>Summer Semester</u>		<u>Credits</u>
+ PNE124	Nursing Care: Adults II .....	5.5
BIO131	Nutrition .....	<u>3</u>
		8.5

**Total Program Hours** **42**

#### SPRING START COURSE SEQUENCE

<u>Spring Semester</u>		<u>Credits</u>
BIO150	The Human Body .....	4
	or	
BIO232*	Anatomy & Physiology II .....	4
ENG111	Composition I.....	3
+ PNE120	Essentials of Practical Nursing.....	8
PSY110	General Psychology .....	<u>3</u>
		18

<u>Summer Semester</u>		<u>Credits</u>
+ PNE117	Pharmacology I .....	1.5
+ PNE123	Nursing Care: Adults I .....	<u>4.5</u>
		6

<u>Fall Semester</u>		<u>Credits</u>
BIO131	Nutrition .....	3
PNE118	Pharmacology II .....	1.5
+ PNE121	Nursing Care of Mother and Newborn .....	2.5
+ PNE122	Nursing Care of the Child .....	2.5
+ PNE124	Nursing Care: Adults II .....	5.5
PSY230	Human Growth & Development .....	<u>3</u>
		18

**Total Program Hours** **42**

PNE117, PNE118 are the equivalent of PNE119.

Clinical Component must be completed within two (2) years.

Students must attain a minimum grade of “C” in all courses to progress in the program and to graduate.

\* Required for LPN to RN Advanced Standing program

Prerequisite for BIO232 is BIO231 in a preceding semester; equivalent of BIO101 - Principles of Biology or high school Biology and Chemistry with a “C” or better is required, CHM101 Principles of Chemistry strongly recommended.

+ Refers to technical coursework

#### Optional Nursing Electives:

NRS100	Nurse Aide
NRS105	Math for Nurses
NRS133	CPR
NRS150	End of Life Care
PNE105	Effective Communication

## Associate of Technical Studies & Associate of Individualized Studies



You've spent your life learning.

Now earn credit for it at NSCC!

Many students come to NSCC with a wealth of education and training that they earned through their work and life experiences. With the Associate of Individualized Studies and the Associate of Technical Studies degrees, students have the opportunity to turn that experience into credits.

With the AIS and ATS degrees, students can earn credit for

- Workforce or Military Experience
- Professional Licenses and Certification
- Prior Educational Experience

For more information on how to get started at NSCC, contact the Admissions Office at 419.267.1320 or [admissions@NorthwestState.edu](mailto:admissions@NorthwestState.edu).



TECHNICAL  
STUDIES &  
INDIVIDUALIZED  
STUDIES





## Associate of Individualized Studies

The Associate of Individualized Studies Degree program provides the student an opportunity to develop a tailor-made program of instruction which may include already learned skills, life experiences, and course credits from appropriate professional, personal, and career experiences. Such program needs may not necessarily fit into traditional program offerings.

### Admission Requirements

Admission requirements will adhere to the full requirement of the College. Upon application, the student will be advised and counseled in a program which matches the student's interest and aptitude in so far as possible. High school records, equivalency exams, and Course Placement Test scores will be evaluated.

Students may apply for the AIS program by presenting their intent to the Dean of Arts & Sciences, who will assist them in planning an individualized program of study. The program may be denied if:

1. Standards are not comparable to other technologies offered at Northwest State Community College.
2. The proposed AIS program duplicates an existing technology offered at Northwest State Community College.

For cases in which the College does not offer courses needed to fulfill the degree requirements, cooperative arrangements may be entered into with approved public and private colleges, as well as accredited correspondence schools, vocational centers, and schools conducted by business and industry. Transfer credits, credits by examination, or credit by any other acceptable method in current use at NSCC may be granted.

### Graduation Requirements

Courses designed through individualized studies may be substituted for specific course requirements with the approval of the Dean of Arts & Sciences. In all cases, the AIS Degree must meet the following minimum expectations:

### Counseling Procedure

A student interested in pursuing the Associate of Individualized Study Degree will begin the application procedure by first being directed to the Dean of Arts & Sciences for tentative program approval.

Students who plan to use life experiences or other non-collegiate work as part of their AIS degree must enroll in course AIS101 Portfolio Development.

### English and Language:

6 credit hours required

ENG111 Composition I	3 hr. ("C" or better)
ENG112 Composition II	3 hr.

### Humanities:

15 credit hours required

- At least 3 hours - (other than ENG230) - from ENG prefix
- Coursework from at least 3 different prefix categories within the humanities: ART, HUM, PHI
- No more than 6 hours in the applied arts (ART prefix courses)

### Social & Behavioral Sciences:

15 credit hours required

- Coursework from at least 2 different prefix categories within the Social & Behavioral Sciences: ECO, GEO, PSY, SSC

### Mathematics & Science:

10 credit hours required

- Demonstrated proficiency at MTH090 Intermediate Algebra level
- STA120 Introduction to Statistics 3 hr.
- Coursework from at least 2 different prefix categories within Mathematics and Science: BIO, CHM, PHY, MTH
- At least one course must be a lab course

### Computer Literacy:

3 credit hours required

- Selected from approved list

### Electives:

11 credit hours required

- May be selected from available college credit classes at the 100 and 200 level
- May be independent study/work experiences as described below Total 60 hr. Minimum Independent study/work experiences:
- Must be under the supervision of NSCC faculty and subject to approval of Arts & Sciences Division.
- Must be of collegiate level of academic rigor, work expectations, and appropriate written documentation.
- May be used to meet required hours in Humanities, Social & Behavioral Sciences, or Mathematics & Science if subject matter is appropriate and approval is obtained.
- May be used to meet required elective hours.
- Independent study/work hours should be chosen and designed to transfer in an appropriate fashion to a 4-year college or university.
- Minimum of 2.00 grade point average overall.
- A minimum of 30 semester credit hours of supervised coursework after acceptance into the AIS program.
- Must earn at least 12 of the final 30 credit hours from NSCC.
- A maximum of 12 semester credit hours can be earned through portfolio assessment.

## Associate of Technical Studies

The Associate of Technical Studies Degree program provides the student an opportunity to develop a tailor-made program of instruction which may include already learned skills, life experiences, and course credits from appropriate trade schools, colleges, and universities. Such program needs may not necessarily fit into traditional program offerings.

### Admission Requirements

Admission requirements will adhere to the full requirements of the College. Upon application, the student will be advised and counseled in a program which matches the student's interest and aptitude in so far as possible. High school records, equivalency exams, and Course Placement Test scores will be evaluated. Students may apply for the ATS program by presenting their intent to the appropriate Division Dean or Department Chair, who will assist them in planning an individualized program of study. The program may be denied if:

1. Standards are not comparable to other technologies offered at Northwest State Community College.
2. The proposed ATS program duplicates an existing technology offered at Northwest State Community College. For cases in which the College does not offer technical courses needed to fulfill the degree requirements, cooperative arrangements may be entered into with approved public and private colleges, as well as accredited correspondence schools, vocational centers, and schools conducted by business and industry. Transfer credits, credits by examination, or credit by any other acceptable method in current use at NSCC may be granted.

### Graduation Requirements

Graduation requirements for the ATS program will adhere to the same requirements of any technical program at NSCC.

1. Minimum of 60 semester credit hours of coursework, total credits may not exceed 65 credit hours. The course of study must have approval from the Division Dean, Vice President for Academics, and placed on file in the Registrars' Office.
2. Eighteen credit hours in NSCC General Education Core Courses:
 

Composition I	3
Composition II	3
Humanities Elective	3
Math Elective	3
Science Elective	3
Social Behavioral Science	3
3. Minimum of twelve credit hours in general education/non-technical courses.
4. Minimum of 30 credit hours in technical studies of which 15 are to be concentrated in a single discipline. (This is the area of study where ATS students will have the greatest input to define their occupational goals.)
5. Minimum of 2.00 grade point average overall.
6. Portfolio coursework may not exceed 24 percent of the total credit hours.
7. A minimum of 30 percent of coursework must be completed at NSCC.

*Students wishing to pursue an Associate of Technical Studies (ATS) degree must have their ATS degree program approved by an Academic Dean, Academic Vice-President, and placed on file in the Registrars' Office prior to completing 15 credit hours*

# Career Technical Education

## Associate of Technical Study (University of Toledo)

### Degree Requirement for Route B Career-Technical Licenses

The Route B Career-Technical program is for career and technical teachers who do not have a degree in their field, or who have a degree in their field, but do not have a degree in education. Teachers completing the program are eligible to apply for a standard teaching license valid for teaching students age eight and beyond in any chartered school in Ohio.

This program consists of 27-30 semester hours of coursework at the University of Toledo or another institution. Enrollment in the licensure program must be initiated by the hiring school district, and applicants are required to have work experience in their field. New teachers hired in the summer take a three week licensure clinic before teaching begins, and are then monitored by a teacher educator during their first year of teaching.

To renew the provisional license, 27-30 semester hours of coursework must be completed, and teachers will complete the entry year and Praxis III during their third year of teaching. All requirements must be completed by the end of the fourth year in order to be eligible for the five year professional license.

The second renewal of the professional career-technical license obtained pursuant to the provisions in paragraph (D)(7) of rule 3301-24-05 of the Administrative Code shall require completion of a degree applicable to the career field, classroom teaching, or an area of licensure.

The Associate of Technical Studies in Career Technical Education will offer a pathway for students who take the 27-30 technical hours from a four year institution to end with an Associate's Degree in Career and Technical Education that the four year university might not offer. This will allow them to meet the mandatory licensure requirements.

**For more information, contact:**

**Northwest State Community College**  
 Admissions Office  
 admissions@NorthwestState.edu  
 (419) 267-1320

**The University of Toledo**  
 Paul Hubaker, Director  
 Career and Technical Education  
 paul.hubaker@utoledo.edu  
 (419) 530-7291

### Earn your Career-Technical License at The University of Toledo...

<u>Course</u>	<u>Credits</u>
CTE 3010 UG Teaching Occup Skills	3
CTE 3020 UG Teaching Occup Knowledge	3
CTE 3030 UG Methods Teaching CTE I	2
CTE 4930 UG Supervised Teaching	4
CTE 3040 UG Methods Teaching CTE II	2
CTE 4930 UG Supervised Teaching	4
CI 4980 UG Content Reading: Career-Technical Education	3
CTE 3100 UG Curriculum Const in CTE	3
CTE 3910 UG Seminar for CTE Teachers	<u>3</u>
	27

### ...And finish your Associate Degree at Northwest State

<u>Course</u>	<u>Credits</u>
Transfer Credits	
Earned at UT.....	27-30
<b>General Studies Core</b> (See page 31)	
ENG111 Composition I.....	3
ENG112 Composition II.....	3
Social Behavioral Science	
Elective .....	3
Humanities Elective.....	3
General Studies Elective.....	<u>3</u>
	15

<u>Supporting Coursework</u>	<u>Credits</u>
Select 3 courses from the following areas:.....	9-15
Any course with a prefix of:	
*No more than 1 from each course prefix	
ACC, BUS, MGT, MKT, STA, VCT	
Computer Selection: Choose 2 courses	
CIS112, CIS113, CIS114.....	6-9
	15-18

**Minimum Total Credit Hours..... 60**

*May require an additional course from above to meet the minimum total 60 credit hours.*

***Students wishing to pursue an Associate of Technical Studies (ATS) degree must have their ATS degree program approved by an Academic Dean, Academic Vice-President, and placed on file in the Registrar's Office prior to completing 15 credit hours***

## Career Technical Education

### Associate of Technical Study Crop and Soil Management

#### Degree Description and Current Requirements

The ATS in Crop and Soil Management is a degree that is tailored to meet the needs of students desiring to enter crop farming, farm management and supporting occupations in the fertilizer, chemical, and grain industries. A core component of this degree is the emphasis on current and emergent business skills. Graduates will be well-prepared to compete in the agricultural industry throughout Ohio and beyond.

**Special Note:** As of the publication date of this catalog, some of the details of this degree are still being confirmed. Please contact the Allied Health, Business, and Public Services Division at Northwest State for the most current information and plan of study.

#### Crop and Soil Management ... Offered in partnership with The Ohio State University Agricultural Technical Institute

##### Northwest State Community College Led Coursework:

English 111	English 112
Humanities	Microsoft Applications
College Algebra	Business Management
Chemistry	Marketing
Financial Accounting	Entrepreneurship
Managerial Accounting	Microeconomics
	Business Law

##### OSU Agricultural Technical Institute Led Coursework

Introduction to Soil Science  
Soil Fertility and Fertilizers  
Grain and Oilseed Crops  
Principles of Weed Control  
Introduction to Rural Sociology  
Botany with Applications  
Practicum in Crop and Soil Technologies

*Minimum Total Credit Hours*

**60**

#### For more information, contact:

##### Northwest State Community College

Admissions Office  
admissions@northweststate.edu  
(419) 267-1320

##### Northwest State Community College

Allied Health Business, and Public Services Division  
(419) 267-1258

**Students wishing to pursue an Associate of Technical Studies (ATS) degree must have their ATS degree program approved by an Academic Dean, Academic Vice-President, and placed on file in the Registrar's Office prior to completing 15 credit hours**



You are  
never too old  
to set another goal  
or to  
dream a new dream.

- C.S. Lewis



# SHORT-TERM TECHNICAL CERTIFICATES

Contact: Ron Scozzari

419.267.1429

[rscozzari@northweststate.edu](mailto:rscozzari@northweststate.edu)



## CNC Operations Certificate (Short-Term Technical Certificate)

The Computer Numerical Control (CNC) Operations program focuses on the operation and setup of production CNC equipment. Students in this program will develop their skills in machining processes, including operation of the drill press, lathe, vertical and horizontal milling machine, surface grinder, CNC vertical machining center and turning center. Students learn the basics of transforming raw material into finished parts in a production environment.

### Career Outlook

Contact with several regional machine shops has indicated a strong desire to bring jobs back which had been outsourced. Additionally, area industries have both expressed need for and provided input on training content making up the CNC Operations certificate program.

### Program Learning Outcomes

1. Demonstrate the safe use of electric and manual hand tools.
2. Analyze technical data.
3. Set-up and operate manual machine tools including the mill, lathe, drill press, band saw, surface grinder and hand tools.
4. Set-up and operate CNC vertical milling machine.
5. Set-up and operate CNC metal machining lathe.
6. Interpret the 2D and 3D mechanical prints used in Machining.
7. Create a CNC program from a machine sequence pattern.
8. Weld various metals used in molds and fixtures.
9. Write part programs for CNC machine tools.
10. Demonstrate the ability to interpret and apply technical information from mechanical blueprints.
11. Measure machined parts with manual and automated measuring devices.

### First Semester

		<u>Credits</u>
+	IND 103 Applied Geometry & Trig .....	3
+	IND 132 Benchwork .....	2
+	RTI 121 Shop Graphics - Blueprint Reading	3
+	IND 140 Principles of Machining .....	3
+	IND 240 Machining Processes II .....	<u>3</u>
		14

### Second Semester

		<u>Credits</u>
+	IND 241 Tooling & Fixtures.....	3
+	MET222 Programming of Computer Numerical Control .....	3
+	WLD 110 Introduction to Applied Welding Tech .....	3
+	IND 250 CNC Operations Capstone Project ..	3
+	RTI 290 Special Topics .....	<u>2</u>
		14

### Total Program Hours

**28**

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

- + Refers to technical course work. Students must maintain a minimum grade of "C" in these courses to progress in the program and graduate.

## IT Specialist (Short-Term Technical Certificate)

The IT Specialist short-term certificate program develops skills in database management and reporting as well as foundations of computer programming. Students will work with industry-recognized databases (such as Oracle) and related tools for pulling data (SQL). Students will also develop skills with object-oriented programming languages that will enable them to create both windows- and web-based solutions for end-users.

### Career Outlook

Increased financial regulations, privacy rules and security guidelines are causing more companies to handle data analysis and processing within national markets. But with the high cost of information technology service in larger urban areas, provider companies are being drawn to less populated locales, prompting the demand for highly-trained employees living in these areas. The market is eager for a local option in the IT outsourcing sector for data report writing, electronic forms development and applications development.

<u>Course</u>	<u>Credits</u>
+ DBP110 ICDL Computer Technologies .....	1
+ DBP130 IT Customer Service and Communication .....	2
+ DBP150 Database Basics.....	3
+ DBP205 Discrete Structures Applications.....	3
+ DBP210 Computer Programming I .....	3
+ DBP220 Database Reporting .....	3
+ DBP225 Computer Programming II .....	3
+ CIS195 Networking Essentials.....	<u>3</u>
	21

**Total Program Hours** **21**

### Program Learning Outcomes

1. Use the applications found in the Microsoft Office suite and apply them in a business setting.
2. Develop data analysis and project management skills and be able to apply them in a business setting.
3. Utilize structured programming concepts to develop applications using programming languages such as VBA, VB, and C#, to meet end user requirements.
4. Identify basic networking infrastructure components and list items that comprise a secure network.
5. Set up a basic webpage with HTML/CSS technology.
6. Utilize a Relational Database Management System and be able to query data from various databases (Access, Oracle, SQL).
7. Present database data in a user friendly format using reporting and dashboarding tools.
8. Develop communication skills for both technician-to-technician as well as technician-to-end user interactions.

### Admission Requirements for the Program:

- Basic computer application literacy. Be able to pass 4-part diagnostic exam on Concepts of Information and Communication Technology, Using the Computer and Managing Files, Databases/Access and Spreadsheets/Excel.
- ACCUPLACER testing. Complete any developmental courses needed.
- Course placement Algebra score at the MTH080 level or successful completion of MTH080.
- GPA 2.0 or higher.

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

+ Refers to technical course work. Students must maintain a minimum grade of “C” in these courses to progress in the program and graduate.



## Industrial Welding (Short-Term Technical Certificate)

This welding program provides the students with the technical skills and knowledge to work in the industrial welding field. Such positions as Welder/Fabricator, Production Welder, Millwright, Welding Technician and Welder/Pipe Fitter all utilize multiple welding and fabricating skills. Students are trained in many welding processes which include Shield Metal Arc Welding, Gas Metal Arc Welding, Gas Tungsten Arc Welding, Flux Core Arc Welding, Oxy Fuel Gas Welding /Cutting and Plasma Arc Cutting. Various kinds of metals and thicknesses will be used including mild steel, aluminum and stainless steel. Graduates are eligible to take the American Welding Society certification tests.

### Career Outlook

Welding is a career choice that is in high demand. It offers you the flexibility to switch industries without changing careers. With the increase of manufacturing, the building and repairing of major infrastructure, nuclear power plants, windmills, or drilling of oil, welding has endless opportunities that keep fueling the demand for this skilled technology.

### Program Learning Outcomes

1. Demonstrate safe workplace practices by identifying potential hazards.
2. Accurately follow shop drawings and demonstrate describing, recognizing, and interpreting weld symbols to complete weld jobs.
3. Fabricate and assemble a given project according to prints and within specified tolerances.
4. Identify and demonstrate basic welding terminology and safety in the workplace.
5. Demonstrate accurate working knowledge of GMAW, GTAW, and SMAW welding principles and practices.
6. Demonstrate proper and safe operation of related cutting/beveling equipment
7. Correct and safe setup and shut down of all welding machines and torch equipment
8. Demonstrate proper selection of appropriate electrode, polarity, amperage setting, and electrode manipulation for each specific application.

<u>First Semester</u>			<u>Credits</u>
+	WLD 100	Blue Print Reading and Welding Symbols	2
+	WLD 110	Introduction of Applied Welding Techniques	3
+	WLD 120	Gas Metal Arc Welding	3
			8
<u>Second Semester</u>			<u>Credits</u>
+	WLD 130	Flat & Horizontal Shield Metal Arc Welding	3
+	WLD 140	Gas Tungsten Arc Welding	3
+	WLD 150	Advance Gas Metal Arc Welding	3
			9

**Total Program Hours** **17**

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

- + Refers to technical course work. Students must maintain a minimum grade of "C" in these courses to progress in the program and graduate.

## Industrial Automation Maintenance Certificate (Short-Term Technical Certificate)

The Industrial Automation Maintenance program focuses on the maintenance of electrical, mechanical and fluid power equipment. Students of this program will develop their skills in maintenance and troubleshooting of electrical, pneumatic, mechanical, programmable logic controllers, variable frequency drives and more.

### Career Outlook

Many manufacturing companies across the country no longer employ segregated trades (electrician, millwright, machinist, etc.) Instead, they are moving to a multi-craft classification that will perform electrical, mechanics, machining, welding, etc. Therefore, positions for general maintenance and industrial maintenance are currently in great demand.

### Program Learning Outcomes

1. Install, maintain and troubleshoot industrial electrical systems.
2. Analyze technical data.
3. Install, maintain and troubleshoot electric motors and transformers.
4. Fabricate and weld structural components.
5. Install, maintain and troubleshoot a fluid power system.
6. Install and maintain industrial plumbing and piping components & systems.
7. Install, maintain and troubleshoot Programmable Logic Controller systems.
8. Troubleshoot servo and robotic systems.
9. Troubleshoot mechanical system components.

<u>First Semester</u>		<u>Credits</u>
+	IND 120 Industrial Electricity I .....	3
+	IND 121 Industrial Electricity II .....	3
+	WLD 110 Introduction to Applied Welding Tech.....	3
+	IND 132 Benchwork .....	2
+	IND 131 Industrial Pipefitting.....	<u>3</u>
		14

<u>Second Semester</u>		<u>Credits</u>
+	IND 223 Motors & Controls .....	3
+	IND 134 Industrial Fluid Power.....	3
+	PLC 200 Programmable Controller I .....	3
+	PLC 230 Servo and Robots .....	3
+	IND 232 Machine Repair .....	<u>3</u>
		15

***Total Program Hours*** **29**

*Gainful employment information for NSCC's certificate programs can be found online at [NorthwestState.edu/GainfulEmployment](http://NorthwestState.edu/GainfulEmployment). Gainful employment information includes: estimated cost of the program, average student loan debt and types of jobs available.*

+ Refers to technical course work. Students must maintain a minimum grade of “C” in these courses to progress in the program and graduate.

This section of the catalog is arranged in alphanumeric order. In general, the following list may be used to find the courses offered within each technology:

ACC	Accounting
AET	Alternative Energy
ANT	Anthropology
ART	Art
ATS	Associate of Technical Studies
BAN	Banking and Finance
BIO	Biological Sciences (Biology, A & P, etc.)
BUS	Business
CAD	Computer Aided Design
CET	Construction Engineering Technology
CHM	Chemistry
CIS	Computer and Information Systems
CJT	Criminal Justice
DBP	Database Processing
ECD	Early Childhood
ECO	Economics
EDP	Paraprofessional
EDU	Education
EET	Electrical Engineering Technologies
EMS	Emergency Medical Services
ENG	Communications (Composition, Speech, Literature)
ETC	Electrical Trades Construction
FRA	Forensic Accounting
GEO	Geography
GSD	General Studies
HIS	History
HPF	Beginning Western/English Horsemanship
HST	Human Services
HUM	Humanities
IET	Industrial Engineering Tech
IND	Industry
INT	Industrial Technology
ITR	Industrial Training
JAT	IBEW
MEA	Medical Assisting
MET	Mechanical Engineering Technologies
MGT	Management
MKT	Marketing
MTH	Mathematics
MUS	Music
NRS	Associate Degree Nursing
OAS	Office Administrative Services
PAR	Paralegal
PET	Plastics Engineering Technology
PHI	Philosophy, Ethics, Logic, Religions
PHY	Physics
PLC	Programmable Logic Controllers
PNE	Practical Nursing Program
PSY	Psychology
QCT	Quality Control Technology
REA	Real Estate
RTI	Related Trades Instruction
SPN	Spanish
SCM	Supply Chain Management
SSC	Social Sciences (Sociology, Political Science, etc.)
STA	Statistics
TRN	Transportation
VCT	Visual Communications
WLD	Welding Technology

*The College reserves the right to change courses as needed. Course description and prerequisites are effective for the academic year(s) of this catalog.*

The parentheses at the end of each course description indicate the lecture and lab hours respectively. Example: (3+1) indicates a course with 3 lecture hours and 1 lab hour.

**Developmental classes have numbers below 100, and are graded Satisfactory/Unsatisfactory. These courses DO NOT meet course requirements for graduation.**

**ACC090 Introduction to Accounting 3 Cr. Hrs.**  
This course is designed for students who have had no previous accounting instruction or for those desiring an introductory course before beginning the accounting sequence. This course covers accounting terminology, financial statement concepts, intensive drills on debits/credits, and a brief overview of the accounting cycle.  
(3+0)

**ACC111 Financial Accounting 3 Cr. Hrs.**  
The course includes a study of the accounting cycle beginning with the business transaction and ending with the preparation of financial statements along with other period end procedures for both sole proprietors as well as corporations. Other topics include: receivables, inventory, depreciation, liabilities, investments, and stock. Transfer Assurance Guide (TAG) approved effective spring 2017 (OBU010 - Introduction to Financial Accounting).  
(3+0)

**ACC112 Managerial Accounting 3 Cr. Hrs.**  
This course begins with the Statement of Cash Flows and then focuses on managerial topics. These areas of study include: job order and process costing, activity based costing, cost behavior and cost-volume-profit analysis, budgeting, variance analysis, evaluation for decentralized operations, differential analysis, and product pricing, and capital investment analysis. Transfer Assurance Guide (TAG) approved effective spring 2017 (OBU011 - Introduction to Managerial Accounting).  
(3+0)  
Prerequisite: ACC111 with a "C" or better

**ACC120 Payroll Accounting 3 Cr. Hrs.**  
This course includes the various phases of the Social Security Act, unemployment compensation, and federal withholding tax, with considerable emphasis on the study of timekeeping systems and systems of accounting used in keeping payroll and wage records. Students complete the necessary federal and state tax reports and apply payroll accounting concepts to microcomputer applications.  
(3+0)  
Co-requisite: ACC090 or OAS103 or ACC111

**ACC140 Individual Income Tax Accounting 3 Cr. Hrs.**  
Major emphasis is on individual income tax laws and regulations. The course is designed to have both a personal and vocational value, covering tax return preparation, tax planning, and research.  
(3+0)

**ACC211 Intermediate Accounting I 3 Cr. Hrs.**

This course is a review and expansion of concepts learned in accounting principles. Topics studied are the accounting cycle, financial statements, revenue recognition, cash, receivables, and inventories.

(3+0)

Prerequisite: ACC112 with grade of "C" or better

**ACC212 Intermediate Accounting II 3 Cr. Hrs.**

This course is a continuation of Intermediate Accounting I. Subject matter includes: debt and equity financing, noncurrent assets, long term investments, income tax allocation, employee compensation, and additional disclosures.

(3+0)

Prerequisite: ACC211

**ACC221 Cost Accounting I 3 Cr. Hrs.**

This course teaches determination of product costs using different cost systems: primarily job order costing and process costing. Additional topics include: cost estimation, cost-volume-profit analysis, activity-based budgeting, standard costing, operational performance measures, flexible budgeting, and management of overhead activity costs.

(3+0)

Prerequisite: ACC112 with a grade of "C" or better

**ACC222 Cost Accounting II 3 Cr. Hrs.**

This course is a continuation of Cost Accounting I. Topics studied are activity-based costing and management, responsibility accounting, investment centers, transfer pricing, relevant costs and benefits in decision making, cost analysis for pricing decisions, capital expenditure decisions, absorption costing, variable costing, and allocation of support activity costs and joint costs.

(3+0)

Prerequisite: ACC221

**ACC230 Auditing 3 Cr. Hrs.**

This is a study of theories, procedures, and practices employed in audits. The course includes studies on auditor's reports, internal control procedures, tests, and generally accepted auditing standards used in the profession.

(3+0)

Prerequisite: ACC112

**ACC240 Business Income Tax Accounting 3 Cr. Hrs.**

This course teaches fundamentals of federal taxation in relation to business forms and rules. Studies include preparation of partnership, subchapter "S", and corporation returns with related income tax forms.

(3+0)

**ACC260 Accounting on Computers 3 Cr. Hrs.**

This course is a combination of ACC261 QuickBooks, ACC271 Intermediate QuickBooks, and ACC272 Advanced QuickBooks and allows the student to extensively study the QuickBooks software. Information will be processed in most of the areas of accounting in business. Many of the topics covered in financial and managerial accounting courses will be converted into a computerized accounting system. The course employs the case study method of teaching and learning and emphasis is placed upon hands-on practice in class and on assignments.

(3+0)

Prerequisite: ACC102 or ACC111

**ACC291 Accounting Internship 3 Cr. Hrs.**

This course is a job-related accounting experience in which the student works for a department within the college, a business, or an industrial organization. The student is chosen for this course on the basis of academic progress or job experience. Enrollment only with instructor permission.

(1+20)

**AET100 Intro to Alternative Energies 3 Cr. Hrs.**

In this course the student will learn the units of energy, how it is measured, and what our current usage is. Students will determine their current energy usage. They will then be introduced to several alternative energy sources including solar, wind, biomass, hydrogen, fuel cells, and others. As these topics are introduced, students will gain an understanding of these energy sources, applications, and the ability to determine their potential for sustainable energy. The course ends with the development of a plan to create a sustainable energy program for them. These topics will be learned through text, presentations, various exercises, and hands on labs.

(3+0)

Prerequisites: MTH080

**AET110 Energy Audit 3 Cr. Hrs.**

In this course the student will learn to conduct an effective and informative energy audit of various facilities for client or individual use. The student will learn sources, and extent, of energy usage in various facilities including residential, commercial, and industrial. Along with energy users, the operations, processes, and management of facilities will also be looked at. This material will be covered through various exercises, lecture and lab segments.

(3+0)

Co-requisites: AET100 and IND120 or EET121

**AET120 Wind Power 4 Cr. Hrs.**

In this course the student will learn how energy can be captured from wind and converted into electrical energy for commercial or residential use. The student will learn the various wind sources and energy potential of wind in a given area. The types, components, construction, and basic installation of various wind turbines will be studied. They will also learn different techniques and equipment used for monitoring the energy produced from the turbines. This material will be covered through both lecture and lab segments.

(3+2)

Prerequisites: AET100 and IND120 or EET121



**AET130 Solar Thermal 4 Cr. Hrs.**

In this course the student will learn how energy can be captured from the sun and converted into heat energy for air or water in a residential setting. The student will learn about the solar energy balance of the planet and the thermal comfort potential of solar radiation. Solar insolation and what determines its rate will be covered. The types, components, construction, and basic installation of various solar thermal configurations will be discussed. They will also learn different techniques and equipment used for monitoring the energy produced from solar collectors. This material will be covered through both lecture and lab segments. AET110 Energy Audit is recommended prior to or in addition to this class.

(3+2)

Prerequisites: AET100 and IND120 or EET121

**AET140 Geothermal 4 Cr. Hrs.**

In this course the student will learn the basic concepts of geothermal energy production. The course will introduce the concept and applications of acquiring energy from the Earth's core through steam powered generators for large scale electricity generation. This will be followed by the study of commercial and residential heat pumps. The student will learn how heat transfer with the ground is utilized to reduce energy consumption in both heating and cooling. The various types of heat pumps and types of wells will be discussed. This material will be covered through both lecture and lab segments. AET110 Energy Audit is recommended prior to or in addition to this class.

(3+2)

Prerequisite: AET100

**AET200 Sustainable Building Design 3 Cr. Hrs.**

In this course the student will learn how to evaluate a site for the most efficient use of energy. The student will evaluate the building site for available energy sources. The student will evaluate current and new building constructions for energy efficiency and utilization of current energy sources. The student will utilize applicable data and software to determine improvements to existing construction or to design new energy efficient sustainable building structures.

(3+0)

Prerequisite: AET110

**AET220 Solar Photovoltaics 4 Cr. Hrs.**

This course is a continuation, and more advanced study of Solar Energy. In this course the student will review how energy can be captured from the sun and converted into electrical energy for commercial or residential use. The student will learn the process of solar photovoltaic materials. The materials, types, components, construction, and basic installation of various photovoltaic cells will be discussed. They will also learn different techniques and equipment used for monitoring the energy produced from photovoltaic cells. Finally, new technologies in this area will be discussed. This material will be covered through both lecture and lab segments.

(3+2)

Prerequisites: AET100 and IND120 or EET121

**AET230 Hydrogen and Fuel Cell Technology 4 Cr. Hrs.**

In this course the student will learn what hydrogen is and its potential use as an energy carrier. The production, transportation, storage, and economics of hydrogen will be discussed. Basic thermodynamics and electrochemical cell construction will be studied. With this the student will then learn the basic fuel cell construction. Variations and materials used in fuel cell construction will be covered along with various applications for fuel cells. This material will be covered through both lecture and lab segments.

(3+2)

Prerequisites: AET100 and CHM201

**AET240 Biofuels 4 Cr. Hrs.**

In this course the student will learn different sources of biomass and the relative energy potential of these fuel sources. The student will learn the processes that are required to convert biomass to fuels such as biodiesel, ethanol, and others. The course also will look at energy potential from directly burning biomass as an energy source such as wood and grains. The determination of energy per mass will be covered to use for comparison of different materials. This material will be covered through both lecture and lab segments.

Prerequisites: AET100 and CHM201

**AET290 Alternative Energy Capstone 4 Cr. Hrs.**

In this course the student will have the opportunity to apply the knowledge gained through the AET program to relevant scenarios. Specific content may vary with each offering and will be related to the specific Alternative Energy program and electives chosen through the program.

(4+0)

Prerequisites: AET110, and at least one other course with AET prefix

**ART103 Beginning Drawing 3 Cr. Hrs.**

A basic drawing class facilitating students' abilities to see objects rationally, developing expressive drawing skills using various approaches and a wide variety of graphic media. Transfer Assurance Guide (TAG) approved effective summer 2008 (OAH001 - Basic Drawing).

(0+6)

**ART210 Oil/Acrylic Painting 3 Cr. Hrs.**

An introductory painting class emphasizing building stretcher frames, preparing painting surfaces, using oil/acrylic media, using color, and framing.

Transfer Assurance Guide (TAG) approved effective fall 2005 (OAH048 - Painting)

(0+6)

**ART220 Beginning Sculpture 3 Cr. Hrs.**

A basic level studio sculpture course facilitating students' ability to see and create three dimensional works of art. In this introductory class, clay, placticine, found objects, and soapstone are used in creating manipulative, subtractive, and additive method sculptures, following examination of historical works and the guiding principles of design behind creation of sculpture. Transfer Assurance Guide (TAG) approved effective fall 2011 (OAH047 - Sculpture)

(0+6)

**ATS101 Portfolio Development 3 Cr. Hrs.**

This course is designed for the student interested in developing a portfolio for submission and review for college credit. The student will work with his/her advisor in the development of the portfolio.

(3+0) On demand with approval of the appropriate Dean.

**BAN110 Bank Management 3 Cr. Hrs.**

A study of the commercial banking industry and the interrelationships between the various types of financial institutions. Special emphasis is given to branch banking, bank financial statements, methods of evaluating bank performance, lending policies, and the management of deposit liabilities and loan assets. The regulatory environment receives significant emphasis throughout.

(3+0)

**BAN210 Credit Management 3 Cr. Hrs.**

An examination of the concept of credit with particular emphasis given to the process of credit management for both consumers and businesses. Also explored are the processes of granting and reviewing credit, collection practices, as well as the examination of financial statements leading to the credit decision. Dun and Bradstreet's business services, as well as those of the major consumer credit organizations, receive in-depth treatment.

(3+0)

**BAN220 Investment Management 3 Cr. Hrs.**

A study of the types of investment vehicles available to the individual investor or business investment officer. The major emphasis of study is on various types of stocks and bonds, but convertibles, options, futures, commodities, and mutual funds are also studied. In addition, several special concepts receive emphasis, such as strategies associated with margin accounts and short-selling. Valuation of the firm and related financial analysis also receive appropriate treatment. Algebra proficiency is recommended.

(3+0)

**BIO100 The World of Science 3 Cr. Hrs.**

For non-science majors, assuming no background knowledge. Students will learn to scrutinize and assess critically scientific information, historical and current, from popular information outlets. This is a science appreciation course (same as CHM100, PHY100). Course projects will be based on the course prefix chosen.

(3+0)

**BIO101 Principles of Biology 4 Cr. Hrs.**

An introduction to principles and concepts of life, including topics on cell biology, genetics, diversity of life, and ecology. Laboratory work reinforces lecture.

(3+2)

Prerequisites: MTH079 or MTH080 and ENG080

**BIO115 Ecology 4 Cr. Hrs.**

An introduction to the field of ecology, including the organization, interrelationships and dynamic of populations, communities and ecosystems. A major emphasis on the relationship of humans to the environment. Lab includes field trips and the study of local aquatic and terrestrial communities.

(3+2)

Prerequisites: High school biology, BIO101, or consent of instructor.

**BIO131 Nutrition 3 Cr. Hrs.**

A study of nutrition and its role in promoting good health throughout the life span. Includes the study of proper nutrients and the various functions of the nutrients in the body's metabolism. Transfer Assurance Guide (TAG) approved effective summer 2007 (OHL016 - Basic Nutrition).

(3+0)

**BIO150 The Human Body 4 Cr. Hrs.**

An integrated course in the normal structure and function of the human body. It forms a basis for the later understanding of dysfunctional conditions. Each body system is presented individually, then the interrelationships between body systems are studied.

(4+0)

Prerequisite: BIO101 or high school Biology and Chemistry with a grade of "C" or better

**BIO180 Principles of Genetics 4 Cr. Hrs.**

The fundamentals of classical genetics and the basic principles of human genetics are reviewed. Topics covered include plant and animal genetics, cancer genetics, genetic engineering, genetics in human medicine and criminology, and ethical issues raised by DNA technology such as eugenics.

(3+2)

Prerequisite: BIO101 or high school Biology and Chemistry with a grade of "C" or better

**BIO201 General Biology I 4 Cr. Hrs.**

The course is designed for students pursuing various disciplines of science, especially biology and allied health-related majors. The first course in a two-semester sequence. Successful completion of this course is a pre-requisite to BIO 202 (General Biology II). Major topics covered include: the scientific method; basic chemistry, especially as it relates to biochemistry; cell structure and function, including the cell cycle and photosynthesis; genetics, including DNA structure and function; and evolution and natural selection. Transfer Assurance Guide (TAG) approved effective summer 2009 (OSC003 - General Biology I).

(3+3)

Prerequisites: BIO 101, or high school biology and chemistry with a grade of "C" or better.

**BIO202 General Biology II 4 Cr. Hrs.**

The course is designed for students pursuing various disciplines of science, especially biology and allied health-related majors. Major topics include biological classification; animal, plant, fungi and microbial diversity and evolution; plant and animal systems and their form and function; ecosystems and ecology; and animal behavior. Transfer Assurance Guide (TAG) approved effective summer 2010 (OSC004 - General Biology II).

(3+3)

Prerequisite: BIO201 with a grade of "C" or better or instructors permission

**BIO231 Anatomy & Physiology I 4 Cr. Hrs.**

Anatomical and physiological aspects of cells and tissues and the integumentary, skeletal, muscular, and nervous systems of the human body. Lab emphasizes human anatomy and physiology and includes cat dissection.

(3+3)

Prerequisite: BIO101 or high school Biology and Chemistry with a grade of "C" or better, or equivalent; strongly recommend CHM101

**BIO232 Anatomy & Physiology II 4 Cr. Hrs.**

A continuation of BIO231, which focuses on anatomical and physiological aspects of the endocrine, digestive, respiratory, circulatory, cardiovascular, lymphatic, urinary, and reproductive systems of the human body. Lab emphasizes human anatomy and physiology and includes cat dissection.

(3+3)

Prerequisite: BIO231 with a grade of “C” or better, or instructor’s permission

**BIO234 Human Disease 3 Cr. Hrs.**

A study of alterations in homeostasis, alterations in cellular function as well as pathophysiology of common disorders of the human nervous, muscular, skeletal, endocrine, cardiovascular, respiratory, excretory, digestive, and reproductive systems. Special emphasis will be placed on the relationship between the normal physiology and the physiological basis of the disease process. Case studies are used to interpret clinical information, diagnostic tests, signs and symptoms relating to mechanisms of disease. Intended for students in or aspiring to various health professions including nursing.

(3+0)

Prerequisite: BIO232 with a grade of “C” or better

**BIO257 Microbiology 4 Cr. Hrs.**

A study of anatomy, physiology, taxonomy, identification, growth, and control of micro-organisms, including bacteria, viruses, algae, fungi, and selected human parasites. Additional topics include bacterial metabolism, microbial genetics, immune responses, host defense mechanisms, and the spread of infectious diseases. Laboratory includes culture staining and identification of micro-organisms.

(3+3)

Prerequisite: BIO101 or high school Biology and Chemistry with a grade of “C” or better

**BUS101 Introduction to Business 3 Cr. Hrs.**

This course is a survey of business, introducing the major components of a business including production or service, marketing, finance, management, accounting and human resources. The course also examines the economic, social, technological, competitive and regulatory environment of business both domestically and internationally.

(3+0)

**BUS160 International/Global Business 3 Cr. Hrs.**

This course focuses on the economics, social and cultural considerations of doing business overseas. The globalization of markets and the growth of overseas business ventures is explored. The need to develop varied techniques for managing people from other cultural backgrounds, the means of minimizing risks in financial transactions, and development of systems for coordinating and controlling operations will be stressed. Techniques to overcome international business barriers are covered. Upon completion, students should be able to demonstrate an understanding of the economic, social and cultural considerations of doing business worldwide.

(3+0)

**BUS211 Business Communications 3 Cr. Hrs.**

This course introduces business communication principles and establishes written communication standards in preparation for the real-world workplace. Students analyze a variety of writing situations, design the form and content of communications, and write in appropriate styles that range from informal to business formal. Effective oral communication is emphasized, individually and as teams, utilizing appropriate technology, strategy, and delivery. Transfer Assurance Guide (TAG) approved effective summer 2012 (OBU005-Business Communications).

(3+0)

Prerequisites: ENG111 and CIS112 or CIS114

**BUS221 Business Law 3 Cr. Hrs.**

This course is a study of the U.S. legal system and dispute resolution. Major units of study include: sources of law, torts and crimes, contract and sales law, personal property law, employment law, consumer credit/bankruptcy law, and a study of business organizations. In addition, units on ethics, cyber law, e-contracts, intellectual property law, and alternative dispute resolutions are presented. Cases and media presentations are used to highlight important concepts. Transfer Assurance Guide (TAG) approved effective spring 2008 (OBU004 - Legal and Social Environment of Business).

(3+0)

**BUS223 Employment Law, Safety & Security 3 Cr. Hrs.**

In this course we will address the need to understand and comply with employment law, the benefits of employee assistance programs, and compliance with occupational safety, health, and security programs within the workplace. Topics covered in the course include legal compliance, workplace violence, safety, security, emergency response plans, employee assistance programs, employee wellness programs, and chemical use and dependency.

(3+0)

**BUS250 Labor Relations 3 Cr. Hrs.**

This is a study of unions and their relationship with management. Major topics include negotiating and administering labor contracts, wages, benefits, and working conditions, as well as their impact on contract negotiations.

(3+0)

**BUS260 International Trade 3 Cr. Hrs.**

This course is a study in how to do business internationally. Topics include international terms, credits, export/import paperwork, and currency exchange. International marketing, distribution, and financing are emphasized, as well as cultural effects and local customs.

(3+0)

**CAD111 CAD I 4 Cr. Hrs.**

A course in the fundamentals of Computer-Aided Design, utilizing state-of-the-art microcomputer hardware and AutoCAD software. Covers fundamental Window system commands and AutoCAD application commands. Gives the student the opportunity to become proficient, in a hands-on environment, in developing fundamental 2D drawings and utilizing an industrial quality CAD system.

(3+3)



**CAD112 CAD II****4 Cr. Hrs.**

A continuation of CAD I. The student progresses to more advanced commands and design features of the AutoCAD software. The student utilizes plotting equipment for finished projects. The goal is to become proficient in the operation of a CAD system to develop complex assemblies to learn the interrelationship of detailed and purchased parts and how it all comes together in a final set of working drawings. Transfer Assurance Guide (TAG) approved effective summer 2008 (OET012 - CAD).

(3+3)

Prerequisite: CAD111 with a "C" or better

Recommended: IND103 and MET110

**CAD213 CAD III****4 Cr. Hrs.**

Students will develop and plot advanced 3D models, 2D detail drawings and 3D assembly drawings as used in the modern industry today. Students will also learn how to link their 3D models to develop design tables and bill of materials. This course is an advanced course in mastering the commands utilizing SolidWorks 3D feature-based parametric solid modeling design tool software.

(3+3)

Recommend: MET110

**CET100 Construction Methods & Materials 3 Cr. Hrs.**

In this course the student will become familiar with construction drawings and techniques. Common building materials and methods will be explored with respect to sustainability and common construction practice.

(2+2)

**CET115 Project Management****3 Cr. Hrs.**

In this course the student will learn a plan for project management that expands on initiating, planning, executing, monitoring and controlling, and closing projects. The course focuses on professional presentation and communication to navigate projects from conception to completion.

(3+0)

Prerequisite: CIS090 or equivalent

**CET120 Construction Material Testing 3 Cr. Hrs.**

This course provides an introduction to fundamental materials used in the construction industry including aggregates, asphalt and asphalt concrete, Portland cement and Portland cement concrete, iron, steel, masonry, and wood. Students will study testing standards as published from ASTM and ACI. Laboratory exercises will perform materials testing according to job site standards.

(2+2)

Co-requisite: MTH109

**CET200 Surveying****3 Cr. Hrs.**

Students learn the proper use of basic surveying equipment with an emphasis on coordinating theory and drawings into physical experience. This course will use conventional measuring instruments and compare the results to trigonometric predictions.

(2+2)

Prerequisite: MTH112

**CET240 Soils****3 Cr. Hrs.**

In this course the student will learn the relationship between soil conditions and building design. Students will study industry standards and experiment to confirm the standard requirements. Laboratory tests will include sieve and hydrometer tests, compaction analysis, and permeability analysis. Lecture will introduce the theory to support laboratory findings and implementation of design specifications.

(2+2)

Prerequisites: MET234 &amp; MET235

**CHM100 The World of Science****3 Cr. Hrs.**

For non-science majors, assuming no background knowledge. Students will learn to scrutinize and assess critically scientific information, historical and current, from popular information outlets. This is a science appreciation course (same as CHM100, PHY100). Course projects will be based on the course prefix chosen.

(3+0)

**CHM101 Principles of Chemistry****4 Cr. Hrs.**

This course provides students with an introduction to the fundamental chemistry underlying a variety of technologies and careers. Topics covered include various aspects of conducting measurements, chemical nomenclature and equations, molecular bonding, atomic structure, uses of radioactivity and analytical methodologies. In addition, the behavior of gases, solutions, acid and bases will be explored. The student will also learn how to classify chemical reactions, as well as determine quantities of reagents needed for and products resulting from such reactions. Laboratory reinforces and supplements lectures.

(3+3)

**CHM110 Science & Technology of Sustainability****4 Cr. Hrs.**

CHM110 takes the approach of examining past practices; evaluating current technical developments, and exploring promising new technologies in a critical fashion. It is offered that the student will develop and hone the logical capacity to determine how chemical science and engineering principles might have impact on various sustainability issues and evaluate likely applications and results. Topical areas include: energy (e.g., alternative fuels); clean water and the principles of green chemistry. Laboratory work, along with occasional visiting speakers and field trips, will reinforce the basic principles and emphasize development of analytical thinking, laboratory techniques and sound understanding of environmental principles. Students will conduct laboratory exercises in which chemistry intersects a number of matters. Cited examples are clarification of water, detection of lead and characterization of solids in smoke. These areas of inquiry arise from sustainability issues related to clean water, children chewing on lead-based paint chips and by-products of combustion.

(3+3)

**CHM138 Principles of Forensics****4 Cr. Hrs.**

Forensics is the application of the natural sciences to all phases of criminal investigation. The study of basic chemistry and biology are now an important aspect of modern forensic science. Current topics in forensics such as DNA investigation, hair analysis, blood, grass and soil, body fluids, fingerprint analysis, drug analysis, arson, accelerants, explosives, toolmarks and firearms.

(3+2)

**CHM201 General Chemistry I 5 Cr. Hrs.**

This is the first part of a two-semester program for technically-oriented students needing a solid foundation in general chemistry. Topics covered include an in-depth treatment of measurement, atomic and molecular structures, ionic behavior in solutions, and inorganic chemical nomenclature. Also, the types of chemical reactions (including acid-base and oxidation reduction) are reviewed, along with stoichiometric principles, the behavior of gases and thermochemistry. Additional topics covered include electronic structure, periodic law, chemical bonding and molecular geometry. Lab work reinforces basic principles, supplements lectures and emphasizes analytical techniques. Transfer Assurance Guide (TAG) approved effective summer fall 2009 (OSC008 - General Chemistry I).

(3+3+1 Recitation)

Prerequisites: MTH090 or equivalent and CHM101 or High School Chemistry in past 5 yrs.

**CHM202 General Chemistry II 5 Cr. Hrs.**

A continuation of CHM201, this is the second part of a two-semester general chemistry program. Topics covered include a detailed treatment of states of matter, intermolecular forces, and the properties of solutions. Chemical kinetics, chemical equilibrium (including those of acid-base systems, complex ions and coordination compounds) and chemical thermodynamics are covered as well. Students are also introduced to electrochemistry, nuclear chemistry, and the chemistry of selected elements and materials (including polymers and organic substances). Lab work reinforces basic principles, supplements lectures, and emphasizes analytical techniques Transfer Assurance Guide (TAG) approved effective spring 2011 (OSC009 General Chemistry II).

(3+3+1 Recitation Hour)

Prerequisites: CHM201 and MTH109 with a grade of "C" or better or instructor's permission

**CHM256 Principles of Biochemistry 3 Cr. Hrs.**

An introductory course that deals with inorganic and organic biomolecules. Emphasizes the synthetic and degradative reactions of carbohydrates, lipids, nucleic acids, and proteins. Examines the roles of water, buffers, enzymes, vitamins, minerals, and organic salts in cellular metabolism. Laboratory reinforces and supplements lectures.

(2+2)

Prerequisite: CHM101 or equivalent

**CIS090 Introduction to Computers 1 Cr. Hr.**

This course is a beginner's introduction to computers (PC's). The text covers most of the fundamental concepts associated with computers including terminology, hardware and software issues, and introduces the student to some elementary skills via some of the well-known software applications. Students will practice basic computer skills using word processing and spreadsheets, as well as explore the Internet. No prior computer knowledge is necessary for this course.

(0+2)

Course Placement Test is available

**CIS104 Desktop Management 1 Cr. Hr.**

This is a course in which the students learn to understand and operate the personal computer using the Microsoft Windows Environment. They will also learn how to communicate with others using Microsoft Outlook. The basic features for the latest operating system and Outlook will be covered.

(0+2)

Prerequisite: CIS090 and OAS090 or satisfactory score on Course Placement Tests

**CIS108 Internet Scripting 4 Cr. Hrs.**

This course is designed to teach programming to a student using a current Internet scripting language. The course will teach the student traditional programming concepts such as variable usage, program flow statements and designing loops. The class will focus on using the scripting language to solve programming problems using Internet applications.

(3+3)

**CIS109 Database Management 4 Cr. Hrs.**

This course is designed to familiarize students with the concepts underlying client/server relational databases. This class will teach students the basics of using the SQL query language. It will also teach more advanced SQL concepts such as query optimization and using SQL in other high level programming languages. This class will teach the student how to manage and maintain a server based database system. This will include tasks such as creating, backing up, repairing, optimizing, securing, localizing and internationalizing databases.

(3+3)

Co-requisite: CIS191

**CIS111 Visual Basic Programming 4 Cr. Hrs.**

This is a computer programming course involving applications utilizing a Graphics User Interface (GUI) and serving the needs of users in an event driven environment. The course moves from fundamental input/output programs to applications accessing a database for the purpose of adding, deleting, and/or updating records. The course also covers user report processing needs and applications involving the Internet. Object oriented techniques are introduced and important programming concepts are emphasized. Students will be required to complete several laboratory assignments during the semester.

(3+3)

**CIS112 Microsoft Word 3 Cr. Hrs.**

This course teaches basic and advanced commands in Microsoft Word software to create, format, edit, and save documents including letters, tables, reports, and merged documents. Other topics covered include desktop publishing features, web pages, styles and templates, master documents, online forms, workgroups, and information integration with other office programs.

(2+2)

Prerequisite: CIS090 and OAS090 or satisfactory score on Course Placement Tests



**CIS113 Microsoft Excel 3 Cr. Hrs.**  
This course emphasizes beginning to advanced features of Microsoft Excel. Some of the topics presented include handling multiple worksheets, as well as creating and using formulas, macros, range names, data lists, data protection, data validation, pivot tables, and linking and embedding.

(2+2)

Prerequisites: CIS090 and OAS090 or satisfactory score on Course Placement Tests

**CIS114 Microsoft Applications 3 Cr. Hrs.**

This course is a basic course in which the student learns to operate the personal computer using four components of Microsoft Office software: Microsoft Word, Excel, Access, and PowerPoint. All the basic program functions will be covered for each package, as well as many advanced functions. A basic knowledge of the keyboard is helpful. Transfer Assurance Guide (TAG) approved effective spring 2008 (OBU003 - Computer Applications).

(2+2)

Prerequisite: CIS090 and OAS090 or satisfactory score on Course Placement Tests

**CIS117 Microsoft Publisher 1 Cr. Hr.**

This course will emphasize the basics of creating professional layouts, including flyers, newsletters, announcements, menus, etc. The student will learn the basics of desktop publishing using Microsoft Publisher.

(1+1)

Prerequisite: CIS112 or CIS114

**CIS118 Access 1 Cr. Hr.**

This is a course in which students will use MS Access software to learn the basic concepts of database management. Creating databases, entering data, preparing a query, preparing graphs, and creating forms and reports are all practiced in a lab setting.

(0+2)

Prerequisite: CIS090

**CIS119 PowerPoint 1 Cr. Hr.**

This is a course designed for the beginner in using PowerPoint, a presentation graphics program. Slide creation; use of graphics, charts, tables, and color to enhance slides; and methods of automation, use of sound, and collaboration techniques will be areas of study. Hands on experience and the ability to demonstrate usage of PowerPoint will be provided.

(0+2)

Prerequisite: CIS090

**CIS121 Intermediate Word 1 Cr. Hr.**

A continuation of CIS114 emphasizing advanced features of Microsoft Word including creating charts, formatting text into columns, formatting with styles, merging documents, sorting, creating tables, and linking and embedding.

(0+2)

Prerequisite: CIS114 with a grade of "C" or better

**CIS122 Intermediate Excel 1 Cr. Hr.**

A continuation of CIS114 emphasizing advanced features of Microsoft Excel including handling multiple worksheets, as well as creating and using formulas, macros, range names, data lists, data protection, data validation, pivot tables, and linking and embedding.

(0+2)

Prerequisite: CIS114 with a grade of "C" or better

**CIS129 Web Page Development 3 Cr. Hrs.**

The student will learn the concepts of web page design and layout, along with the writing of HTML, XHTML, and CSS code. In preparing web pages for the internet, current ADA standards, web page validation, and mobile devices will be studied.

(2+2)

Prerequisite: CIS090 or equivalent

**CIS150 Programming C++ 4 Cr. Hrs.**

This is an introduction to structured programming using the ANSI C/C++ programming environment. Use of the environment tools, logic structures, and primary library functions of the language is emphasized. Additional subjects covered include variable types and declarations, math and logical operators, parameter passing, arrays and string handling and pointers.

(3+3)

**CIS155 Linux Networking I 4 Cr. Hrs.**

This course covers data communications and operating system technology as implemented in a Linux environment. Subjects covered include the history, theory, administration, and installation of Linux and its associated software. This class will focus on the administration of Linux workstations. This class makes extensive use of lab projects to reinforce essential concepts.

(3+3)

Co-requisite: CIS190 or CIS191

**CIS161 C# 4 Cr. Hrs.**

This course is an introductory programming course taught using Microsoft's C# language. The course makes extensive use of the .NET framework which is common in most of the Microsoft programming languages. Students will create both console and GUI programs in this course. Variables, decisions, loops, arrays, classes, inheritance, event-handling, exceptions, file input/output and database connectivity are some of the topics covered. This course includes hands on laboratory assignments.

(3+3)

**CIS165 Java Programming 4 Cr. Hrs.**

This is an introductory programming course which utilizes the Java Programming Language and emphasizes object-oriented programming concepts. As a general purpose programming language Java can be utilized in traditional programming environments. It can support applications developed for a variety of computer platforms and other devices such as smart phones or tablets. This course includes hands on laboratory assignments requiring students to complete and submit programming projects.

(3+3)

**CIS191 Computer Operations 3 Cr. Hrs.**

This course is an intensive study of operating systems and PC hardware. Topics include study of the theory and tasks commonly assigned to system software, basic disk and program commands, configuration and installation commands and techniques, as well as management of resources and security. Hardware issues are also addressed covering the theory, installation and maintenance of common personal computer hardware such as CPU's, memory, hard drives and peripheral devices. This course helps prepare the student for the CompTIA A+ Certification Exams. Transfer Assurance Guide (TAG) approved effective fall 2015 (CTIT016-Linux).

(2+3)

**CIS192 Microsoft Workstation Technology 3 Cr. Hrs.**  
This course teaches the basic and advanced concepts needed to manage a Microsoft Desktop Operating system in both a networked and standalone environment. This course makes extensive use of lab projects to reinforce essential concepts.

(2+3)  
Co-requisite: CIS191

**CIS193 Microsoft Server Technology 3 Cr. Hrs.**  
This course teaches the basic and advanced concepts needed to manage a Microsoft Server Operating system in both a networked and standalone environment. This course makes extensive use of lab projects to reinforce essential concepts. Transfer Assurance Guide (TAG) approved effective fall 2015 (CTIT013-MS Windows Server 2003 Environment).

(2+3)  
Co-requisite: CIS191

**CIS194 IT Security Fundamentals 3 Cr. Hrs.**  
This course is an introduction to security as it applies to computers, local area networks and the Internet. This class covers both methods of attack and the prevention of those attacks. The course provides an introduction to cryptography. The course covers the creation and implementation of a comprehensive security policy. This course helps prepare the student for the CompTIA Security+ Certification Exams. Transfer Assurance Guide (TAG) approved effective fall 2015 (CTIT015-Comp TIA Security).

(2+3)  
Co-requisite: CIS191

**CIS195 Networking Essentials 3 Cr. Hrs.**  
This is a survey course designed to introduce students to basic network concepts and terminology. Both theoretical and practical material is introduced in this class. This course covers learning objectives tested in the CompTIA Network+ exam. This course includes hands on laboratory assignments. Transfer Assurance Guide (TAG) approved effective fall 2015 (CTIT002-Networking/Comp TIA Network).

(2+3)

**CIS201 Workplace Technologies 3 Cr. Hrs.**  
This is a hands-on course addressing technology's role in the work place. Projects will focus on processes and tools that are available to students to enhance technological office procedures. It will introduce various technologies and DigiTools necessary in the business environment. DigiTools will include, but not limited to, Wacom Graphire Tablet, Tablet PC, scanners, speech recognition, and podcasting. Various productivity software packages will also be included. Digital reputation management will be discussed.

(3+0)  
Prerequisite: CIS104 or CIS112 or CIS113 or CIS114

**CIS202 Mobile Application Programming 3 Cr. Hrs**  
This course will provide students with an introduction to mobile application development. By the end of the course the student will be able to install and work with Android development tools. The student will be able to create an effective and attractive visual interface. The student will accomplish these outcomes by creating and debugging several mobile applications. Students need a solid foundation in Java programming skills to be successful in this class.

(2+3)  
Pre-Requisite: CIS193

**CIS255 Linux Networking II 4 Cr. Hrs.**  
This course covers data communications and network services as implemented in a Linux environment. Subjects covered include firewalls, DNS, DHCP, file sharing, printer sharing, as well as email and web services. This class will focus on the administration of Linux workstations. This class makes extensive use of lab projects to reinforce essential concepts.

(3+3)  
Prerequisite: CIS155

**CIS265 Java Programming II 3 Cr. Hrs.**  
This is an advanced programming course which utilizes the Java Programming Language and emphasizes object-oriented programming concepts. The course will introduce students to advanced topics such as interfaces, generic types, database connectivity, working with multiple threads and localizing programs so that they can be useful in a global market. This course includes hands on laboratory assignments requiring students to complete and submit programming projects.

(2+3)  
Prerequisite: CIS165

**CIS284 Microsoft Infrastructure Technology 3 Cr. Hrs.**  
This course teaches the basic and advanced concepts needed to manage a Microsoft Infrastructure Services such as DNS, DHCP and Remote Access Services. This course makes extensive use of lab projects to reinforce essential concepts.

(2+3)  
Co-requisite: CIS193

**CIS285 Microsoft Directory Services Technology 3 Cr. Hrs.**  
This course teaches the basic and advanced concepts needed to manage a Microsoft Directory Services environment. This course makes extensive use of lab projects to reinforce essential concepts.

(2+3)  
Co-requisite: CIS193

**CIS286 Windows Server Administration 3 Cr. Hrs.**  
This course is the second in a series of three courses designed to teach the administration skills necessary to install and maintain a Windows Server infrastructure. It focuses on name resolution, user and group management within an Active Directory environment, management using Group Policy, remote access technology as well as server installation and maintenance using images and patch management. This class currently covers Windows Server 2012R2 and covers the same learning objectives as used in Microsoft's Administering Windows Server 2012 course and their 70-411 certification exam.

(2+3)  
Pre-Requisite: CIS193

**CIS287 Advanced Windows Server 3 Cr. Hrs.**  
This course is the third in a series of three courses designed to teach the administration skills necessary to install and maintain a Windows Server infrastructure. It focuses on advanced networking services, Active Directory Domain Services, Active Directory Rights Management, Active Directory Federation Services, Network Load Balancing, Failover Clustering, disaster recovery, and information provisioning using Dynamic Access Control. This class currently covers Windows Server 2012R2 and covers the same learning objectives as used in Microsoft's Configuring Advanced Windows Server 2012 Services course and their 70-412 certification exam.

(2+3)  
Pre-Requisite: CIS193

**CIS290 Information Technology Intern. 1-4 Cr. Hrs.**

This is a job-related computer experience in which the student works for a department within the college, a business, or an industrial organization. The student is chosen for this course on the basis of academic progress or job experience. Enrollment only with instructor permission.  
(1+30)

**CJT130 Principles of Criminal Justice 3 Cr. Hrs.**

Students will become familiar with the criminal justice system by exploring theories of criminology, examining the development of criminal and procedural law, understanding the roles of law enforcement, court and correctional personnel, and by investigating critical issues surrounding criminal justice including multi-cultural and gender issues.  
(3+0)

**CJT132 Criminal Justice Administration 3 Cr. Hrs.**

Students will be examining the role of management versus leaders in the American criminal justice system focusing on the organization of bureaucratic systems, their basic principles, and the interrelationships between the major players. Students will also become familiar with organizational theory, leadership skills, disciplinary action and union issues.  
(3+0)

**CJT134 Criminal Law 3 Cr. Hrs.**

This course is designed as a study of the development and implementation of criminal law. Emphasis will be placed on exploring elements of criminal statutes, understanding Ohio's criminal statutes, investigating affirmative defenses and sentencing practices. Students will analyze the law based on their own personal opinions and beliefs by critically examining and discussing certain laws, procedures, court cases, and case outcomes.  
(3+0)

**CJT136 Juvenile Delinquency Principle 3 Cr. Hrs.**

This course examines the problems of today's "youth in trouble," with an emphasis placed on prevention, causes and methods of approach and disposition of cases.  
(3+0)  
Prerequisite: CJT130

**CJT140 Constitutional Law 3 Cr. Hrs.**

This course is a study of contemporary constitutional issues. Discussed are critical issues in criminal justice including detention, arrest, search and seizure, interrogations and confessions, self-incrimination, due process and right to counsel. Also included are constitutional aspects of criminal and civil liabilities of justice personnel, and constitutional and civil rights in the workplace.  
(3+0)  
Prerequisite: CJT130

**CJT220 Law Enforcement in American Society 3 Cr. Hrs.**

Overview of the police role in modern American society; emphasis on problems and issues confronting police and solutions within an organizational framework.  
(3+0) F - odd years  
Prerequisite: CJT130

**CJT230 Corrections 3 Cr. Hrs.**

A survey of the general field of corrections, including the institutions and resources which are used. A historical overview of corrections is explored.  
(3+0)  
Prerequisite: CJT130

**CJT240 Criminal Evidence & Procedure 3 Cr. Hrs.**

An overview of criminal procedure and law including constitutional provisions, rules of evidence, trial and pre-trial procedures, arrest, search and seizure, admissibility and confessions.  
(3+0)  
Prerequisites: CJT130 and CJT134

**CJT242 Probation & Parole 3 Cr. Hrs.**

This course will explore the philosophies and guidelines utilized in both the juvenile and adult probation setting. The dilemma of surveillance involving custody/control factors versus supervision and treatment will be examined. A strong emphasis will be placed on developing citizen agency relationships in utilizing citizen volunteer programs to help rehabilitate offenders.  
(3+0)  
Prerequisites: CJT130 and CJT230

**CJT244 Criminal Investigation 4 Cr. Hrs.**

A study of investigative procedures; initial contact by the investigator, interviewing, case development, follow-up investigation, handling of leads, hot or cold information, in custody interviews and procedures. Crime scene labs will be incorporated into this class.  
(3+2)  
Prerequisites: CJT130 and CJT134

**CJT246 Technical Skills for Officers 3 Cr. Hrs.**

This course will focus on developing technical skills necessary for the performance of jobs in the Criminal Justice field. Topics covered will include Report Writing, Sketching, Interrogation, and Testifying in Court.  
(3+0)  
Prerequisite: Admission to Law Enforcement Academy

**CJT252 Seminar in Criminal Justice 3 Cr. Hrs.**

This course exams current critical issues in criminal justice. Topics to be considered for discussion and analysis include: terrorism, capital punishment, restorative justice, ethics, race and class issues, drugs, the decision making process, issues in policing and the future of crime and justice.  
(3+0)  
Prerequisites: CJT130 and CJT134

**CJT281 Vehicle Patrol/Traffic Enforcement 4 Cr. Hrs.**

Police academy cadets will become familiar with O.P.O.T.C. requirements for proper patrol techniques including identifying traffic offenses and correct tactical procedures for stopping and approaching vehicles.  
(3+3)  
Prerequisite: Admission to Law Enforcement Academy



**CJT282 Firearms/Driving 4 Cr. Hrs.**  
Police academy cadets will become proficient in O.P.O.T.C. firearms techniques including identification of firearms and nomenclatures, secure handling of firearms, and will become certified in the firing of firearms. Students will also become adept in defensive and pursuit driving techniques and vehicle maneuverability.  
(2+6)  
Prerequisite: Admission to Law Enforcement Academy

**CJT283 Defensive Tactics/Physical Fit 3 Cr. Hrs.**  
Police academy cadets will become experienced with several levels of defensive tactics including hand to hand and baton techniques as well as weapon retention. Students will also become physically ready to pass the O.P.O.T.C. physical fitness standards.  
(1+6)  
Prerequisite: Admission to Law Enforcement Academy

**CJT284 Human Conditions 4 Cr. Hrs.**  
Police academy cadets will become certified in first aid and CPR techniques. Students will also identify cultural differences and how to effectively interact and communicate in diverse settings. Cadets will also become knowledgeable in preventing and controlling civil disorders.  
(3+3)  
Prerequisite: Admission to Law Enforcement Academy

**CJT289 Special Topics CJ Professional 1 Cr. Hrs.**  
This course will examine special topics within criminal justice including sociological, criminological and philosophical discussions of criminal justice. Topics within the course will challenge students to examine the underlying theory and assumptions behind many of their current beliefs.  
(1+0)  
Prerequisites: CJT132, CJT136, CJT230, and CJT240  
Co-requisites: CJT242, CJT244, and HST114

**CJT290 Criminal Justice Practicum 4 Cr. Hrs.**  
A basic exposure to a particular criminal justice agency through observation and limited participation. This course will provide an understanding of how this agency fits into the entire criminal justice system and local community.  
(3+8)  
Prerequisites: CJT132, CJT136, CJT230, and CJT240  
Co-requisites: CJT242 and CJT244  
(2+2)

**DBP110 ICDL Computer Technologies 1 Cr. Hr.**  
This course provides a thorough understanding of information and communication technologies (ICT). Students who successfully complete this course will have a solid foundation in core desktop computer applications including word processing, spreadsheets, database and presentation software. Students will also be exposed to foundational topics including Windows operating system, computer operations and internet usage. This is an online course that includes demonstrations and hands on exercises. Successful completion of the course will prepare students for the ICDL certification tests. ICDL (International Computer Driving License) is the US arm of the ECDL Foundation and is an internationally recognized computer certification.  
(0+2)

**DBP130 IT Customer Service and Communication 2 Cr. Hrs.**  
IT professionals need the skills to communicate with other IT personnel as well as end users. Students will be taught to assist clients through effective electronic and verbal communication skills with a focus on the differences in communicating with each group. Students will also focus on professionalism in the workplace. There is an emphasis on email and phone etiquette, business manners, attention to detail in written and oral communication, presentation to specific audiences, value of listening to others, and conflict management. Students will also focus on the best ways to promote themselves in the employment market.  
(2+2)

**DBP150 Database Basics 3 Cr. Hrs.**  
This course is designed to move the student beyond the confines of PC based databases. The students will learn the basics of relational database systems including topics such as indexes and normalization. The focus of the course will then move to enterprise database management systems and include discussion of distributed computing and data warehousing. Finally, they will learn the fundamentals of querying using Structured Query Language (SQL).  
(2+2)

**DBP205 Discrete Structures 3 Cr. Hrs.**  
In this course the student will learn foundations that underlay programming in the majority of programming languages. Discrete structures such as Boolean logic, proof techniques, graphs, recurrence relations and functions will be covered. The class will then move into algorithms including sorting, binary search and flowcharting. Pseudo code will be used as a means to introduce programming that is non-language specific. The students will be introduced to the concept of screen flow as a way of analyzing how an end user will move through an application. Topics in this course will be reinforced with the assistance of Visual Logics software.  
(2+2)  
Prerequisite: DBP110

**DBP210 Computer Programming I 3 Cr. Hrs.**  
In this course the student will learn foundations that underlay programming in the majority of programming languages. Discrete math such as sets, logic and proofs will be learned. The class will then move into algorithms including sorting, binary search and flowcharting. Pseudo code will be used as a means to introduce programming that is non-language specific. The students will be introduced to the concept of screen flow as a way of analyzing how an end user will move through an application. Finally, the students will move to the Visual Basic language to transfer their skills into a language to develop a variety of applications.  
(2+2)  
Prerequisite: ITR291



**DBP220 Database Reporting 3 Cr. Hrs.**

In this course the student will learn how to effectively pull information from a variety of database systems. The student will learn how to directly pull data from a database using a reporting tool and how to use SQL as an intermediate step in reporting to more effectively work with large stores of data. A heavy focus will be placed on the popular *Crystal Reports* (Pro, Server & Dashboard) software application.

(2+2)

Prerequisite: DBP150

**DBP225 Computer Programming II 3 Cr. Hrs.**

In this course the students will add to their knowledge of programming by focusing further on object oriented programming using the C# language. They will also learn how the .NET framework provides a structure for programs. Finally, they will be introduced to the widely used, class-based, object-oriented language Java. With these languages, students will learn about standalone applications as well as automating processes. Not only will students learn to write original code, they will be exposed to methods of debugging existing code.

(2+2)

Prerequisite: DBP210

**ECD150 Infant & Toddler Development and Care 2 Cr. Hrs.**

An understanding of the important role of adults in controlling, intervening and interpreting the environment so that infants and toddlers receive protective care, stimulation, and relaxation necessary to enhance physical, social, emotional, cognitive, and language development.

(2+0)

**ECD 190 Fundamentals of Early Childhood 3 Cr. Hrs.**

This course provides an overview of early learning environments and developmental characteristics for children age 0-8. An emphasis will be placed on the history of early childhood education, theories and program models which influence program and curriculum development today. A weekly required field experience places the student in an early childhood program observing the development of young children. The student will learn appropriate observation methods and use a variety of tools to document children's development.

(2 + 3)

**ECD201 Pre-Kindergarten Curriculum & Methods 3 Cr. Hrs.**

This course focuses on the role of the teacher in connecting content, teaching and learning for preschool children when building curriculum based on best practices. Ohio's PreK Early Learning Standards will be used as students compare and contrast a variety of curriculum models. Students will apply understandings of how children learn to create healthy, respectful, supportive, and challenging learning environments for all children. Participation in a preschool classroom, seven hours each week, will give students an opportunity to develop, implement and reflect on lesson plans that they selected and prepared to meet the needs of individual children and the group.

(2+7)

Prerequisites: EDU100, EDU150, and ECD190

Co-requisite: EDU120

**ECD270 Special Topics in Early Childhood 3 Cr. Hrs.**

An independent study course permitting the student to explore issues affecting children and families. May be required by ECD faculty to assist students in meeting requirements for the Ohio Department of Education Pre-Kindergarten Associate License.

(3+0)

Prerequisite: Determined by ECD Coordinator's recommendation

**ECD280 Child Care Field Experience 3 Cr. Hrs.**

A 60-hour field experience appropriate to student's focused interest area. May be required by ECD faculty to assist students in meeting requirements for the Ohio Department of Education Pre-Kindergarten Associate License.

(1+4)

Prerequisite: Determined by ECD Coordinator's recommendation

**ECD290 Pre-Kindergarten Practicum 3 Cr. Hrs.**

This is the capstone course of the Pre-Kindergarten associate degree program. Planning and carrying out specific teaching experiences requires M-F participation in a center based early childhood learning program. Principles are assimilated through practical experiences with an established group of 3-5 year old children and a mentor teacher. To be recommended for the ODE Pre-Kindergarten Associate License students must achieve a grade of B or higher, pass OAE Subtest 36 and 37 and demonstrate that the degree program can be completed within 6 months of completing ECD290.

(1+14)

Prerequisites: ECD201, EDU140, EDU210, EDU230, EDU240, EDU270, MTH170, Completed training in First Aid, CPR, Common Childhood Illness Recognition, Child Abuse Recognition per ODJFS requirements; Practicum application and requirements filed with ECD coordinator by October 15; Student must demonstrate that the PreK Associate Degree can be completed within 6 months of completing practicum.

Co-requisite: EDU250

**ECO211 Macroeconomics 3 Cr. Hrs.**

Macroeconomics is a study of the U.S. economy emphasizing supply and demand, total production, total employment, and the general price level. Issues of inflation, recession, international trade, and federal budget deficits are also investigated. Economic solutions through fiscal policy and monetary policy are included. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSS005 - Macroeconomics).

(3+0)

**ECO212 Microeconomics 3 Cr. Hrs.**

Microeconomics is a study of the U.S. economy emphasizing supply and demand, the individual firm, competition, and the industry. Issues of revenue, expense, profit, loss, and break-even are also investigated. Decisions such as price determination and production output are included. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSS004 - Microeconomics).

(3+0)

**ECO257 Global Economics 3 Cr. Hrs.**

This course covers the economic analysis of international trade and foreign investment, including theories of international trade, balance of payments, exchange rates and international monetary arrangements, adjustments of payments disequilibrium, and government policies on trade and aid. Upon completion, students should be able to demonstrate an understanding of the international economic environment.

(3+0)

**EDP 160 Introduction to Paraprofessional Education 4 Cr. Hrs.**

This foundational course introduces the role and responsibilities of the paraprofessional. A field experience occurs in an educational setting serving special needs populations from preschool to grade 12. Students interact as a member of a multidisciplinary team, observe and support instructional activities under the direction of a licensed teacher, and operate within the recommended standards for health, safety, and nutrition. (3 + 2)

**EDP290 Paraprofessional Internship 2 Cr. Hrs.**

This experience requires the student to be available for a continuous experience in a school system for not less than 14 hours per week. Assignments will be coordinated through local schools so that the student has the opportunity to apply knowledge and develop skills appropriate to the role of the educational paraprofessional. (0+14)

Prerequisites: EDU140, EDU270; MTH170; Completed training in First Aid, CPR, Common Childhood Illness Recognition, Child Abuse Recognition; Internship application filed with education department faculty by October 15.  
Co-requisite: EDU 250

**EDU100 Introduction to Teaching 3 Cr. Hrs.**

This introductory course explores the purposes, organizations, and outcomes of schooling from the perspectives of the field of social foundations of education. Candidates undertake critical inquiry into teaching as a profession. Licensure requirements, teachers' legal responsibilities, and the accountability of public schools are also explored. Students must be available to make several school visits and access the internet to research relevant topics. Transfer Assurance Guide (TAG) approved effective spring 2017 (OED007 - Introduction to Education). (3+0)

**EDU120 Guidance & Classroom Management 3 Cr. Hrs.**

Classroom management is a major concern of all educators from the preschool classroom through secondary education. This course explores various guidance theories providing a variety of techniques to be used in the development of a personal philosophy that can be put into practice in the classroom. (3+0)  
Prerequisite: PSY110

**EDU 140 Strategies for Teaching Reading 3 Cr. Hrs.**

Essential teaching methods and techniques of literacy instruction prepare the student for working with young readers as well as those with reading difficulties. Emphasis is placed on the understanding of phonics and its role in reading and writing instruction. Day time availability is required for a short term tutoring experience. (3 + 0)  
Prerequisites: EDU 100

**EDU150 Child Development I 3 Cr. Hrs.**

This course focuses on applying knowledge of the characteristics and needs of young children, prenatal to age eight, for the creation of healthy, respectful, supportive, challenging, and effective learning environments. Multiple and interrelated influences on the development and learning of young children will be examined. (3+0)

**EDU210 Creative Arts Curriculum 3 Cr. Hrs.**

This course is designed to teach theory and practice supporting play to develop children's creative expression in music, drama, art, and movement. Principles and elements of the arts are introduced as the student advances own understanding of the arts and their contribution to child development and learning. (3+0)  
Prerequisite: EDU100

**EDU220 Special Education 3 Cr. Hrs.**

This is a survey course to prepare all educators to teach diverse learners, including those with exceptionalities. It covers developmental characteristics, assessment methods, intervention strategies, and ethical principles for students in education and community settings. Transfer Assurance Guide (TAG) approved effective fall 2007 (OED004 - Individuals with Exceptionalities). (3+0)  
Prerequisites: EDU100

**EDU230 Family, School & Community 3 Cr. Hrs.**

This class prepares the teacher to work with students and their families. There is in-depth information focusing on the diversity of families and strategies for building partnerships with families. Emphasis will be placed on communication that results in collaboration and advocacy skills for strengthening families within communities. Transfer Assurance Guide (TAG) approved effective spring 2013 (OED006 - Families, Communities, Schools). (3+0)  
Prerequisite: EDU100

**EDU240 Educational Psychology 3 Cr. Hrs.**

This course deals with the major theories of human development, motivation and learning. Planning of instruction, teaching strategies, assessment and classroom management are examined. Authentic pedagogical practices are used to gain an understanding of the teaching and learning process. Transfer Assurance Guide (TAG) approved effective fall 2005 (OED003 - Educational Psychology). (3+0)  
Pre-requisites: PSY 110

**EDU250 Education Seminar 2 Cr. Hrs.**

This end of program course meets once a week placing ECD290 and EDP290 students together for discussions of practical daily classroom issues as well as professional development needs. Advocacy opportunities related to children and families will be emphasized. Students will organize materials and documentation useful for licensure, employment and transfer to baccalaureate programs. (2 + 0 )  
Pre-requisites: Permission of Education Department  
Co-requisites: EDP 290 or ECD 290, EDU 260

**EDU260 Instructional Technology 3 Cr. Hrs.**

This is a hands-on course addressing technology's role in education at all grade levels. The focus is on processes and tools that are available to teachers to enhance classroom organization, instruction, and assessment. Students will research pedagogical issues regarding appropriate use of computers with young children and in the classroom. (2+2)  
Prerequisites: EDU100, OAS090, CIS090

**EDU 270 Cultural & Linguistic Diversity 3 Cr. Hrs.**

This course will prepare students to support learners from diverse backgrounds in an educational setting. Emphasis will be on culturally responsive and relevant teaching to English language learners. A field experience consisting of 105 hours will be tailored to the student's program of study.

(2 + 7)

Pre-requisites: EDU 100, EDU 150, EDU 120, EDU 230, EDU 260, PSY 110

Co-Requisites: EDU 220, EDU 240

**EET121 DC Circuits 3 Cr. Hrs.**

In this course the student will learn the fundamental principles of electricity with emphasis on DC (direct current) circuits. The concepts of Ohm's Law, the Power Formula, and Kirchoff's Laws will be applied to series, parallel, and series-parallel circuits. Electrical quantities will be defined and the behavior of resistors, inductors, and capacitors under DC conditions will be studied. Complex circuits will be analyzed using the theorems of superposition, and Thevenin and Norton equivalent circuits. The relationship between electricity and magnetism will also be introduced. These topics will be learned through text, presentations, various exercises, and hands-on labs. Transfer Assurance Guide (TAG) approved effective fall 2012. (OET001 - DC Circuits).

(2+2)

Prerequisite: MTH090

**EET122 AC Circuits 3 Cr. Hrs.**

In this course the student will continue to learn the fundamental principles of electricity with emphasis on AC (alternating current) circuits. The concepts of Ohm's Law, the Power Formula, and Kirchoff's Laws will be expanded to include steady-state AC circuits. The behavior of filter circuits and transformers will be studied along with the theorems of Superposition, and Thevenin and Norton equivalencies applied to AC networks. Complex numbers and phasors will be used to represent sinusoidal AC quantities. The course concludes with an introduction to electric power systems, power factor analysis, and poly-phase systems. These topics will be learned through text, presentations, various exercises, and hands-on labs. Transfer Assurance Guide (TAG) approved effective fall 2012 (OET003 - AC Circuits).

(2+2)

Prerequisite: EET121

**EET132 Discrete Structures 3 Cr. Hrs.**

In this course the student will be introduced to the discrete structures used in computer science for software development including mathematical proof techniques, Boolean logic, graphs, trees, recurrence relations, and functions. Topics will be learned through text, presentations, and various exercises.

(2+2)

Prerequisites: MTH109 and EET240

**EET221 Digital Circuits 4 Cr. Hrs.**

In this course the student will be introduced to the fundamentals of digital logic that forms the basis of digital electronic systems. Topics include number systems and codes, logic gates, Boolean algebra, and logic simplification using key theorems. Elementary digital circuits will be explored including: encoders, adders, multiplexers, flip-flops, counters, shift registers, and memory devices. Integrated circuit (IC) technologies and applications will also be discussed. These topics will be learned through text, presentations, various exercises, and hands-on labs. Transfer Assurance Guide (TAG) approved effective fall 2012 (OET002 - Digital Circuits).

(3+3)

Prerequisite: MTH090

**EET231 Microprocessors 4 Cr. Hrs.**

In this course the student will gain a fundamental understanding of the microprocessor and microcontroller. Microprocessor architecture and hardware including bus structures, memory, and input/output (I/O) will be studied. Operation of the microprocessor/controller will be programmed by the student using hardware specific Assembly language. Real-world applications using the microprocessor and microcontroller will also be discussed. These topics will be learned through text, presentations, various exercises, and hands-on labs.

(3+2)

Prerequisite: EET221

**EET240 Engineering Programming 3 Cr. Hrs.**

This course is the study of the popular Visual Basic 6.0 programming language. The focus will be on the student learning statement language and visual programming. Projects and learning activities will include Engineering and Industrial Maintenance applications.

(2+2)

Prerequisite: MTH090

**EET272 Networking I 3 Cr. Hrs.**

This is an introductory course in data networking focusing on cabling, Ethernet protocols, switching and routing. Discussion topics include the OSI model, Ethernet, TCP/IP, network hardware, data cabling, IPv4 and IPv6 addressing, designing TCP/IP networks, and troubleshooting. The course is mix of classroom learning and hands-on laboratory using real networking equipment.

(2+2)

Prerequisite: MTH090

**EET277 Industrial Electronics 3 Cr. Hrs.**

This course is a study of the electronic devices used in modern day industrial machinery. Solid state switching devices will be discussed, that includes transistors, SCRs and Triacs, as well as the firing devices used in current controlled circuits. Power supply circuits and basic amplifier circuits using Operational Amplifiers will also be discussed. Students will focus on operation, application and troubleshooting of the various electronic devices. Transfer Assurance Guide (TAG) approved effective fall 2012 (OET005 - Electronics).

(2+2)

Prerequisite: IND120



**EET282 Networking II 3 Cr. Hrs.**  
 This is an intermediate level networking course meant to be a second course in data networking. Discussion topics include, but are not limited to, spanning tree, configuring and installing routers, understanding IP routing, wide area networking implementation and technology, IPv4 and IPv6 routing protocols, network management and troubleshooting. The course is mix of classroom learning and hands-on laboratory using real networking equipment.  
 (2+2)  
 Prerequisite: EET272

**EET289 Systems Integration 3 Cr. Hrs.**  
 This course is a capstone for the Manufacturing Maintenance, Industrial Electrical, PLC Certificate and Maintenance Technician/Mechatronics Programs. Upon the completion of the requirements for the previously mentioned programs the learner will display his/her newly developed skills by designing an industrially related system, (electrical and pneumatic), install the appropriate electrical and mechanical devices and troubleshoot the system to 100% of the design specifications.  
 (2+2)  
 Prerequisites: PLC200 and IND134

**EMS102 EMT Basic I 4 Cr. Hrs.**  
 This course provides an overview of the Emergency Medical Services system and the roles and responsibilities of the Basic EMT. Topics include basic medical emergency management, patient assessment and triage, multi-system trauma management, patient stabilization and transportation. This course, along with successful completion of EMT Basic II, follows state and national guidelines for certification as a Basic EMT. The course requires hands-on laboratory and clinical experiences.  
 (3+2)

**EMS103 EMT Basic II 3 Cr. Hrs.**  
 This course provides training on special needs patients, including geriatric and pediatric patients as well as EMS Special Operations. Assessment based management of patients will be discussed. Laboratory experiences and clinical rotations are a required component of this course. Students must successfully complete EMT Basic I in order to enroll in this course.  
 (2 + 2)  
 Prerequisite: EMS 102

**EMS202 EMT Advanced I 5 Cr. Hrs.**  
 This course emphasizes the roles and responsibilities of the EMT-I and includes medical/legal considerations, basic pharmacology, medication administration, airway management, and advanced assessment techniques. The laboratory component includes procedures in IV therapy, shock management, cardiac management and EKG interpretation. This course, along with successful completion of EMT Intermediate II, follows state and national guidelines for certification as an EMT-I. Students must submit verification of current Ohio EMT-Basic certification.  
 (4+2)  
 Prerequisite: EMS103 and Current Ohio EMT-Basic Certification

**EMS203 EMT Advanced II 3 Cr. Hrs.**  
 This course provides the Intermediate EMT advanced training on emergency care of special needs patients, including geriatric and pediatric patients as well as a review of EMS Operations. Laboratory experiences and clinical rotations are a required component of this course. Students must successfully complete EMT Intermediate I in order to enroll in this course.  
 (2 + 2)  
 Prerequisite: EMS 202

**ENG095 Integrated College Reading & Writing 4 Cr. Hrs.**  
 ENG095 blends the strategies necessary for successful reading in college courses with the writing processes which will lead to clear and effective communication. The course will emphasize skills for efficient, independent learning from textbooks and other college reading materials, with the emphasis on vocabulary development. It reviews the steps for composing college-level paragraphs and essays, including a review of common grammatical structures used in formal academic writing.  
 (4+0)  
 Prerequisite: Satisfactory score on Course Placement Test

**ENG099 Writing Skills Workshop 2 Cr. Hrs.**  
 ENG 099 introduces basic strategies for effective written communication with an emphasis on grammar, punctuation, and syntax. It scaffolds topics and supplements knowledge of genre assignments from its required co-requisite course, ENG 111, in a hands-on, collaborative writing workshop meant to support and transition students to success in college level writing tasks in an accelerated environment.  
 (2+0)

**Composition I 3 Cr. Hrs.**  
 An expository composition course emphasizing the expectations of college-level writing, including thesis development, support, and coherence. Students will gain experience using a variety of rhetorical modes. In addition to a number of full-length essays, a short documented paper, based on research materials and using parenthetical references, is required.  
 (3+0)  
 Prerequisite: ENG095, or concurrent in ENG099, or satisfactory score on Course Placement Test

**ENG112 Composition II 3 Cr. Hrs.**  
 Building on the skills learned in Composition I, this course further develops the student's writing and research experience, with an emphasis on analytical writing in response to critical reading and class discussion. Using MLA parenthetical documentation techniques, the student will write several short essays and a research paper.  
 (3+0)  
 Prerequisite: ENG111 with grade of "C" or better

**ENG113 Speech 3 Cr. Hrs.**  
 This course provides experience in public speaking. Organization of ideas, improvement of critical thinking skills, and the use of visual aids are important parts of the course. Student speeches are analyzed and critiqued for effectiveness. Transfer Assurance Guide (TAG) approved effective summer 2007 (OCM004 - Basic Public Speaking/Oral Communication).  
 (3+0)



**ENG210 Technical Communications 3 Cr. Hrs.**

This course develops written and oral communication skills needed in technical fields, focusing on producing documents, effectively conducting group discussions, and giving presentations. It includes formal individual and group technical reports as well as shorter documents common to technical fields, emphasizing clear, concise, and logical communication strategies, format and visual aids.

(3+0)

Prerequisite: ENG112 or instructor permission

**ENG214 Discussion & Conference Method 3 Cr. Hrs.**

Focuses on the elements of communication and small group theory as employed in a group discussion situation with emphasis on the individual's responsibility in the discussion setting. Focuses on the development of the leadership abilities within the group, including analysis of group interaction in the decision-making process for task-oriented groups. Transfer Assurance Guide (TAG) approved effective summer 2007 (OCM003 - Small Group Communication).

(3+0)

**ENG217 Introduction to Creative Writing 3 Cr. Hrs.**

A multi-genre writing course which explores poetry, fiction and drama. Students will write and workshop original works and learn the basics of craft for each area, including: imagery, meter/form, character, metaphor, dialogue, story, setting, and voice. Reading selections emphasize contemporary and historical writers, and students develop a writing portfolio of revised creative works across three genres.

(3+0)

Prerequisite: ENG111 with "C" or better

**ENG223 Interpretation of Literature 3 Cr. Hrs.**

Introduces the elements of critical reading of literature, specifically fiction, poetry, and drama. Topics such as structure, character, point of view, style, theme, tone, and symbolism first are defined, then applied to selected pieces of literature. Examines the importance of historical, cultural, and literary contexts for understanding literature. **Writing intensive.**

(3+0)

Prerequisite: ENG111

**ENG230 Children's Literature 3 Cr. Hrs.**

Reading and evaluation of nonfiction and fiction, folklore, myth, poetry, and illustrated books for children and adolescents from critical and multi-cultural points of view. **Writing intensive.**

(3+0)

Prerequisite: ENG111

**ENG240 Introduction to Poetry 3 Cr. Hrs.**

Introduces the elements of critical reading of poetry, including poetic language, imagery, and forms. Focuses on poems as expressions of important themes of human experience and as products of their historical and cultural contexts. **Writing intensive.**

(3+0)

Prerequisite: ENG111

**ENG241 Introduction to Fiction 3 Cr. Hrs.**

Focuses on a critical reading of fiction, particularly short stories, examining formal elements, including plot, character, setting, point of view, and theme. Introduces various critical perspectives for the interpretation of fiction, including the importance of historical, cultural, and literary contexts for understanding fiction. **Writing intensive.**

(3+0)

Prerequisite: ENG111

**ENG250 American Literature 3 Cr. Hrs.  
Through the Mid-19th Century**

Surveys American literary works ranging from recorded Native American oral traditions through the literature of the Civil War period. Places works in historical and cultural contexts, focusing on the development of major themes and movements in American literature. Transfer Assurance Guide (TAG) approved effective fall 2005 (OAH250 - American Literature I). **Writing intensive.**

(3+0)

Prerequisite: ENG111

**ENG251 American Literature 3 Cr. Hrs.  
Since Mid-19th Century**

Surveys American literary works from the late nineteenth century through the contemporary period. Places works in historical and cultural contexts, focusing on the development of major themes and movements in American literature. Transfer Assurance Guide (TAG) approved effective summer 2009 (OAH054 - American Literature II). **Writing intensive.**

(3+0)

Prerequisite: ENG111

**ENG260 British Literature 3 Cr. Hrs.  
Through the 18th Century**

This course focuses on British literature from the Old English period through the Restoration and eighteenth century examining writers and representative literary texts, including poetry, drama, and prose fiction and non-fiction, as they reflect cultural and historical contexts. Transfer Assurance Guide (TAG) approved effective spring 2009 (OAH055 - British Literature I). **Writing intensive.**

(3+0)

Prerequisite: ENG111

**ENG261 British Literature 3 Cr. Hrs.  
19th Century to Present**

This course focuses on British literature from the Romantic period through the twentieth century, examining writers and representative literary texts, including poetry, drama, and prose fiction and non-fiction, as they reflect cultural and historical contexts. Transfer Assurance Guide (TAG) approved effective spring 2009 (OAH056 - British Literature II). **Writing intensive.**

(3+0)

Prerequisite: ENG111

**FRA100 Fraud Detection & Deterrence 3 Cr. Hrs.**

The opportunity to commit and conceal fraud exists only when there are assets susceptible to misappropriation and a lack of internal controls to prevent or detect fraud. This course will focus on the high-risk fraud environments wherein assets are more vulnerable to misappropriation and fraud environments heightened by either a lack of, or non-functioning of, internal controls. Various fraud investigative methods and the process for communicating an expert report will play an essential role in these studies.

(3+0)

**FRA200 Fraud Examination 3 Cr. Hrs.**  
A study covering occupational fraud and abuse including asset misappropriation, corruption, and fraudulent statements. The course provides an understanding of fraud examination methodology, and sets forth the schemes used by executives, managers, and the employees to commit fraud against their organizations. It provides an analysis of various kinds of frauds and includes cases that illustrate and help the student understand each type of fraud. Based on extensive empirical research in forensic accounting, the course aids the student in identifying exposure to loss and appropriate prevention, detection, and investigation approaches.  
(3+0)  
Prerequisite: ACC111

**FRA210 Legal Elements of Fraud 3 Cr. Hrs.**  
There are four general elements under common law, all of which must be present for fraud to exist: (1) a material false statement, (2) intent, (3) reliance on the false statement by the victim, and (4) damages. This course takes an in-depth look at each of these components in relation to crimes that fall under the umbrella of fraud. It also emphasizes federal legislation related to fraud examinations including coverage of laws that preserve the rights of individuals suspected of committing fraud and laws that govern civil prosecutions, the admittance of evidence, and the testimony of expert witnesses.  
(3+0)  
Prerequisite: ACC111

**FRA220 Corporate Internal Control & Governance 3 Cr. Hrs.**  
Under the Sarbanes-Oxley Act of 2002, CEOs and CFOs must now sign on the dotted line, personally attesting to the accuracy of financial statements and to the fact that their companies have proper internal controls to prevent and detect fraud. This course helps in understanding complex compliance requirements, identify types of fraud, implement awareness and prevention training, and establish a robust fraud detection, investigation, and prevention program. More importantly, it will examine how companies can effectively establish an ongoing culture of compliance.  
(3+0)  
Prerequisite: ACC111

**GEO110 World Geography 3 Cr. Hrs.**  
This course conveys the nature, challenges, and component interrelatedness of the discipline of geography. The geographic method of inquiry is used to describe, explain, and analyze our environment. The principal goal of the course is to give the student a global perspective from which he or she can view the uniqueness of the discipline. Thus the student is introduced to the tools, vocabulary, and the spatial orientation used by the geographer. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSS008 - Geography).  
(3+0)

**GEO210 Geography - U.S. & Canada 3 Cr. Hrs.**  
A study of the human geography of the U.S. and Canada, covering the geographic influence on the demographic, economic, political, and cultural themes of these neighboring countries, which share a common geography and history in many respects. Major focus is on human patterns and the interaction among these patterns as well as the actual physical environment.  
(3+0)

**GSD100 Success Seminar 3 Cr. Hrs.**  
In this course students will learn to evaluate themselves as learners, and improve their learning habits and attitudes. Students will develop strategies for maximizing effectiveness in college, work, and community settings.  
(1+0)  
Required course for students who test into either developmental math or English courses. It is required for students on Academic Probation or those returning from Academic Suspension. This course is open to any student and could be used as 1 credit General Studies elective.

**GSD120 Career and Life Planning 3 Cr. Hrs.**  
This class assists the student in examining the components of career choice. The focus is on career awareness, personal awareness, and educational awareness as they relate to the process of career choice. Planning skills and self-assessment instruments will help identify tentative career options. Decision-making strategies, resume writing, interviewing skills, and job search techniques will be reviewed.  
(3+0)

**HIS101 U.S. History Pre-1876 3 Cr. Hrs.**  
A study of the social, political, and economic development of the United States through the Post Civil War period. Several critical periods in early American History are examined: colonization, settlement, rebellions, revolutions, constitution making, Jeffersonian and Jacksonian democracy, slavery, the westward movement, the Indian problems, and the Civil War. Transfer Assurance Guide (TAG) approved effective summer 2008 (OHS043 - U.S. American History I and OHS010 - U.S. American History Sequence, Course 1 of 2). **Writing intensive.**  
(3+0)  
Co-requisite: ENG111

**HIS102 U.S. History Post-1876 3 Cr. Hrs.**  
United States from the Reconstruction period to the present. Topics include reconstruction, impact of industrialization, agricultural revolution, populism, rise of monopoly capital in the "progressive" era, the age of imperialism, WWI, Great Depression, WWII, the New Deal, the Welfare State, the Vietnam War and the popular protests, the civil rights movement, the rejection of the welfare state and rise of Neo-Conservatism. Transfer Assurance Guide (TAG) approved effective summer 2008 (OHS044 - U.S. American History II and OHS010 - U.S. American History Sequence, Course 2 of 2). **Writing intensive.**  
(3+0)  
Co-requisite: ENG111

**HIS203 U.S. Since 1945 3 Cr. Hrs.**  
A contemporary history of the United States which provides a balanced account of foreign affairs, domestic politics, and social and cultural change. Presents change from U.S. global hegemony to a truly global economy as the backdrop for the replacement of the liberal-welfare state with the neo-conservative state. Relates this important transition to the form and content of popular protest since 1945. Topics include the New Deal, the Cold War, confronting the Third World, struggles for equality, and mass media effects on popular culture. **Writing intensive.**  
(3+0)  
Co-requisite: ENG111

**HIS210 The Modern World 3 Cr. Hrs.**  
 Joins a study of the history of the modern world with students' understanding of their place in the contemporary world. Competing histories of the modern world's origins are followed by a comparative study of western and non-western societies and the forces giving rise to modernism, reaction, revolution, and postmodern tendencies from the 13th century to the present times. **Writing intensive.**  
 (3+0)  
 Co-requisite: ENG111

**HIS290 Historic Preservation Internship 3 Cr. Hrs.**  
 The Co-Op/Internship is an experience in which the student works in a position consistent with the program major. The student is expected to integrate skills learned in program courses with job responsibilities, while applying work experience to class activities. Primary work duties are documented through a work log, incident summary, focused report, and a site visit.  
 (1+20)  
 Prerequisite: Permission of Instructor

**HPF106 Beginning Western/English Horsemanship 1 Cr. Hr.**  
 This course is designed for the novice or beginner who has had little or no exposure to horses or riding. Students will learn horses and riding from the "ground-up" in which the very basics of horsemanship is taught. The instructor tries to match each student's abilities with a specific horse while keeping in mind everyone's safety is of the highest concern. All classes are conducted at Sanderson Stables, located on the corner of Union and Washington Streets, Cygnet, Ohio 43413; phone 419-655-2253. Sanderson Stables owns and maintains horses, tack, and grounds specifically for appropriate instruction. This course can also be taken as many times as the student desires. This course is many times used to fulfill the physical education requirement at the university level  
 (1+0)

**HPF107 Intermediate Rider 1 Cr. Hr.**  
 This course is designed for Intermediate level riders who have mastered the HPF106 level skills and thus builds on those skills. The instructor tries to match each student's abilities with a specific horse while keeping in mind everyone's safety is the highest concern. The focus of this course is on handling the horse on the ground and in the saddle, as well as practicing the jog, lope and lead departures.  
 (1+0)

**HPF108 Advanced Rider 1 Cr. Hr.**  
 This course is designed for advanced level rider who has mastered the HPF107 level skills and thus builds on those skills. The focus of this course is on tack room procedures, as well as advanced riding methods, trail riding, trotting, buggies, carts and using a driving harness.  
 (1+0)

**HST101 Principles of Human Services 3 Cr. Hrs.**  
 This course explores educational considerations for teachers including the policies, theories, practices, skills, and knowledge of home, school, and community partnerships. Students will examine: the multiple influences on the whole child; accessibility of community services and supports; ethical, practical, and culturally competent decisions to foster family engagement; knowledge and skills needed to address family structure, socio-cultural and linguistic backgrounds, identities and customs, and advocacy for children and families.  
 Prerequisites: EDU100  
 (3+0)

**HST105 Cultural Competence with Diverse Populations 3 Cr. Hrs.**  
 This course identifies the special needs and issues involved in providing human services to diverse populations. Diversity includes but is not limited to race, ethnicity, gender, religion, sexual orientation, disability, age and socioeconomic status. The focus is on the inequalities affecting these groups, culturally relevant intervention strategies used at the micro, mezzo and macro levels of practice and advocacy strategies used in the pursuit of social, economic and environmental justice.  
 (3+0)  
 Prerequisite: HST 101 and PSY 110

**HST108 Principles of Developmental Disability 3 Cr. Hrs.**  
 A principles course in the field of Mental Retardation and Developmental Disabilities and the historical and legal perspectives within the field. Course includes service delivery models, current trends, prevention issues, causes, conditions and characteristics.  
 (3+0)

**HST112 Group Work in Human Services 3 Cr. Hrs.**  
 This course in an introduction to basic knowledge, techniques, and skills used by Human Service workers in facilitating groups. Group dynamics, theory, leadership skills and techniques used in facilitating groups will be examined and applied to a variety of task and treatment groups utilized in Human Service settings with various target populations.  
 (3+0) S

**HST208 Interviewing Techniques 3 Cr. Hrs.**  
 This course is focused on helping students understand and develop basic interviewing skills used in working with clients in human service settings. Emphasis is placed on developing collaborative relationships with clients, understanding the role of nonverbal communication, use of appropriate verbal responses, conducting assessments, developing service plans and evaluation strategies used to measure progress. A segment of the course is devoted to developing crisis intervention skills and techniques.  
 (3+0)  
 Prerequisites: PSY110, HST101, and HST105

**HST210 Human Services Methods 6 Cr. Hrs.**  
 A practical, in-house lab experience meant to prepare students for their actual experience in a human service agency. Seminar format provides for discussion and integration of experiences with academic courses. Open only to Human Services Technology majors who have completed 18 credit hours of Human Services technical courses with a grade of "C" or better. Labs for this course will consist of supervised labs/lab hours to be arranged in-house along with field lab hours. Supervised by Master Level Social Worker, State Licensed.  
 (4+4)  
 Prerequisites: HST101, HST105, PSY210, and HST112  
 Co-requisite: HST208



**HST212 Principles of Addiction 3 Cr. Hrs.**  
Presents substance abuse and addictive problems from an addictions model approach. A historical, cultural, and social context is presented as well as an overview of the theories of addiction. Other major topics: recognizing early signs and symptoms of substance abuse, differences in counseling strategies with substance abusers, and other derivative problems. This is a foundation course with a scientific base. Family systems are reviewed.  
(3+0)

**HST214 Human Services Case Management 3 Cr. Hrs.**  
Provides the experience and knowledge of the human service worker providing case management functions. Areas of concentration include service provisions when working with special populations. The provisions include, but are not limited to, client identification, individual assessment and diagnosis, determining service needs of the client, service planning and resource identification, linking the client to appropriate services, service implementation, how to monitor service delivery, how to advocate, and evaluation of service delivery. Special emphasis is on specific target populations, and services available.  
(3+0)  
Prerequisites: HST208 & HST210 or Instructor Permission

**HST222 Ethics in the Helping Profession 3 Cr. Hrs.**  
The practice of counseling and related helping professions is regulated both by law and by professional standards of practice or codes of ethics, which provide only general guidelines. This course will look at historical and contemporary theories of relevant ethical theories and provide exposure to real-life ethical issues from a multi disciplinary approach.  
(3+0)  
Prerequisite: HST101

**HST240 Social Problems 3 Cr. Hrs.**  
An examination of the major social problems existing in western society and how various conditions within society come to be defined as social problems. Topics include such areas as poverty, racism, sexism, unemployment, AIDS, and abusive behaviors (physical, psychological, sexual abuse, and neglect). Analysis of each of these problems along with the social welfare system's responses and the role of the human services worker. Transfer Assurance Guide (TAG) approved effective fall 2007 (OSS025 - Social Problems).  
(3+0)

**HST242 Marriage and Family 3 Cr. Hrs.**  
A comprehensive look at relationships in which the content includes: marriage, cohabitation, singles, family dynamics (parenting, adoption, etc.), historical and cultural differences in both traditional and contemporary settings; life span development, divorce, domestic violence, death and dying issues. Theoretical frame works as well as practical application of those theories will be covered. Transfer Assurance Guide (TAG) approved effective fall 2007 (OSS023 - Marriage and Family).  
(3+0)

**HST280 Special Problems in I Human Services 1-6 Cr. Hrs.**  
Permission of Human Services instructor required. Content, methodology, and purpose to be arranged on an individual basis. Credit will be determined by the nature and extent of the independent study.  
Prerequisite: Permission of Instructor

**HST282 Special Problems Human Services III-6 Cr. Hrs.**  
An independent study which focuses on a topic or individual selected problems in Human Services. Subject to approval and supervision of an assigned Human Services instructor. Content, methodology, and purpose to be arranged on an individual basis. Credit will be determined by the nature and extent of the independent study.  
Prerequisite: Permission of Instructor

**HST290 Practicum I 6 Cr. Hrs.**  
Practical experience in a human services agency. Two-hour seminar provides for discussion and integration of experiences with academic courses. Open only to Human Services Technology majors who have completed a minimum of 45 credit hours of work and have completed 24 credit hours of Human Services technical courses with a grade of "C" or better.  
(2+16)  
Prerequisites: HST208 and HST210  
Co-requisite: HST214

**HUM209 Humanities & Cultures: Ancient & Medieval Worlds 3 Cr. Hrs.**  
Surveys Western and non-Western humanities of the ancient and medieval worlds. Examines creative expression, such as art, literature, and philosophy, as evidence of the evolution of ideas that serve as the roots of modern cultures. Transfer Assurance Guide (TAG) approved effective summer 2008 (OHS041 - Western/World Civilization I and OHS009 - Western/World Civilization Sequence, Course 1 of 2). **Writing intensive.**  
(3+0)  
Co-requisite: ENG111

**HUM210 Humanities & Cultures: Renaissance to Present 3 Cr. Hrs.**  
Examines various Western and non-Western creative traditions, including art, literature, and philosophy, during and after the Renaissance. Focuses on the interaction of ideas and traditions in the modern world. Transfer Assurance Guide (TAG) approved effective summer 2008 (OHS042 - Western/World Civilization II and OHS009 - Western/World Civilization Sequence, Course 2 of 2). **Writing intensive.**  
(3+0)  
Co-requisite: ENG111

**HUM221 Music Appreciation 3 Cr. Hrs.**  
The study of vocal and instrumental music from the standard repertoire primarily through listening. Previous music training is not required, but regular listening is part of the course. **Writing intensive.**  
(3+0)  
Co-requisite: ENG111

**HUM230 Art Appreciation 3 Cr. Hrs.**  
Theories and philosophies of art history and aesthetics covering prehistoric art to modern art. Students will learn to analyze and respond actively to art, using appropriate artistic concepts and vocabulary. **Writing intensive.**  
(3+0)  
Co-requisite: ENG111



**IND100 Precision Measurement 3 Cr. Hrs.**

This course provides the student with theory and skills needed to perform dimensional inspections. Students will learn to study a part print, select, and use the proper measuring tool(s). Concepts introduced include precision, discrimination, accuracy, and calibration. Expands previously learned print reading skills to include Geometric Dimensioning and Tolerancing.

(2+2)

**IND103 Applied Geometry & Trigonometry 3 Cr. Hrs.**

Geometry includes definitions and descriptions of geometric terms, axioms, theorems, propositions dealing with straight lines, triangles, polygons, and circles, as well as perpendicular and parallel relationships. Trigonometry includes definitions of basic trigonometric functions, use of trigonometric tables, solutions of right triangle and oblique triangle problems, use of sine, cosine, tangent and their reciprocals in the solutions of unknown angles, logarithms, and practical shop problems.

(2+2)

Prerequisite: MTH080

**IND105 Industrial Safety 2 Cr. Hrs.**

This is a course in hazard recognition based on OSHA recommended standards. Although students learn to identify potential hazards in the workplace, they will also develop a greater awareness of hazards in their environment. Students will also certify in CPR through the American Heart Association.

(2+0)

**IND107 Print Reading and Sketching 3 Cr. Hrs.**

Print Reading and Sketching is designed to give a basic overview of the following: abbreviations, terminology, different line types, view identification, dimensioning practices, dimensioning calculations, tolerance calculations, and sketching including geometric construction, orthographic projection, isometric, section and auxiliary views.

(2+2)

**IND110 Industrial Computing I 3 Cr. Hrs.**

This course is a study of the application of computer systems as found in an industrial environment. The focus of this class will be on operating systems, networking and computer hardware. This class will be taught at an applied level for the Skilled Trades Person, Technician, and Engineer.

(2+2)

**IND120 Industrial Electricity I 3 Cr. Hrs.**

This is an introductory electricity course for skilled trade's personnel. The course is a study of DC and AC electricity principles, with a practical approach to applications in an industrial environment. The learner will obtain a knowledgeable understanding of the key symbols and abbreviations associated with the electrical trade, acquire a comprehensive understanding of basic electrical terminology, apply Ohm's Law to a number of relevant electrical applications, and synthesize a number of components into a working system involving series, parallel, and series parallel circuits.

(2+2)

Prerequisite: MTH050

**IND121 Industrial Electricity II 3 Cr. Hrs.**

This course is an advanced study of Industrial Electricity providing comprehensive coverage of the control devices used in contemporary industrial electrical systems. The focus of this course is to provide the architecture for acquiring the knowledge and skills required in an advanced manufacturing environment. The course continues with electrical and motor theory, building on circuit fundamentals and reinforcing these with practical hands-on labs designed to reinforce the concepts and provide control systems design experience. These topics will be learned through text, presentations, various exercises, and hands-on labs.

(2+2)

Prerequisite: IND120 or instructor permission

**IND122 Industrial Wiring (NEC) 3 Cr. Hrs.**

The primary purpose of this course is to acquaint the learner with a ready source of information relevant to the NEC (National Electric Code), IEC (International Electrotechnical Commission), AISI (American Iron and Steel Institute), NFPA, (National Fire Protection Association), ANSI (American National Standards Institute), UL (Underwriters Laboratories, Inc.), OSHA (Occupational Safety and Health Act), and various Local Codes. This information will focus primarily on the electrical design and engineering of most site work including, but not limited to, industrial, commercial, and residential occupancies.

(2+2)

Prerequisite: IND120

**IND130 Rigging and Erecting 2 Cr. Hrs.**

This course incorporates the basic laws of physics to moving, setting-up, and securing machinery. Leverage and mechanical advantage, and the care and selection of equipment are taken in consideration while calculating load weights based on various shapes and types of material. Upon completion learners will be able to calculate sling angle tension and how to apply relevant information to different rigging hitches while determining the correct size of rigging tools needed for the job. Learners will apply lecture material to lab applications including mobile crane safety, inspection, hand signals, and proper load chart usage.

(2+0)

**IND131 Industrial Pipefitting 3 Cr. Hrs.**

A study of the specifications, application, installation, and maintenance of various kinds of pipe, fittings, valves, pumps, and hand tools. The analysis of job requirements in terms of materials, time utilization and sequence of operation is discussed.

(2+2)

Prerequisite: MTH050

**IND132 Bench Work 2 Cr. Hrs.**

This is the first basic machine shop course in which students learn the use of hand tools. Students are required to select appropriate tools and identify machining processes with emphasis on safety, tooling, precision, and accuracy. Topics include: materials, mechanical fasteners, measurement, tolerance, fit, layout, hand tools, power tools, drilling, grinding, sharpening, hardening, deburring, filing, polishing, layout work on the bench, use of hand taps, and cutting threads with a die.

(2+0)

**IND134 Industrial Fluid Power I 3 Cr. Hrs.**

Fluid power is an efficient way to move energy without mechanical belts, chains, or levers. The physics of fluids, components, and troubleshooting and design applications for hydraulic and pneumatic systems are covered in this class.  
(2+3)

Prerequisite: IND120

**IND140 Principles of Machining 3 Cr. Hrs.**

The focus of this course is to provide the student with a basic foundation in the skills needed to perform basic machining methods. The student will develop key techniques that will aid in proper selection, identification, and application of machines and machining methods. Hands-on laboratory work with the lathes, mills, drills, grinders, fixture utilization, feeds and speeds, is emphasized. Special emphasis will be placed on safety, precision, accuracy, and teamwork in completion of assigned lab projects. The student will be required to interpret basic blueprints and manufacture parts to print specifications.  
(2+3)

Co-requisite: MET110

**IND141 Metallurgy & Heat Treatment 2 Cr. Hrs.**

A basic course covering the nature and behavior of metals, crystalline structure, theory of alloys, principles of heat treatment, properties of metals and alloys and testing applications. The Rockwell and Brinell hardness testers will be used.  
(2+0)

Prerequisite: MTH080

**IND220 Electrical Prints & Troubleshooting 3 Cr. Hrs.**

This course is a study of the systematic elimination of the various parts of a system or process to locate a malfunctioning part. The learner will obtain a knowledgeable understanding of the key symbols and abbreviations associated with the electrical trade, acquire a comprehensive understanding of the various devices associated with an electrical circuit, synthesize a number of electrical components associated with a viable sequence of operation, recognize a malfunctioning circuit through proper meter application, and apply informed terminology while troubleshooting and restoring a malfunctioning system to its original intention promptly but safely.  
(2+2)

Co-requisite: IND121

**IND221 Instrumentation & Controls I 3 Cr. Hrs.**

This course is a study of the operation and troubleshooting of Industrial Instrumentation systems. The focus will be on analog monitoring and controlled devices, connected to stand alone and PLC based controller systems. The concepts of temperature, pressure, level and flow will be discussed, as well as the transmitters that connect the analog sensor signals to the analog I/O.  
(2+2)

Prerequisite: PLC200

**IND223 Motors & Motor Controls 3 Cr. Hrs.**

This course is an advanced study and laboratory for learners who have an understanding of electrical circuits, controls and desire practical hands-on experience of various motor and control devices. Coursework involves hands-on laboratory experience utilizing 120vac, 208/240 VAC as well as text study. Practical application of principles learned will be emphasized. Special topics in electricity will be introduced to the learners according to class interests. Topics of study will include ladder diagrams and their control of alternating and direct current motors. Motor starter sizing, circuit/overload protection, electrical motor branch wiring will also be introduced. The Variable Frequency Drive as a motor controller will also be introduced as well as the application of the programmable logic controller in motor control circuits. The learner will also be responsible for any outside assignments as well as the successful completion of all required laboratory demonstrations. These topics will be learned through text, presentations, various exercises, and hands on labs.  
(2+2)

Prerequisite: IND121

**IND232 Machine Repair 3 Cr. Hrs.**

Basic fundamentals of methods and means to rebuild a production machine such as realignment of columns of tables, scraping of ways, replacing spindles, gears, bearings, gibs, etc.  
(2+2)

Prerequisite: IND132

**IND234 Industrial Fluid Power II 3 Cr. Hrs.**

In this class, the student will use electro-pneumatic and electro-hydraulic components controlled by a programmable logic controller (PLC). The student will be able to construct, write, and troubleshoot a complete electro-pneumatic or electro-hydraulic circuit controlled by a PLC. The students will build, design, and troubleshoot machines using pneumatics, hydraulics, and electrical components.  
(2+2)

Prerequisite: IND134

**IND240 Machining Processes II 3 Cr. Hrs.**

This class is intended to better the student's skills learned in IND140. This class is focused on the student applying their ability to use machine shop equipment to machine projects that apply to the machining, tooling and print reading technologies. Students will focus on machining industrial parts from well documented and professional prints, as well as from documented sketches created on a factory floor on their own. Projects should be more advanced than projects developed in IND140. Students will be assessed by their accuracy, efficiency and finished product using their abilities.  
(2+2)

Prerequisite: IND140

**IND241 Tooling & Fixtures – Lubricants & Coolants 3 Cr. Hrs.**

Tooling, Jigs & Fixtures, Dies, Lubricants and Coolants are an integral part of modern machine practices. This course will provide the student with a basic foundation in Tooling, Jigs & Fixtures, and Die application and theory. Tool selection, tool application, tooling speeds and feeds will be emphasized. Jig & Fixture application will introduce the student to the use of Jigs & Fixtures in machining practices, datums of Jigs & Fixtures, and choice of Jigs & Fixtures for specific applications. Basic Die theory and design will be studied. The function, use, and types of lubricants and coolants will be covered in depth.  
(2+2)

Prerequisite: IND140

**IND250 Capstone Project (CNC Operations) 3 Cr. Hrs.**

This course will focus on a comprehensive project that will require the student to utilize the knowledge and skill learned throughout the program, in order to prepare to work in a CNC production environment. This experiential learning will focus on an actual project setup by a company that would potentially hire students from this program. Students will interact with the instructor and possibly in a small group setting with other students in the class, yet be assessed independently. The end result will be the student setting up and maintaining a CNC machining process in a plant floor environment.

(2+3)

**INT101 Metrics for Welding 1-4 Credits**

This course is designed to help the skilled trades person understand the metric system, its prefixes, lengths, volumes, and weights; and, how to convert these units from the English metric system and/or vice versa.

(1+0)

**INT102 Welding Safety 1-4 Credits**

This course covers safety and health topics for workers involved in construction, general fabrication, and maintenance. The focus of the class will be on exposing potential hazards and safety or health problems associated with welding; showing that with properly instituted precautionary measures, welding is a safe occupation.

(1+0)

**INT103 Welding Processes I 3 Credits**

This course is a study of the major welding processes. The focus of the class will be on learning the principles and practices of these processes in the classroom and laboratory.

(2+2)

**INT104 Intro to Ironworking 1-4 Credits**

This course is an introduction to ironworking and its place in the construction industry. The focus of the class will be on revealing the nature of work, working conditions, employment, training, wage, and advancement opportunities.

(1+0)

**INT105 Pre-Casting Basics 3 Cr. Hrs.**

This course is designed to cover the essentials of precast concrete products and their use in the construction industry. It is designed for skilled trades, construction workers, and those who perform maintenance and repair work, as well as those who install precast concrete work in new construction.

(2+2)

**INT106 Reinforcing Basics 3 Cr. Hrs.**

This course is designed to cover the essentials of the proper utilization of reinforcement bars and welded mesh for concrete construction of highways, bridges, office and other large buildings, and power transmission towers. The class is designed for skilled trades, construction, and maintenance personnel who build, maintain, and perform repairs on the above mentioned or similar structures.

(2+2)

**INT120 HVACRI 3 Cr. Hrs.**

An introductory Heating, Ventilation, Air Conditioning and Refrigeration course for skilled trades personnel. The course is a study of basic thermo-dynamic principles, with a practical approach to applications in a residential, commercial and industrial environment. The course will cover basic heating and cooling concepts, refrigerant properties, psychometrics, terminology, safety, troubleshooting and applications of basic mechanical heating and cooling components and their electric / mechanical control.

(2+2)

Prerequisite: IND120 or EET121

**INT200 Welding Processes II 2 Cr Hrs.**

This course is an advanced study of SMAW and its applications in construction, maintenance, repair, and general fabrication. The focus of the class will be on advanced SMAW practices and techniques which conform to standards, codes, and specifications.

(2+0)

**INT201 Rigging 3 Cr. Hrs**

This course is a study of rigging safety for the skilled trades' persons, maintenance personnel, and/or construction workers. The focus of the class will be on introducing the different types of rigging equipment and how to properly use them.

(2+2)

**INT202 Shielded Metal Arc Welding 2 Cr. Hrs**

This course is designed to develop basic knowledge and skills in the shielded metal arc welding process. The focus will be on welding terms and definitions, how to join common metals, joint and weld classifications, welding positions, power sources selection, and flat and horizontal welding techniques and practices.

(2+0)

**INT203 Shielded Metal Arc Welding 2 Cr. Hrs.**

This course is an advanced study of shielded metal arc welding practices and procedures. The focus will be on advanced topics in SMAW and weld quality.

(1+2)

**INT204 Structural Welding 3 Cr. Hrs.**

This course is the study of the basics of welding structures. The focus will be on the strength of the weld on the structure and how to best anchor and support beams and cross members on building structures.

(2+2)

**INT210 FCAW & GMAW Welding 5 Cr. Hrs.**

This course is an advanced study of gas metal arc welding, and flux core arc welding practices and procedures. The focus will

**INT212 Welding Fabrication 6 Cr. Hrs .**

A study of the layout and fabrication of an industrial product. The student will complete welding projects, applying layout procedures, joint design, and use of fixtures. The course is relative to actual industrial fabrication standards, with an emphasis on quality.

(5+2)



**INT213 Ornamental Welding I 5 Cr. Hrs.**  
This course is a study of the various types of fabrication equipment when working with iron and steel. This equipment is then applied in a process to fabricate curtain and window walls. Basic layout concepts are studied, as well as how to effectively apply sealants and glazes. Students will also learn how to test the systems that are fabricated.  
(4+2)

**INT214 Ornamental Welding 4 Cr. Hrs.**  
This course is an advanced study of ornamental welding. Students will learn how to install store fronts, entrance ways, swinging doors, sliding doors, hollow metal doors and balanced doors. Students will also study how to install service doors, sloped walls, stairs and handrails, toilet partitions and vanity supports.  
(3+2)

**INT215 Welding Certification 3 Cr. Hrs.**  
This course is a study of the inspection, testing, and codes of welding in a construction environment. Students will apply the AWS welding symbols in the FCAW, GMAW, and GTAW. A focus of the course will be on testing procedures and how these can be converted to a certification for a particular welding process.  
(2+2)

**INT220 HVACR II 3 Cr. Hrs.**  
An intermediate study of the HVAC field. Studies will include commercial and industrial designs and equipment, Load Calculations and System Sizing. Concepts of equipment control will be introduced featuring Low Voltage, High Voltage methodologies.  
(2+2)  
Prerequisite: INT120

**INT221 HVAC III Heating Systems 3 Cr. Hrs.**  
Learning outcomes to be developed in this course focus on the heating aspect of climate control. Topics to be covered would include “forced air” heating applications including natural gas, propane, fuel oil, electric resistance and heat-pump systems and their controls. Other heating topics would include Hydronics applications; i.e. residential, commercial and institutional boiler systems and their controls. Heat-pump technology will feature both “air-to-air” and geothermal technologies.  
(2+2)  
Prerequisite: INT220

**INT222 HVACR IV Advanced HVAC Control 3 Cr. Hrs**  
Learning outcomes to be developed in this course will focus on the various controls now being applied to HVAC-R systems. Electro-mechanical, pneumatic and Direct Digital Control (DDC) will be featured during this coursework with particular attention to DDC applications. The Programmable Logic Controller and its networking capabilities and user interface will be explored. Other topics explored will be the integration of fire/life safety systems with modern environmental equipment as well as system controlled environmental quality.  
(2+2)  
Prerequisite: INT221

**INT223 HVACR V Advanced Topics 3 Cr. Hrs.**  
Learning outcomes to be developed in this course will focus on some of the advanced and alternative energy efficient designs affecting climate control systems. Other topics to be covered may include energy auditing and energy management, energy procurement and energy cost accounting and advanced building architectural blue print interpretation.  
(2+2)  
Prerequisite: INT222

**INT230 High Pressure Welding 3 Cr. Hrs.**  
The high pressure pipe welding course is designed to prepare the student for welding qualification and certification in accordance with the ANSI/ASME Boiler and Pressure Vessel Code, Section IX. Through classroom and hands-on skill training the student will be afforded the opportunity to develop the knowledge and skill necessary to weld high pressure pipe, utilizing the shielded metal arc welding (SMAW) process in all four welding positions. Uphill welding progression will be utilized for the vertical welding.  
(2+2)

**ITR118 SPC Basics 1 Cr. Hr.**  
This course provides an introduction to basic Statistical Process Control (SPC) concepts and how the SPC tools can be used for problem solving in a work environment. The basics of data collection, charting and analysis will be reviewed as well as basic problem solving techniques (critical thinking, brainstorming, flowcharts and fishbone diagrams). Students will also learn how to identify and interpret basic SPC charts (pareto, histogram, scatter plot, run and pseudo control). Students will walk through a basic problem and use the SPC tools to find solutions.  
(1+0)

**ITR119 Intro to GIBBS CAM 1 Cr. Hr.**  
This is an introductory class on the use and application of GibbsCAM software. The focus will be on safety in programming, GibbsCAM interface, CAD elements, view, creating geometry, tool creation and description, tooling, machine operation (Mill, Lathe, EDC, etc.), rendering and post processing. Plenty of hands on with computer, CNC mills and lathe. This is a 16 hour course.  
(1+0)

**ITR121 GIBBS CAM- Intermediate 1 Cr. Hr.**  
An advanced study of GibbsCAM software, including: advanced mill, introductory 3D, coordinate systems, geometry creation in 3D, multi-axis basics, solid surface, solid modeling, surface modeling, core and cavities, 3D machining, lace cutting, tool path projections and importing (models, drawing, and geometry).  
(1+0)

**ITR132 Elec. Safe Work Practices 1 Cr. Hr.**  
This 16-20 hour seminar is focused toward plant maintenance personnel that are responsible for maintaining and troubleshooting electrical equipment in a production or process environment. Basic electrical terms will be discussed along with an emphasis on wiring and troubleshooting. Trainees will wire simple control circuits and troubleshoot faulted equipment, by using techniques and equipment covered in the seminar. Components covered include Start/Stop stations, Limit Switches, Solenoids, Pilot Lights, Relays, Motor Starters and Control Transformers. An emphasis will be on interpreting an electrical print.  
(1+0)



**ITR135 Principles and Theory of Mathematics** 4 Cr. Hrs.

This course is designed to provide the student with a focus on computational skills, basic algebra concepts, and beginning trigonometry as applied to electrical and industrial problems. Examples cover operations with whole numbers, fractions, decimals, ratios, proportions, and integers. Basic algebraic rules and techniques are included with focus on linear equations, graphing, and angles. Students will proceed at an individualized pace through the various operations, but complete at least entry level algebra and trigonometry concepts as applied in simulated career examples in which electricians measure and produce 60 degree and 120 degree angle bends for rigid and thinwall conduit installations. Iron workers will demonstrate simulated angular displacement of the welding head for overhead and underwater welds.

(3+2)

**ITR146 Industrial Hydraulics** 2 Cr. Hrs.

This is a beginning course on basic hydraulic systems in an industrial environment. The focus of the class will be on component identification, operation, blueprint reading, maintenance, and troubleshooting. The students will connect circuits according to print specifications and make the circuits functional. Students will also learn root cause analysis troubleshooting in a hydraulics circuit. The maintenance number for this course is: 2049. This is a 40 contact hour course.

(2+0)

**ITR147 FANUC Vision System** 2 Cr. Hrs.

This is a beginning course on vision systems used in an industrial setting. The focus of the class will be on the functionality and repair of a Fanuc robotic vision system. The course covers the functionality and layout of each vision component, how to set robot guidance, how to setup and troubleshoot the 4 vision tools namely locators, calipers, histograms, and blobs. The trainees will also setup a project and calibrate a 3D laser and a 2D camera. The maintenance number for this course is: 3092. This is a 40 contact hour course.

(2+0)

**ITR148 FANUC RJ3iB Elec Service** 2 Cr. Hrs.

This is a basic course on the functionality and repair of a Fanuc robotic system. The course covers the functionality and layout of each individual component, how the controller powers up, power distribution and signal tracing for AC and DC circuits. The trainees will also learn how to locate and identify all fuses and indicators, as well as the mapping and troubleshooting of inputs and outputs. The maintenance number for this course is: 3401. This is a 40 contact hour course.

(2+0)

**JAT100 Electrical Career Orientation** 2 Cr. Hrs.

This course includes orientation to the electrical career, apprenticeship, and the relationship between the National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW). Topics include workplace safety and hazards, building wire, insulation properties, and commonly used electrical materials. Application of math computations is emphasized.

(2+0)

**JAT102 National Electrical Code I** 2 Cr. Hrs.

This course includes introduction to the National Electrical Code (NEC) and interpretation of articles of the NEC requirements for wiring applications. Wire properties, conductor insulation, and wiring devices are emphasized. NEC requirements for installation of wiring devices are studied, including boxes, receptacles, switches, and fittings.

(2+0)

**JAT104 Conduit Fabrication I** 2 Cr. Hrs.

This course will focus on conduit fabrication. Emphasis is on using basic trigonometric functions, types of conduit, bending techniques, and conduit threading techniques. Hand bending at 90 degrees and bending kicks and offsets are included.

(1+2)

**JAT106 Conduit Fabrication II** 2 Cr. Hrs.

This course is a continuation of Conduit Fabrication I. Emphasis is on advanced types of bending, including three and four-bend saddles, push-through bending at 90 degrees, bending kicks, and offsets. Mechanical, electric, and hydraulic benders are used along with hand bending.

(1+2)

**JAT108 DC Theory I** 4 Cr. Hrs.

This course includes the principles of electricity and energy sources. There is an introduction to switches, conductors, and circuits. Voltage, wattage, resistance, electrical circuits, and Ohm's Law are included. Series circuits, parallel circuits, and combination circuits are studied. There is a focus on potential hazards and the use of test instruments.

(3+2)

**JAT110 AC Theory I** 3 Cr. Hrs.

This course includes the principles of electricity and energy sources and the basic characteristics of alternating current circuits. There is an introduction to AC resistive circuits, inductance, frequency, reactance, and vectors. RL circuits, voltage, impedance, current, and capacitance are included. Series and parallel capacitors are studied. There is a focus on potential hazards and working safely with capacitors.

(2+2)

**JAT112 Test Instruments** 1 Cr. Hr.

This course is a study of the general use of test instruments for electrical applications. There is an introduction to test instrument abbreviations and symbols, and the use of test instruments on receptacles, meters, and switches. There is also a focus on line splitters, troubleshooting hidden diodes, and generators.

(1+1)

**JAT114 Transformers I** 1 Cr. Hr.

This course is a study of transformer principles and operations. Topics emphasized are magnetism, polarity, step-up transformers, step-down transformers, and using windings to vary voltages. Delta-Delta and Delta-Wye transformers are included.

(1+1)

**JAT116 Electrical Safety I 2 Cr. Hrs.**  
This course will focus on electrical safety and safety-related work practices. Hazard awareness and a culture of safety are emphasized. OSHA requirements are studied, as well as the history, evolution, and scope of NFPA 70E. Lockout, tagging, and control of hazardous energy are stressed.  
(2+0)

**JAT118 Blueprints I 1 Cr. Hr.**  
This course will study of the fundamentals of blueprint drawing and making sketches. Emphasis is placed on understanding architectural views, common scales, elevation, and schedules. The use of electrical and mechanical symbols is included, as well as residential blueprints.  
(1+0)

**JAT120 Codeology – NEC 3 Cr. Hrs.**  
This course will study of the National Electrical Code (NEC) and how to access information in the code book. Locating code information and understanding keywords and phrases are emphasized. Students will be able to access code rules regarding a variety of topics such as wiring, appliances, motors, heating systems, and communication systems.  
(3+0)

**JAT122 National Electrical Code II 2 Cr. Hrs.**  
This course is a continuation of National Electrical Code I and includes National Electrical Code (NEC) requirements for wiring applications. The sizing of wire and ampacity are emphasized. A study of branch circuits, feeders, switches, and conduit is included. NEC requirements for wiring methods are studied, along with various boxes and fittings.  
(2+0)

**JAT124 AC Theory II 3 Cr. Hrs.**  
This course is a continuation of AC Theory I. There is a focus on inductors in series and in parallel connections, as well as voltage, impedance, and current in series RC and RLC circuits. Parallel RL circuits and parallel RC circuits are studied with emphasis on voltage, impedance, and current. Students are expected to apply AC theory to solve real world problems.  
(2+2)

**JAT126 National Electrical Code III 2 Cr. Hrs.**  
This course is a continuation of National Electrical Code II and includes National Electrical Code (NEC) requirements for overcurrent protection. Types of Overcurrent Protection Devices (OCPD) are studied, including circuit breakers and fuses. A study of OCPD ampacity sizing, conductor tap rules, and ground-fault protection of equipment is included. Students are expected to apply overcurrent protection methods to solve real world problems.  
(1+2)

**JAT128 Fire Alarms 1 Cr. Hr.**  
This course will study of the installation, programming, and troubleshooting of fire alarm systems. Emphasis is on wiring methods, initiating devices, and notification appliances. There is also a focus on system interfaces, emergency control systems, and voice/alarm communications systems. Supervising stations with single and multiple station alarms are included.  
(1+0)

**JAT130 Fiber Optics 2 Cr. Hrs.**  
This course includes introduction to fiber optic communications and wiring installations. The principles of fiber optics, terminology, transmission systems, and components are emphasized. Topics include optical fiber, fiber-optic cable, connectors, and splices. Applications focus on the design of fiber-optic networks, installation, and testing with implementation at the job site.  
(1+2)

**JAT170 DC Theory II 3 Cr. Hrs.**  
This course is a continuation of DC Theory I. There is a focus on the Principle of Superposition to circuit calculations and Kirchoff's Laws of voltage, current, single voltage source, and two voltage sources. Thevenin's Theorems and Norton's Theorems are studied, along with magnetism and electromagnetism. There is also an emphasis on DC Generators and Motors and using DC theory to solve real world problems.  
(2+2)

**JAT172 Distributed Generation 1 Cr. Hr.**  
This course will study of information technology sites and applications of Uninterruptible Power Supplies (UPS). Emphasis is on components, installation, and servicing of power systems. There is also a focus is on fuel cell maintenance and troubleshooting.  
(1+0)

**JAT174 Health Care Systems I 1 Cr. Hr.**  
This course will study of wiring in health-related facilities according to general NEC requirements. Emphasis is on patient care protection, wiring in patient care locations, and protection in critical care areas. There is also a focus on nurse call system installation and troubleshooting. Applications include essential electrical systems for hospitals, nursing homes, limited care, and other health care facilities.  
(1+0)

**JAT175 Health Care Systems II 1 Cr. Hr.**  
This course is a continuation of Health Care Systems I, wiring in health-related facilities. Emphasis is on requirements for isolated power systems. Applications include inhalation anesthetizing locations, diagnostic imaging equipment, pools and tubs, and operational facilities.  
(1+0)

**JAT176 Photovoltaics I 1 Cr. Hr.**  
This course is an introduction to photovoltaic systems and the fundamentals of photovoltaic devices. Topics include solar radiation, site surveys and planning, photovoltaic modules and arrays, and inverters. Emphasis also focuses on electrical integration and utility interconnection.  
(1+0)

**JAT178 Hazardous Locations I 1 Cr. Hr.**  
This course will study of hazardous locations in the electrical industry and the types of hazards present. Emphasis is on the background of electrical hazard identification and the classification of hazardous areas. Understanding the requirements for electrical installation in Class I, II, and III locations is a major focus. Students are expected to locate hazardous locations and types of hazards on the job.  
(1+0)

- JAT180 Motors II** **2 Cr. Hrs.**  
This course is a continuation of Motors I with emphasis on advanced motor systems. Topics include synchronous motors, braking, and multispeed motors. Emphasis also focuses on adjustable-speed drives, clutches, and motor alignment. Students are expected to apply skills to solve real world motor problems. (1+2)
- JAT182 Structured Cabling** **1 Cr. Hr.**  
This course introduces the need for structured cabling and TIA/EIA standards. Emphasis is on cabling system performance and safety codes. Topics include unshielded twisted pathways, telecommunications grounding and bonding, and configuring structured cabling systems. Residential telecommunications and UTP cabling systems are also covered. (1+0)
- JAT184 Installer/Tech CCTV I** **2 Cr. Hrs.**  
This course introduces surveillance video practices and technology. Emphasis is on video imaging, including image splitting, reversal, and annotation. The use of printers, low light level cameras, and thermal infrared is included. There is also a focus on control room console design, testing, and application solutions. (1+2)
- JAT186 Installer/Tech LAN I** **2 Cr. Hrs.**  
This course introduces the basics of networking technologies. Emphasis is on Ethernet basics, the need for security, viruses and monitoring software, and network operating systems. Topics include switches, routers, and storage. There is also a focus on addresses, tools, utilities, protocols, and remote network access. (1+2)
- JAT200 Grounding and Bonding I** **1 Cr. Hr.**  
This course covers circuit basics and overcurrent protection. Topics include grounding electrodes and requirements for grounded conductors. There is also a focus on grounding equipment and grounding receptacles. (1+0)
- JAT202 Blueprints II** **1 Cr. Hr.**  
This course is a continuation of the first blueprints course. Emphasis is on analyzing drawings and laying out residential circuits. Students also learn to understand job costs, interpret specifications, and effectively use blueprints in wiring systems. (1+0)
- JAT204 Electrical Safety II** **2 Cr. Hrs.**  
This course is a continuation of the first electrical safety course. Emphasis is on the control of hazardous energy by understanding the calculation of short circuits, arc flash hazards, and methods to reduce risks. Precautions are studied, including protective equipment and maintenance safety. (1+2)
- JAT206 Transformers II** **1 Cr. Hr.**  
This course is a continuation of Transformers I. Emphasis is on real world transformer connections, harmonics, power generation, and power distribution. Reactors, isolation transformers, and autotransformers are also covered. (1+0)
- JAT208 Blueprints III** **1 Cr. Hr.**  
This course is a continuation of Blueprints II. Emphasis is on analyzing drawings and laying out industrial circuits. Students will review the understanding of specifications in wiring systems and apply prior knowledge regarding residential wiring schemes to the industrial setting, including more advanced prints and a variety of industrial applications. There is emphasis on applications at industrial job sites. (1+0)
- JAT210 Code Calculations I** **1 Cr. Hr.**  
This course is a study of code calculation related to the installation of cable tray systems. Emphasis is on electrical equipment and special equipment which requires surface metallic raceways for wiring. Ampacity of conductors in cable trays is a major focus. Topics covered include electric welders and commercial loads in accordance with the NEC. (1+0)
- JAT212 Motor Control I** **3 Cr. Hrs.**  
This course is an introduction to magnetic motor controls and the devices that control and protect motors. Topics include manual pilot devices, automatic pilot devices, and magnetic control relays. Emphasis also focuses on control transformers, basic motor starters, and control timers. Students are expected to apply skills to solve real world motor control problems. (2+2)
- JAT214 Motors I** **2 Cr. Hrs.**  
This course is an introduction to DC and AC motors and protection of the motors. Topics include wiring and troubleshooting motors of various types. Emphasis also focuses on motor circuits and motor circuit protection. Students are expected to apply skills to solve real world motor control problems. (1+2)
- JAT216 Grounding and Bonding II** **2 Cr. Hrs.**  
This course is a continuation of Grounding and Bonding I. Emphasis is on grounding of electrical systems and requirements for separately driven systems. Topics include special occupancies and equipment, limited-energy systems, ground-fault circuit interrupters (GFCI), and test instruments. Grounding rules for medium and high voltage systems are also covered. (1+2)
- JAT218 National Electrical Code IV** **2 Cr. Hrs.**  
This course is a continuation of National Electrical Code III and includes National Electrical Code (NEC) requirements for overcurrent protection of swimming pools, fountains, and similar installations. Types of Overcurrent Protection Devices (OCPD) for water-borne devices are the primary focus. A study of remote-control, signaling, and power-limited circuit protection is included. Students are expected to apply overcurrent protection methods to solve real world problems. (1+2)
- JAT220 Motor Control II** **2 Cr. Hr.**  
This course is a continuation of Motor Control I with emphasis on solid state devices used to control motors. Emphasis is on electronic control devices, including relays, starters, programmable timers, and AC motor speed control. Students are expected to apply control principles to real work situations with motors. (1+2)



**JAT222 Rigging, Hoisting, and Signaling 1 Cr. Hr.**  
 This course will focus on the principles of properly rigging devices for lifting various loads. Emphasis is on tying knots, rigging equipment, and properly hoisting loads. Topics include the use of slings, chains, and block and tackle hoists, as well as proper hand signals. Students are expected to apply rigging and hoisting principles to real work situations.  
 (1+0)

**JAT224 Code Calculations 1 Cr. Hr.**  
 This course is a continuation of Code Calculations I. Emphasis is on conductor ampacity, ampacity calculations, box size calculations, box fill calculations, raceway fill calculations, electrical load calculations, and range and appliance calculations. Topics covered include parameters of multifamily dwellings, and commercial loads in accordance with the NEC.  
 (1+0)

**JAT270 Transformers III 1 Cr. Hr.**  
 This course is a continuation of Transformers II. Emphasis is on special transformers and special connections. Topics covered include electrical safety, buck-boost transformers, three-phase buck-boost transformers, and installation. Maintenance and troubleshooting of transformers are also included.  
 (1+0)

**JAT272 Motor Control III 1 Cr. Hr.**  
 This course is a continuation of Motor Control II with emphasis on advanced devices used to control motors. Emphasis is on variable frequency drives, programmable logic controllers, and troubleshooting control systems. Students are expected to apply control principles to real work situations with motors.  
 (1+0)

**JAT274 Instrumentation 2 Cr. Hrs.**  
 This course will study of instrumentation, including installation, monitoring, calibration, maintenance, and troubleshooting. Fundamentals of pressure, flow, level, and temperature are studied. There is emphasis on pneumatics, control valve actuators, instrument tubing, and control systems.  
 (1+2)

**JAT276 Programmable Logic Controllers 2 Cr. Hrs.**  
 This course will study of programmable logic controllers. Emphasis is on input devices, output actuators, programming, timers, and counters. The application of arithmetic instructions, move instructions, BCD conversion, and comparison instructions are included. There is also a focus on data handling and manipulation, PLC sequencer functions, analog sensors, control systems, intermittent and continuous process control, and industrial networks. Students also use PLC Standard IEC Structured Text Language and PLC Standard IEC Sequential Function Charts.  
 (1+2)

**JAT278 Electrical Project Supervision 1 Cr. Hr.**  
 This course will study of the supervisor's role in leading electrical projects. Emphasis is on team building, communications, job site documentation, employee relations, and safety fundamentals. Topics include managing the contract, understanding the estimate, and management of tools and materials. There is also a focus on effective planning and scheduling to manage a project.  
 (1+0)

**MEA101 Medical Assisting Clinical I 3 Cr. Hrs.**  
 This course is designed to provide the basic knowledge for assisting physicians or medical office staff with medical exam room preparation, routine patient examination preparation, as well as assisting with basic clinical procedures. The basic concepts of ethical practice and decision making will be introduced  
 (1+4)  
 Co-requisites: BIO150 and MEA105, MEA108

**MEA105 Laboratory Techniques 3 Cr. Hrs.**  
 This course introduces basic principles of laboratory safety, infection control; biological and chemical hygiene associated with CLIA waived testing techniques. Topics covered include the proper collection and processing of blood and non-blood specimens for therapeutic treatment, diagnostic procedures, or analysis. Identifying normal versus abnormal laboratory values, the purpose of common tests, and proper documentation procedures as well as common clinical complications associated with such practices will also be reviewed.  
 (2+2)  
 Prerequisite: HS Biology with a "C" or better or BIO 101 with a "C" or better

**MEA108 Administrative Medical Office 3 Cr. Hrs.**  
 This course will provide a basic understanding of the administrative duties and responsibilities that pertain to the medical office. Students are introduced to the basic operation and maintenance of office equipment, inventory and supply. Application of computer usage within the health care setting, including simulated data entry for patients' medical and financial records, appointment scheduling, and other office transactions. Emphasis placed upon the professional role and communication with patients and members of the health care team.  
 (2+2)  
 Co-requisite: OAS101 or CIS114, ENG111

**MEA110 Pharmacology for a Allied Health Professional 3 Cr. Hrs.**  
 The most common medications used and prescribed in a physician's office are studied. The actions, side effects, contraindications, and administration implications are emphasized. Content related to writing prescriptions, storing of meds, handling of narcotics and searching of pharmaceutical references is included.  
 (3+0)  
 Prerequisite: MTH079 or MTH080  
 Co-requisite: BIO150

**MEA200 Medical Assisting Administrative Externship 4 Cr. Hrs.**  
 This course provides opportunities to observe, perform, and discuss various administrative competencies under supervision, with learning experiences obtained in selected physicians' offices, clinics or hospitals.  
 (3+6)  
 Prerequisite: MEA201, OAS111, MEA283



**MEA201 Medical Assisting Clinical II 3 Cr. Hrs.**  
Clinical II is a continuation of Clinical I. Following the Clinical II experience students will be able to administer enteral and parenteral medication (excluding IV), accurately document medication administration, explain and perform ECGs, explain and perform basic respiratory diagnostic testing, demonstrate use of oxygen therapy equipment, respond to emergency situations in a physician office setting, describe an ethical decision making process relating to issues throughout the human lifespan, and discuss professionalism and interview skills as related to a job search

(1+4)

Prerequisites: MEA101, MEA105

Co-requisites: MEA110, MEA205

**MEA202 Medical Assisting Clinical Externship/CMA Review 4 Cr. Hrs.**

This course provides opportunities to observe, perform, and discuss various clinical competencies under supervision, with learning experiences obtained in selected physicians' offices, clinics or hospitals. This course will also review the following basic principles of psychology as they apply to the medical assistant: developmental stages of the life cycle, hereditary, cultural and environmental influences on behavior, mental health and applied psychology. In addition, this course addresses the preparation for the Certified Medical Assisting Exam, including a review of all three components of the CMA exam. This course presents an explanation of how the exam is scored and provides opportunities to take practice exams.

(3+6)

Prerequisites: MEA 201

Corequisites: MEA 200

**MEA205 Disease Conditions 3 Cr. Hrs.**

This course presents the basic concepts of diseases, their courses and function disturbances as they relate to body systems. This course includes the precipitating risk factors and appropriate methods of patient education regarding various disease processes.

(3+0)

Prerequisite: BIO150

**MEA207 Phlebotomy Externship 6 Cr. Hrs.**

This course provides the opportunity to discuss and perform phlebotomy procedures under supervision. The learning experiences will be obtained in selected laboratories, physician offices, clinics or hospitals.

(3+9)

Prerequisites: MEA105, MEA108, and BIO150 or BIO232

**MEA229 Diagnostic and Procedural Coding 4 Cr. Hrs.**

This course gives the student an introduction to the diagnostic and procedural coding processes for health insurance reimbursement purposes using the International Classification of Diseases (ICD) and Current Procedural Terminology (CPT) systems. Students develop an understanding of the format and organization of coding system manuals, and the conventions that guide their use. Students will use their knowledge of medical terminology, anatomy and physiology, disease conditions, and pharmacology to correctly assign diagnostic and procedural codes from documentation that link diagnoses to procedures performed.

(4+0)

Prerequisite: OAS180 and BIO 150 or BIO 232

Co-Requisite: MEA 205 and MEA 110

**MEA283 Computerized Medical Insurance 3 Cr. Hrs.**

This is a course that will cover the fundamentals of using medical office management software which includes: inputting patient data, processing insurance claims and payments, scheduling appointments, and printing medical reports. The computer skills gained will enable students to cross over to the workplace and use medical software in the health environment. Transfer Assurance Guide (TAG) approved, effective spring 2017 (OHL022 - Health Information Technology).

(3+0)

Co-rerequisite: OAS/MEA229

**MET099 Engineering Math 3.5 Cr. Hrs.**

The objective of this course is to increase students preparedness in basic algebra and trigonometry skills used in engineering. These concepts will be reviewed, refreshed, and mastered through application to engineering problems. This course is designed for students who have had some algebra and need a review of specific mathematical topics to prepare them for the engineering technologies course sequence.

(3+1)

Prerequisite: MTH080 or H.S. Algebra II with "C" or better

**MET100 Intro to Engineering Technology 2-3 Cr. Hrs.**

This course introduces the field of engineering to the student who is interested in engineering technologies. It explores multiple disciplines and careers available. Additionally, the student will solidify knowledge of basic mathematics, measurement systems, and computer skills necessary to succeed in an engineering environment.

(2 or 3+0)

Prerequisite: MTH050

**MET107 Engineering Graphics & Sketching 3 Cr. Hrs.**

Engineering Graphics and Sketching includes the introduction of various different types of Engineering drawings. Also the construction of various sketches of 3D parts using proper Orthographic Projection, Geometric Construction, Auxiliary Views, and Section Views will also be completed.

(3+0)

**MET121 Manufacturing Processes 3 Cr. Hrs.**

The focus of this course is to provide the student with an introduction to the theory of the common major manufacturing processes. The major manufacturing processes (methods used to convert raw materials into finished products) are described and compared. Emphasis is placed on how each process works and its relative advantages and disadvantages. Students will have the opportunity to observe processes via field trips as such opportunities are available. Transfer Assurance Guide (TAG) approved effective summer 2008 (OET110 - Manufacturing Processes).

(3+0)

**MET134 Engineering Materials 3 Cr. Hrs.**

This course combines major elements of ferrous and non-ferrous metallurgy with polymeric materials, organics and refractories. Student learns basic physical and chemical properties of common engineering materials and their design considerations. Transfer Assurance Guide (TAG) approved effective spring 2013 (OET013 - Engineering Materials).

(3+0)

**MET222 Programming Computer Numerical Control 3 Cr. Hrs.**

The student will view a blueprint of a mechanical part to determine the datum, the order of operations and appropriate fixtures to make the part in a CNC machine. G & M code programs will be written and loaded to the CNC mill or lathe which will create the machined surfaces of the part. Conversational programming will be demonstrated. A familiarity with geometry, trigonometry, computers, and CAD is helpful.

(2+3)

Prerequisites: IND140, or instructor permission

**MET223 CAM I 4 Cr. Hrs.**

This course is a study in the basic fundamentals of Computer-Aided-Manufacturing-Machining (CAM). The student will become proficient in the use of manipulating CAM software in a hands-on environment. Datums, tool selection, speeds, feeds, and part identification will be emphasized.

(3+3)

Prerequisites: MET222 or instructor permission

**MET234 Strength of Materials 3 Cr. Hrs.**

Learn how to analyze the mechanical and thermal loads on structures, beams, and columns, and how to calculate stress, strain, and deflection. Application of formulas and design considerations are stressed. Transfer Assurance Guide (TAG) approved effective spring 2008 (OET008 - Strength of Materials).

(3+0)

Prerequisites: MET235 and PHY251

**MET235 Statics 3 Cr. Hrs.**

A study of resolution of forces on rigid bodies using conditions of equilibrium and vector analysis. Includes the analysis of trusses, friction, and moments of inertia. Transfer Assurance Guide (TAG) approved effective spring 2008 (OET007 - Statics).

(2+2)

Prerequisite: PHY251

**MET255 Fluid Mechanics 3 Cr. Hrs.**

Fluid power is an efficient way to move energy without mechanical belts, chains, or levers. The physics of fluids, components, troubleshooting, and design applications for hydraulic and pneumatic systems are covered in this class. This class will introduce the student to both hydraulic and pneumatic components. This course will simulate an industrial environment; following all safety procedures will be required. Everyone will wear safety glasses while working in the lab! Failure to comply will result in not being able to work in lab and therefore lowering your lab grade(s). Transfer Assurance Guide (TAG) approved effective spring 2009 (OET009 - Fluid Mechanics).

(2+2)

Prerequisite: PHY251

**MET260 CAM II 3 Cr. Hrs.**

CAM II is a continuation of CAM I. This is an advanced course that introduces the student to Advanced milling, Solids, Surfaces, and 3D cutter-pathing. Lathe and 4th and 5th axis programming will be introduced as time allows. 3D drawings, solids and surfaces will be created by the student. Toolpaths and NC files will be created to the 3D drawings, solids and surfaces. The tool paths created will be used to create a part on a CNC machining center.

(2+2)

Prerequisite: MET223

**MET262 CAD/CAM Project 4 Cr. Hrs.**

This is a capstone class that requires the student to design, fabricate and test a working machine component. Solid Modeling and CAM technology will be the focus, with supporting CMM technology. The students will be required to apply the technology they learned in individual technology classes.

(3+2)

Prerequisites: CAD213, MET223, and QCT141

**MET265 Machine Design 3 Cr. Hrs.**

This course is designed to assist students with the basic approach to machine design through the analysis of static and dynamic stresses. The course will focus on the strength of materials and how they relate to machine design. Design projects will be included.

(3+0)

Prerequisite: PHY251

**MET290 Engineering Technology Co-op/Internship 1-4 Cr. Hrs.**

The Co-op/Internship is a job-related experience in which the student works in a position consistent with the program major. The student is expected to integrate skills learned in the educational program with job responsibilities, while applying work experience to classroom activities. Primary work duties are documented through a work log, incident summary, and a focused report. Enrollment only with permission of the instructor.

**MGT110 Management 3 Cr. Hrs.**

This course focuses on the principles of coordinating an organization's objectives. Major emphasis is devoted to the four management functions: planning, organizing, leading, and controlling. Issues such as decision making, communication, motivation, leadership, diversity, social responsibility and ethics, and global management are addressed.

(3+0)

**MGT120 Supervision 3 Cr. Hrs.**

This course focuses on the supervisor/employee relationship. Primary topics include motivation, goal setting, performance appraisal, and management of a team of employees.

(3+0)

**MGT121 Entrepreneurship I 3 Cr. Hrs.**

This course provides an overview of Entrepreneurship. It introduces students to a rewarding and challenging career as an entrepreneur and small business owner. This course discusses innovative approaches in starting, acquiring, succeeding and franchising. The course provides a foundation for small business and an overview of business concepts such as theories of entrepreneurship, types and characteristics of entrepreneurship, the business life cycle, entrepreneurial economics, accounting and financial management, legal issues, marketing research and planning human resource management, ethics and social responsibility, product and service research development and acquisition and the use of technology.

(3+0)

**MGT210 Human Resource Management 3 Cr. Hrs.**

This course is a study of personnel management. Major topics include planning, job design, recruitment, employee selection, training, performance appraisal, and contract administration. Safety and government regulations are included.

(3+0)

**MGT221 Entrepreneurship 3 Cr. Hrs.**

This course is a study of opportunities and challenges facing entrepreneurs in a dynamic marketplace. Topics include recognizing and exploiting viable business opportunities, writing a business plan, managing inventory, cash management, employee management (including hiring, training, and evaluation), marketing, and using technology. Emphasis is placed on self-employment and the issues of efficiently and effectively running a business.

(3+0)

**MGT230 Retail Management 3 Cr. Hrs.**

This course focuses on strategic and tactical issues for retailers, both large and small, domestic and international, selling both merchandise and services. Emphasis is placed on financial considerations and implementation through merchandise and store management.

(3+0)

**MGT280 Business Climate Analysis 3 Cr. Hrs.**

This course includes research, analysis, and summary of the business climate in a specific region. Students will assess regional, cultural, political, commercial, and financial issues. They will also investigate availability of labor, manufacturing, transportation, and technological resources. Students work on a team to collect information and develop a report which answers the question, "How To Do Business?" in that region. The finished product will be presented by a team of students.

(3+0)

Prerequisites: ACC111, ECO212, ENG112, MKT110, and MGT110 or BAN110

Co-requisite: MGT230

**MGT281 Global Business Climate Analysis 3 Cr. Hrs.**

This course includes research, analysis, and summary of the business climate in a specific region. Students will assess regional, cultural, political, commercial, and financial issues. They will also investigate availability of manufacturing, transportation, labor, and technological resources. Students are required to travel to the international region and develop a Business Climate Summary. The finished product will be developed and presented by a team of students.

(3+0)

**MGT290 Business Management Internship 1-3 Cr. Hrs.**

This is a management experience related to the student's program of study. The student is accepted on the basis of academic progress and available work site. Enrollment only with instructor permission.

(1+20)

**MKT110 Marketing 3 Cr. Hrs.**

Marketing is an introductory course that exposes the student to the "marketing mix" (product, price, promotion, distribution). Topics include the global environment and social and ethical responsibilities; using technology and information to build customer relationships; target markets and customer behavior; product decisions; distribution decisions; promotion decisions; and pricing decisions. The topics are looked at from the profit and nonprofit viewpoint. Global as well as domestic strategies are examined. The student is introduced to the above topics through lecture, textbook readings, electronic media presentations, classroom discussions, and a team marketing project. Transfer Assurance Guide (TAG) approved effective spring 2008 (OBU006 - Principles of Marketing Management).

(3+0)

Co-requisite: ECO212

**MKT210 Advertising 3 Cr. Hrs.**

This course is a comprehensive analysis of the world of advertising and sales promotion. An understanding of the various modes of communications used in an advertising campaign and the importance of integration for advertising success will be stressed.

(3+0)

**MKT230 Salesmanship 3 Cr. Hrs.**

This course focuses on many aspects of personal selling including both customer and buyer relationships, communication skills, prospecting, sales presentations, and sales management.

(3+0)

**MTH050 Basic Mathematics 4 Cr. Hrs.**

Designed to improve basic computational skills, as well as introduce the student to computational techniques related to their degree and preliminary algebraic concepts. The material will cover operations with whole numbers, fractions, decimals, ratio and proportions, percentages, integers, and application problems.

(4+0)

**MTH078 Beginning Algebra I 3 Cr. Hrs.**

This is the first part of a two-course sequence designed for students with no previous algebra experience or low confidence in their ability to succeed in an algebra class. The course introduces the properties, rules and basic techniques of algebra as well as translation between English and the language of algebra. Topics include integers and operations, variables and algebraic expressions, linear equations, graphing, and systems of equations. MTH078 and MTH079 cover the same material as MTH080, but at slower pace.

(3+0)

Prerequisite: MTH050, high school equivalent, or satisfactory score on Course Placement Test.

**MTH079 Beginning Algebra II 3 Cr. Hrs.**

This is the second part of a two-course sequence designed for students with no previous algebra experience. New topics include exponents and polynomials, factoring, solving quadratic equations and applications, and rational expressions.

(3+0)

Pre-requisite: MTH 050, high school equivalent, or satisfactory score on Course Placement Test.



**MTH080 Review of Beginning Algebra 4 Cr. Hrs.**

This is an intensive first course in algebra. It is recommended only for students who are confident in their math skills or need a review of basic algebraic techniques before taking MTH090. The course introduces the properties, rules and basic techniques of algebra as well as translation between English and the language of algebra. Topics include linear equations, polynomials, factoring, graphing, systems of equations, and rational expressions. (4+0)

Pre-requisite: MTH050, high school equivalent, or satisfactory score on Course Placement Test.

**MTH090 Intermediate Algebra 3 Cr. Hrs.**

Intended for those students who have passed a previous algebra class. Designed to review topics introduced in MTH080 but at an accelerated pace and with more depth and rigor. Introduces many new topics including functions, several types of inequalities, radical expressions and equations, rational exponents, complex numbers, and quadratic equations including completing the square and the quadratic formula. (3+0)

Prerequisite: MTH079 or MTH080, high school equivalent, or satisfactory score on Course Placement Test.

**MTH099 Engineering Math 3.5 Cr. Hrs.**

The objective of this course is to increase students preparedness in basic algebra and trigonometry skills used in engineering. These concepts will be reviewed, refreshed, and mastered through application to engineering problems. This course is designed for students who have had some algebra and need a review of specific mathematical topics to prepare them for the engineering technologies course sequence. (3+1)

Prerequisite: MTH080 or H.S. Algebra II with "C" or better

**MTH105 Quantitative Reasoning 3 Cr. Hrs.**

The Quantitative Reasoning course is an alternative college-level mathematics pathway for students whose majors are neither calculus-based nor statistics-based. Course content is driven by the mathematical competencies of numeracy (logic; critical thinking and problem solving; rates, ratios, proportions, and percentages; personal finance), mathematical modeling (functions, linear and exponential models, logarithms), and probability and statistics (sampling strategies and bias, descriptive statistics, graphic displays of data, probabilities, risk assessment). Emphasis is placed on interpreting calculations and conveying results to others. (3+0)

**MTH109 College Algebra 3 Cr. Hrs.**

Students successfully completing this class will be able to solve quadratic equations by factoring, completing the square, and using the quadratic formula. They will also be familiar with complex numbers and solving rational equations. College Algebra topics include: polynomial, rational, exponential, and logarithmic functions and graphs. Equations and inequalities are covered including solutions of systems of equations. Application problems build skills in problem solving. (Ohio Transfer Module TMM001 approved). (3+0)

Prerequisite: MTH090 or satisfactory score on the Course Placement Test

**MTH112 Trigonometry 3 Cr. Hrs.**

This course is designed to follow MTH109 and replaces MTH110. Topics include both right triangle and circle definitions, solving all types of triangles, trigonometric identities and equations, selected vector and complex number problems, and the polar coordinate system. (Ohio Transfer Module TMM003 approved) (3+0)

Co-requisite: MTH109 or satisfactory score on the Course Placement Test.

**MTH151 Mathematics Review for Calculus 1 Cr. Hr.**

This course is a review of algebra, trigonometry, and graphing calculator skills necessary for success in the Calculus sequence. Students completed MTH109 and MTH112 previously or a pre-calculus sequence in high school but have been away from the material for a time will have a chance to refresh their skills to make learning new material in Calculus easier. In addition students who are uncertain of the level of their preparation will benefit from taking this course before they attempt Calculus. Topics include an extensive review of algebraic manipulation skills, solving degree 1 and 2 equations, rational equations, exponential and logarithmic equations, functions and their graphs, composition and decomposition of functions, trigonometric functions and equations. (1+0)

Prerequisite: MTH109 and MTH112, high school equivalent pre-Calculus preparation, or permission of the instructor

**MTH170 Survey of Mathematics 3 Cr. Hrs.**

This course presents a variety of mathematical ideas and concepts to give students an idea of the breadth and vitality of mathematics. Among others, topics will include geometry, number theory, statistics and probability. Although some manipulative techniques will be reviewed, this course is not intended for improvement of algebra skills or other specific content. Instead the emphasis is on understanding how fundamental concepts of mathematics work together as a unified whole. This course is specific to education majors preparing for early childhood or middle grade teaching. (3+0) F

Prerequisite: MTH080, high school equivalent, or satisfactory score on Course Placement Test

**MTH213 Calculus I 5 Cr. Hrs.**

Designed for those students who have mastered algebra and trigonometry and who are planning to pursue a four-year degree program. Topics include a review of functions, limits, derivatives of algebraic and transcendental functions, applications of derivative, and an introduction to integrals. Transfer Assurance Guide (TAG) approved effective fall 2005 (OMT005 - Calculus I and OMT017 - Calculus I and II Sequence, Course 1 of 2). (Ohio Transfer Module TMM005 approved) (5+0)

Prerequisites: MTH112 or MTH122, or satisfactory score on the Course Placement Test



- MTH214 Calculus II** **5 Cr. Hrs.**  
This course is designed for those students who have completed MTH213. Topics include techniques of integration, applications of integrals, sequences and series, introduction to differential equations, conics, and parametric and polar graphing. Transfer Assurance Guide (TAG) approved effective fall 2005 (OMT006 - Calculus II and OMT017 - Calculus I and II Sequence, Course 2 of 2). (Ohio Transfer Module TMM006 approved) (5+0)  
Prerequisite: MTH213
- MUS120 Chorus** **3 Cr. Hrs.**  
This course is a vocal ensemble for students, faculty, staff, and community members with an interest in singing. A variety of music is studied, emphasizing techniques of singing and musical concepts. The group performs several times each term. (3+0)
- MUS121 Beginning Chorus** **1 Cr. Hr.**  
This beginning course is a vocal ensemble for students, faculty, staff, and community members with an interest in singing. A variety of music is studied, emphasizing techniques of singing and musical concepts. The group performs several times each term. (1+0)
- MUS122 Intermediate Chorus** **1 Cr. Hr.**  
This intermediate course is a vocal ensemble for students, faculty, staff, and community members with an interest in singing. A variety of music is studied, emphasizing techniques of singing and musical concepts. The group performs several times each term. (1+0)
- MUS123 Advanced Chorus** **1 Cr. Hr.**  
This advanced course is a vocal ensemble for students, faculty, staff, and community members with an interest in singing. A variety of music is studied, emphasizing techniques of singing and musical concepts. The group performs several times each term. (1+0)
- NRS100 Nurse Aide Certificate** **4 Cr. Hrs.**  
This course will prepare students for employment as a nurse aide. Students are eligible to take the state certification exam upon successful completion of program. This course is taught in cooperation with Four County Career Center and Vantage Career Center and includes 24 clinical hours held at a local long term healthcare facility. (3.5+0.5)
- NRS105 Math for Nurses** **1 Cr. Hr.**  
This math course is designed for the student who will be in a nursing health care technology. It includes study of metric, apothecary, and household systems of weights and measures relating to the calculation and administration of medications. The course emphasizes solving oral and parenteral drug dosage problems as they might occur in the clinical area. (1+0)  
Prerequisite: MTH080
- NRS108 Nursing Care of Clients with Physiological Health Needs I** **6 Cr. Hrs.**  
The course provides for the development and application of concepts of nursing for assisting clients in adapting to the physiological mode and related health needs. (3+9)  
Prerequisites: NRS106, NRS107, BIO231, ENG111, PSY110  
Co-requisites: NRS110, NRS131, BIO232, PSY230
- NRS110 Pharmacology** **3 Cr. Hrs.**  
This course focuses on pharmacological theory of broad classifications of common medications in current use with application to nursing. This course includes federal drug legislation and the responsibility of drug administration. (3+0)  
Prerequisite: NRS106 and NRS107 or PNE120 or permission of Nursing Department
- NRS111 Pharmacology I** **1.5 Cr. Hrs.**  
Pharmacological theory of broad classifications of common medications in current use with application to nursing. Includes federal drug legislation and the responsibility of drug administration. This is the first part of a 2-course sequence equating to NRS110. (1.5 + 0)  
Prerequisite: PNE120
- NRS112 Pharmacology II** **1.5 Cr. Hrs.**  
Pharmacological theory of broad classifications of common medications in current use with application to nursing. Includes federal drug legislation and the responsibility of drug administration. This course is the 2nd part of a 2-course sequence equating to NRS110. (1.5 + 0)  
Prerequisite: PNE120 and NRS111
- NRS131 Health Assessment in Nursing** **2 Cr. Hrs.**  
The course focuses on the application of the nursing process related to physical assessment and history taking skills with emphasis on the adult client. (1+3)  
Prerequisites: NRS106, NRS107, BIO231, and ENG111  
Co-requisite: BIO232
- NRS133 Cardiopulmonary Resuscitation** **1 Cr. Hr.**  
A basic course in cardiopulmonary resuscitation for cardiac arrest and respiratory emergencies. Includes infant, child, adult, and two-man CPR. Certificate issued upon completion. (1+0)
- NRS140 Professional Concept I** **1 Cr. Hr.**  
This course introduces the student to selected professional nursing and patient-centered concepts. The student will examine concepts relevant to the professional nurse and patient-centered care such as professional identity, nursing process, technology, health promotion, patient education, communication, ethics and safety. (1+0)  
Prerequisites: ENG111, PSY110, BIO231  
Co requisites: NRS141, NRS144, BIO232

**NRS141 Health & Illness Concepts I 6 Cr. Hrs.**  
 This course introduces the student to concepts of nursing with the emphasis on health and illness. The student will apply basic care concepts such as nutrition, elimination, inflammation, infection, mobility, pain and sleep. The concepts will be applied in theory, lab and clinical settings.  
 (3+9)  
 Prerequisites: ENG111, PSY110, BIO231  
 Co requisites: NRS 140, NRS144, BIO232

**NRS142 Professional Concepts II 1 Cr. Hr.**  
 This course introduces the student to selected professional nursing and patient-centered concepts. The student will examine concepts relevant to the professional nurse and patient-centered care such as development, functional ability, culture, spirituality, care coordination, collaboration, health care organizations, health care law and health care economy and policy.  
 (1+0)  
 Prerequisites: NRS140, NRS141, NRS144, BIO 232  
 Co requisites: NRS143, BIO234, BIO131

**NRS143 Health & Illness Concepts II 7 Cr. Hrs.**  
 This course introduces the student to concepts of nursing with the emphasis on health and illness. The student will apply concepts such as hormonal, cellular and thermal regulation, immunity, fluid and electrolytes, acid-base and stress and coping. The concepts will be applied in theory, lab and clinical settings.  
 (3+12)  
 Prerequisites: NRS140, NRS141, NRS144, BIO232  
 Co requisites: NRS142, BIO234, BIO131

**NRS144 Pharmacology 2 Cr. Hrs.**  
 This course introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the nursing process when administering medications, including dosage calculation. This course provides the student with a foundation in pharmacology for application of concepts in nursing practice.  
 (2+0)  
 Prerequisites: Admission to the nursing program  
 Co requisites: NRS140, NRS141, BIO232

**NRS150 Concepts in End of Life Care 1 Cr. Hr.**  
 This course provides an overview of the knowledge necessary to provide optimal holistic care to clients at the end of life. Content covers the essential aspects of physical, psychosocial, and emotional nursing care as applied to clients and their families.  
 (1+0)  
 Prerequisite: Admission to Nursing Program

**NRS207 Nursing Care of the Family Throughout Pregnancy 2 Cr. Hrs.**  
 This course will substitute for NRS213 for the LPN graduate who is not successful on the Nursing Care During Childbearing NLN NACE I Exam. This course focuses on the development and application of knowledge and skills in providing care for the pregnant woman and childbearing family throughout pregnancy: prenatal, intrapartal, postpartal and neonatal periods. The nursing process is used to assist in providing nursing care for clients and their families throughout the maternity cycle in adapting to their changing roles.  
 (2+0)  
 Prerequisite: Permission by Nursing Department

**NRS208 Nursing Care of the Family with Children 2 Cr. Hrs.**  
 This course is designed for the LPN graduate who was not successful on the Nursing Care of the Child NLN NACE I Exam. This course will focus on the development and application of knowledge and skills in providing family-centered care for well and sick children as well as anticipatory guidance for their families. Application of Growth and Development principles within the nursing process is emphasized.  
 (2+0)  
 Prerequisite: Permission by Nursing Department

**NRS209 Nursing Care During Childbearing and Childhood 3 Cr. Hrs.**  
 This course will substitute for NRS213 & NRS214 for the LPN graduate who is not successful on the Nursing Care During Childbearing and Nursing Care of the Child NLN NACE I Exams. This course focuses on the development and application of knowledge and skills in providing care for the childbearing family. The nursing process is used to assist clients of the developing family to adapt to their changing role.  
 (3+0)  
 Prerequisite: Permission by Nursing Department

**NRS211 LPN to RN Transition 3 Cr. Hrs.**  
 This three-credit hour course is designed to enable the student to explore integrative concepts in nursing and to assist the student in the transition from licensed practical nurse to registered nurse. Students refine and update previous learning in addition to identifying goals for a successful transition into the registered nursing program. Combined with classroom and nursing laboratory experience, the student learns through the application of concepts. The student will demonstrate the ability to solve problems through the use of the nursing process with a focus on client assessment and to communicate more effectively. This course meets requirements of the Ohio Nursing Articulation Model.  
 (2+2)  
 Prerequisite: Admission to the Nursing Program

**NRS212 LPN to RN Bridge Course 1 Cr. Hr.**  
 This course is designed to meet the needs of the LPN who will be entering the Associate Degree Program at the second level. The focus of the course will be on the Roy Adaptation Model for Nursing and its use within the nursing process, and utilization of computers within nursing.  
 (1+0)

**NRS213 Nursing Care of the Childbearing Family 3 Cr. Hrs.**  
 This course focuses on the development and application of knowledge and skills in providing care for the mother/parents and newborn. The nursing process is used to assist clients of the developing family to adapt to their changing role.  
 (3+9)  
 Prerequisites: NRS108, PSY230, NRS131 and NRS110

**NRS214 Nursing Care of the Childrearing Family 3 Cr. Hrs.**

This course focuses on the development and application of knowledge and skills in providing care for the child and the childrearing family. The nursing process is used to assist clients of the developing family to adapt to their changing role.

(3+9)

Prerequisites: NRS108, PSY230, NRS131, and NRS110

**NRS215 Nursing Care of Clients with Psychosocial Health Needs 5 Cr. Hrs.**

The focus is on the development and application of knowledge and skills in providing nursing care to clients with common psychological health needs within a variety of settings.

(3+6)

Prerequisites: NRS131, PSY110, NRS110 and NRS108 or NRS211/212

**NRS216 Nursing Care Of Clients with Physiological Health Needs II 3 Cr. Hrs.**

The focus is on the development and application of knowledge and skills in providing nursing care to clients with common long-term physiological health needs within a variety of settings.

(1+6)

Prerequisite: NRS131, NRS110 and NRS108 or NRS211/212

Co-requisite: BIO257 and PHI220

**NRS217 Nursing Care of Clients with Physiological Health Needs III 5 Cr. Hrs.**

The course provides for further development and application of concepts of nursing for assisting clients in adapting to the physiologic mode and related health needs.

(3+6)

Prerequisites: NRS213, NRS214, NRS215, and NRS216

Co-requisite: STA120, ENG112

**NRS218 Concepts in Management Groups of Clients 4 Cr. Hrs.**

This course provides an introduction to the skills and knowledge necessary to manage care of a group of clients in a cost effective manner. Content includes organization of care, principles of working with others, concepts of leadership, research, management and organizational structure. Current issues in the political and cultural systems which impact the nursing profession are examined. The transition from student to practitioner is facilitated through course concepts and clinical placement.

(1+9)

Prerequisites: NRS213, NRS214, NRS215, and NRS216

Co-requisites: NRS217, STA120 and ENG112

**NRS220 Special Problems in Nursing I 1-4 Cr. Hrs.**

An independent study which focuses on a topic or selected problem in nursing, subject to the approval and supervision of an assigned nursing instructor. Content and methodology to be arranged on an individual basis. Credit will be determined by the nature and extent of the independent study.

Prerequisite: Permission of the Dean of Nursing

**NRS221 Special Problems in Nursing II 1-4 Cr. Hrs.**

An independent study which focuses on a topic or selected problem in nursing, subject to the approval and supervision of an assigned nursing instructor. Content and methodology to be arranged on an individual basis. Credit will be determined by the nature and extent of the independent study.

Prerequisite: Permission of Dean of Nursing

**NRS230 Transition to Professional Concepts in Nursing 2 Cr. Hrs.**

This course will assist the student in transition from licensed practical nurse to registered nurse. It introduces the student to selected professional nursing and patient-centered concepts. The student will examine concepts relevant to the professional nurse and patient-centered care such as professional identity, leadership and clinical judgment, scope of RN practice, ethics, care coordination, collaboration, informatics and health care economics, policy and law.

(2+0)

Prerequisites: Admission to the LPN to RN program

Co requisites: NRS231, BIO234

**NRS231 Transition to Health & Illness Concepts II 5 Cr. Hrs.**

This course will assist the student in transition from the licensed practical nurse to registered nurse. It introduces the student to concepts of nursing with emphasis on health and illness. The student will apply concepts such as cellular, intracranial and hormonal regulation, immunity, fluid and electrolytes, acid-base and stress and coping. The concepts will be applied in theory, lab and clinical settings.

(3+6)

Prerequisites: Admission to the LPN to RN program

Co requisites: NRS230, BIO234

**NRS240 Professional Concepts III 1 Cr. Hrs.**

In this course the student will examine exemplars, reflecting problems or issues related to previously introduced concepts relevant to the professional nurse and patient-centered care.

(1+0)

Prerequisites: NRS142, NRS143 or NRS230, NRS231 and BIO234, BIO131

Co requisites: NRS241, BIO257, PSY230

**NRS241 Health & Illness Concepts III 8 Cr. Hrs.**

This course introduces the student to concepts of nursing with the emphasis on health and illness. The student will apply concepts such as anxiety, mood, cognition, psychosis, sexuality and reproduction. Exemplars, reflecting problems or issues related to previously introduced concepts will be examined. The concepts will be applied in theory, lab, and clinical settings.

(4+12)

Prerequisites: NRS142, NRS143, or NRS230, NRS231 and BIO131, BIO234

Co requisites: NRS240, BIO257, PSY230

**NRS242 Professional Concepts IV 1 Cr. Hr.**

In this course the student will continue to examine concepts and exemplars, reflecting problems or issues related to previously introduced concepts relevant to the professional nurse and patient-centered care.

(1+0)

Prerequisites: NRS240, NRS241, BIO257, PSY230

Co requisites: NRS243, STA120



**150**

**NRS243 Health & Illness Concepts IV 8 Cr. Hrs.**  
 In this course the student will examine exemplars, reflecting problems or issues related to previously introduced concepts of nursing with the emphasis on health and illness. The concepts will be applied in theory, lab, and clinical settings.  
 (4+12)  
 Prerequisites: NRS240, BIO257, PSY230  
 Co requisites: NRS242, STA120

**NRS298 Special Topics 1 Cr. Hr.**  
 This course is an elective course designed to supplement the learning of current nursing students. It is a seminar course which focuses on current trends or issues affecting nursing practice.  
 (1+0)  
 Prerequisite: Enrollment in Nursing Clinical Course

**OAS090 Keyboarding Basics 1 Cr. Hr.**  
 This is a beginning keyboarding course on the computer designed for students in any program. Major objectives are to develop touch control of the keyboard and proper typing techniques, while building basic speed and accuracy. This course is useful for beginning keyboarding students as well as those who want to review the basics of the computer keyboard.  
 (0+2)  
 Course Placement Test is available

**OAS101 Business Document Formatting & Skillbuilding 3 Cr. Hrs.**  
 This course introduces students to basic keyboarding and formatting techniques, editing and proofreading of keyed copy, and the development of key stroking accuracy and speed. Correct format for keying business documents will be stressed.  
 (3+0)  
 Prerequisite: CIS090 and OAS090 or Satisfactory Score on Course Placement Tests

**OAS102 Advanced Business Document Formatting & Skillbuilding 3 Cr. Hrs.**  
 This is a comprehensive course based on the knowledge and skills necessary to perform duties in a modern office. Advanced keyboarding, refinement of formatting and editing of business documents using computer software, improved communication skills, and the continued development of higher keystroking accuracy and speed will be stressed. Practical experiences and simulated work experiences are included.  
 (3+0)  
 Prerequisite: OAS101

**OAS103 Office Accounting 3 Cr. Hrs.**  
 This course is designed for Office Administrative Services and Early Childhood Development majors. It may not be used as a substitute for ACC111. The primary emphasis of this course will be on a sole proprietorship operating a service business and a merchandising business. The course includes a study of the accounting cycle, beginning with the business transaction and ending with the preparation of the financial statements and all of the necessary end of the period procedures. Other topics include bank reconciliations, petty cash funds, and cash change funds. Considerable emphasis will also be placed on payroll. Students will be able to calculate payrolls and be familiar with all of the necessary payroll forms.  
 (3+0)

**OAS104 Voice Recognition 1 Cr. Hr.**  
 This is a hands-on course introducing the student to the use of speech recognition technology in the office. Topics include but are not limited to setting up the speech recognition software, building vocabulary files, basic dictation skills, creating and editing documents, cursor control, and detecting recognition errors.  
 (0+2)  
 Prerequisites: CIS090 and OAS090 or Satisfactory Score on Course Placement Tests

**OAS105 Document Editing and Proofreading 2 Cr. Hrs.**  
 This is a course in which the students develop skills in proofreading, editing, and formatting written business communications. Topics covered include use of possessives, spelling, capitalization, subject-verb agreement, pronouns, adjectives, verbs, sentence structure and wording, as well as proper use of punctuation marks. The student will be more proficient in proofreading documents keyed in any word processing program on the computer. Editing of documents using proofreader's marks will also be stressed. There is no prerequisite, although basic computer knowledge will be helpful in completing at-the-computer editing projects.  
 (2+0)

**OAS110 Records Management 3 Cr. Hrs.**  
 This is a course in the field of records management emphasizing principles and practices for manual and automated records systems. A practice set is used in which students practice card filing and correspondence filing using the alphabetic, subject, numeric and geographic filing systems. Computer applications are used in applying alphabetic indexing rules to a computer records database.  
 (3+0)

**OAS111 Electronic Health Records 3 Cr. Hrs.**  
 This course will give students an understanding of practical knowledge of managing Electronic Health Records (EHR). It will give students a hands-on experience using SpringCharts EHR. This course will also familiarize students with the basic operations utilizing managerial features of SpringCharts including patient scheduling, tracking patient activity, and sending and receiving reminders, messages, and emails.  
 (3+0)  
 Co-rerequisite: OAS/MEA229

**OAS160 Administrative Technology & Procedures 3 Cr. Hrs.**  
 This class is designed to emphasize the roles and responsibilities of an effective administrative assistant such as professionalism; effective verbal and written communications; time, stress, and anger management; office supplies and inventory; travel arrangements; meetings and conferences; ethical behavior; customer service; workplace teams, and more. Self-development and problem solving are also included in this course.  
 (3+0)  
 Co-requisite: ENG111



**OAS180 Medical Terminology 3 Cr. Hrs.**

This is a study of prefixes, suffixes, and word roots used in developing a medical vocabulary. Special emphasis is placed upon the usage, spelling, and pronunciation of these terms as they apply to the major body systems in terms of health and disease. Transfer Assurance Guide (TAG) approved effective summer 2007 (OHL005 - Medical Terminology).

(3+0)

**OAS200 Speedbuilding 1 Cr. Hr.**

This course emphasizes the development of speed and accuracy at the keyboard through timed writings and corrective drills at the computer. It will provide intensive practice in speed and accuracy development through remediation, reinforcement, and skillbuilding. Students will also learn speed and accuracy development techniques and strategies.

(0+2)

Prerequisite: OAS102

**OAS223 CCA Coding Exam Review 3 Cr. Hrs.**

This course is for students who have already learned the basics of procedural and diagnostic coding. Students can utilize this course to review the subject matter briefly, as it relates to overall coding issues. A Certified Coding Associate candidate will want to take this course prior to the national CCS-P and CCS exam courses.

(3+0)

Prerequisites: OAS/MEA229

Co-requisite: OAS/MEA283

**OAS224 CCS Hospital Coding Exam Review 3 Cr. Hrs.**

This course is for students who have already learned the basics of procedural and diagnostic coding. Students can utilize this course to review the subject matter briefly as it relates to the hospital reimbursement process, and complete abstracting exercises. The exercises will simulate the day-to-day coding in the hospital setting.

(3+0)

Prerequisites: OAS180, OAS/MEA229

Co-requisite: OAS/MEA283

**OAS225 CCS-P Physician Office Code Exam 3 Cr. Hrs.**

This course is for students who have already learned the basics of procedural and diagnostic coding. Students can utilize this course to review the subject matter briefly as it relates to the physician's office, and then complete abstracting exercises. The exercises will simulate the day-to-day coding in a physician's office.

(3+0)

Prerequisites: OAS180, MEA/OAS229

Co-requisite: OAS/MEA283

**OAS226 Home-Based Independent Medical Coder 3 Cr. Hrs.**

This course is for students who have already learned the basics of procedural and diagnostic coding. In addition, students should have earned the CCA, CCS, and/or CCS-P credential prior to attempting the material in this course. This course will provide useful information regarding business start-ups, resource and alternative coding opportunities for coding specialists to utilize while pursuing successful independent careers.

(3+0)

Prerequisites: OAS180, OAS/MEA229

Co-requisite: OAS/MEA283

Recommended: Certification as CCA, CCS, CCS-P

**OAS227 Diagnostic Coding 3 Cr. Hrs.**

This course gives the student an introduction to the process of diagnostic coding for health insurance reimbursement purposes using the International Classification of Diseases (ICD) system. Students learn the format and organization of the ICD system. They learn to identify abbreviations, symbols and modifiers used in the ICD coding system. Students learn to analyze medical documents to locate and identify primary, principle, secondary and concurrent diagnoses. Students then use their knowledge of anatomy, physiology, disease conditions, pharmacology, along with medical terminology with the ICD process to accurately assign diagnostic codes for insurance reimbursement and later correctly link diagnoses to procedures performed.

(3+0)

Prerequisite: OAS180

Co-requisite: BIO150

**OAS229 Diagnostic and Procedural Coding 4 Cr. Hrs.**

This course gives the student an introduction to the diagnostic and procedural coding processes for health insurance reimbursement purposes using the International Classification of Diseases (ICD) and Current Procedural Terminology (CPT) systems. Students develop an understanding of the format and organization of coding system manuals, and the conventions that guide their use. Students will use their knowledge of medical terminology, anatomy and physiology, disease conditions, and pharmacology to correctly assign diagnostic and procedural codes from documentation that link diagnoses to procedures performed.

(4+0)

Prerequisites: OAS180 and BIO 150 or BIO 232

Co-requisites: MEA 205 and MEA 110

**OAS230 Transcription 3 Cr. Hrs.**

This course is designed to develop skill in listening and transcribing recorded dictation using the computer. A variety of business correspondence is transcribed at the computer with an emphasis on developing language arts skills such as grammar, spelling, word usage, and vocabulary. The importance of mailable documents is stressed.

(3+0)

Prerequisites: ENG111, OAS101, and CIS112

**OAS249 Advanced Microsoft Suite 3 Cr. Hrs.**

This is a comprehensive course stressing the refinement of word processing, spreadsheet, database management, and presentation concepts and procedures; along with reviewing workplace requirements, updating of skills, and prioritizing work assigned. The assignments will go beyond the mechanics of the software. Students will learn design layout, writing, problem-solving, analysis, critical thinking, and information management skills. This course is based on prior experience in Microsoft Office: Word, Excel, Access, PowerPoint, Outlook; keyboarding; records management; and office procedures.

(3+0)

Prerequisites: CIS112 and CIS113

**OAS282 Medical Transcription 3 Cr. Hrs.**  
 This course uses transcription equipment to develop skill for accurately transcribing medical dictation on a computer. Dictation will cover patient history and physical examinations, discharge summaries, surgical, pathology, and laboratory reports. Knowledge of medical terminology, keyboarding accuracy, and speed of transcription will be expanded.  
 (3+0)  
 Prerequisites: ENG111, OAS180, OAS101, and CIS112

**OAS283 Computerized Medical Insurance 3 Cr. Hrs.**  
 This is a course that will cover the fundamentals of using medical office management software which includes: inputting patient data, processing insurance claims and payments, scheduling appointments, and printing medical reports. The computer skills gained will enable students to cross over to the workplace and use medical software in the health environment. Transfer Assurance Guide (TAG) approved, effective spring 2017 (OHL022 - Health Information Technology).  
 (3+0)  
 Co-requisite: OAS/MEA229

**OAS291 Internship I 1 Cr. Hr.**  
 This internship is a continuation of the job-related office services experience. The student is responsible for actively seeking the position within the College or for an outside organization. Second-year student or instructor permission expected.  
 (1+10)  
 Prerequisite: ENG111

**OAS292 Internship II 1 Cr. Hr.**  
 This internship is a continuation of the job-related office services experience. The student is responsible for actively seeking the position within the College or from an outside organization. Second-year student or instructor permission expected.  
 (1+10)  
 Prerequisite: ENG111

**PAR100 Introduction to Paralegal 3 Cr. Hrs.**  
 This course covers the basics of legal assisting, emphasizing the fundamental concepts of the legal system. The course includes an overview of the legal assistant career and ethical considerations related to the job.  
 (3+0)

**PAR101 Law Office Management 3 Cr. Hrs.**  
 This is an introduction to the day-to-day operation of a law office. Emphasis is placed on the development of accurate management systems, common procedures and structures of various law firms emphasizing time keeping, client files, record maintenance and retrieval, planning, billing, collections, and software usage.  
 (3+0)

**PAR110 Civil Procedures 3 Cr. Hrs.**  
 This is a study of the Federal and State Rules of Evidence and civil procedures. The basic elements of civil claims will be discussed and the initial phase of an action, the complaint, and the discovery process are examined. Emphasis is placed on the role and responsibilities of paralegals in discovery procedure and trial practice.  
 (3+0)

**PAR115 Family Law 3 Cr. Hrs.**  
 This course covers domestic relations law including marriage, divorce, annulment, separation, adoption, and the rights of children. The paralegal is introduced to the various documents and procedures used pertaining to these family matters.  
 (3+0)

**PAR205 Real Estate Transactions 3 Cr. Hrs.**  
 This course introduces the student to the law and terminology involved in real estate and real estate conveyances. The course also examines various contracts, mortgages, deeds, and leases. A case project is included in which students prepare an abstract of title by examining recorded documents. The course is designed to acquaint students with basic real property law, ownership, easement, and mortgages. Course also covers problems arising from sales agreements.  
 (3+0)

**PAR210 Legal Research and Writing 3 Cr. Hrs.**  
 This course provides the student with the basic research abilities which are necessary in law offices. Students use a law library including reporter systems, legal encyclopedias, codes, and computer searching systems.

**PAR215 Tort Law 3 Cr. Hrs.**  
 This course covers the traditional civil wrongs, from both the plaintiff and defendant standpoints. Actual cases will be briefed and discussed. The course stresses the importance of preparation prior to trial.  
 (3+0)

**PAR220 Criminal Law 3 Cr. Hrs.**  
 The Ohio Criminal Code and Rules of Criminal Procedure will be the foundation of this examination of the pretrial procedures in a criminal case. Students are exposed to the criminal justice system from the elements of offenses through post-conviction remedies. The drafting of motions and other documents associated with criminal matters are included.  
 (3+0)

**PAR221 Bankruptcy 3 Cr. Hrs.**  
 This course focuses on the procedures required and forms necessary to file in bankruptcy. The course identifies the skills necessary to gather information and assemble materials for a typical client file.  
 (3+0)

**PAR222 Estates, Trusts, & Wills 3 Cr. Hrs.**  
 This is a practical examination of the procedures for drafting wills and probating estates in Ohio. It is a study of the law as applied to the more common forms of wills, trusts, and intestacy. Organization and jurisdiction of the probate court are examined. The documents that must be prepared for the courts, the mechanics of probating the estate, and related accounting matters are examined.

**PAR290 Paralegal Internship 3 Cr. Hrs.**  
 This is a legal work experience related to the student's program of study. The student is accepted on the basis of academic progress and available work site. Enrollment only with instructor permission.  
 (1+20)

**PET110 Principles of Plastics 4 Cr. Hrs.**

This class is an overview of the plastics industry. Topics covered include basic polymer construction, types, and properties. Different plastic manufacturing processes and the equipment used both primarily and for secondary operations. Quality, defects, causes and monitoring methods including testing. Safety and environmental issues affecting the plastics industry will also be covered.

(3+2)

**PET115 Plastics Processes I 4 Cr. Hrs.**

This class is a basic overview of the injection molding, extrusion, blow molding, and thermoforming processes. Topics covered will include the materials and properties important to the processes. The injection molding machine, extrusion machine, blow molding machine, support equipment, and tooling used in all the processes will be covered. Job setting and establishing the process will be a large focus of the class.

(3+2)

Co-requisite: PET110

**PET215 Plastics Processes II 4 Cr. Hrs.**

This class is a continuation of the Plastics Processes I class. Topics covered are process optimization, documentation and trouble shooting. Special Injection molding and extrusion processes including co-injection-compression, structural foam, corrugated pipe, blown film, compounding, and others will be discussed also. Knowledge of these topics will be gained through text computer simulation and hands-on lab exercises.

(2+4)

Prerequisite: PET115

**PET231 Plastic Materials Testing 4 Cr. Hrs.**

This class is an overview of the more common plastic material properties and performance tests used in industry today. The properties covered will include: mechanical, physical optical, and other properties including a section on color specification and color testing. ASTM and ISO standard test methods will be used to establish and document tests and results. The class will also cover methods of determining an unknown material and general quality standards. Knowledge of these topics will be gained through text, demonstrations and hands-on lab exercises.

(3+2)

Prerequisites: PET110 and MTH090

**PET240 Injection Mold Tooling 4 Cr. Hrs.**

An overview of the tooling used in injection molding. The study will cover general mold construction and materials used in the mold. Topics will include the different mold styles such as 2-plate, 3-plate, hot runner, and cold runner. The different systems of a mold including runners, gates, vents, cooling, and ejection will be studied. Part design for acceptable tooling along with tooling practices used in current industry will also be studied. Knowledge of these topics will be gained through text, lecture, and some lab time.

(3+2)

Prerequisites: PET210 and IND103 with a "C" or better

**PET250 Plastics Secondary Operations 4 Cr. Hrs.**

This course is an overview of the different secondary processes and equipment used in the plastics industry. Topics will include thermoforming equipment and processes. Fabrication methods including welding and bonding will be covered. Processes such as hot stamping, pad printing, and other methods of decorating will be covered. Also, secondary operations such as trimming and forming will be discussed. The course will be taught as a lecture with some demonstration and hands-on labs.

(3+2)

Prerequisite: PET110

Co-requisite: MTH090

**PHI110 Critical Thinking & Logic 3 Cr. Hrs.**

An introduction to the principles of valid reasoning, emphasizing both deductive and inductive logic. Includes analyzing and evaluating arguments, as well as creating arguments in the form of the short, argumentative essay. **Writing Intensive.**

(3+0)

Co-requisite: ENG111

**PHI201 Introduction to Philosophy 3 Cr. Hrs.**

Examines enduring human concerns such as religion, science, knowledge, identity, morality, and justice, using a variety of philosophical perspectives. Transfer Assurance Guide (TAG) approved effective summer 2008 (OAH045 - Introduction to Philosophy). **Writing Intensive.**

(3+0)

Co-requisite: ENG111

**PHI210 Ethics 3 Cr. Hrs.**

An introduction to basic ethical theories and their applications. Students examine the relationship between personal and social values in particular cultural contexts. Transfer Assurance Guide (TAG) approved effective summer 2008 (OAH046 - Introduction to Ethics). **Writing Intensive.**

(3+0)

Co-requisite: ENG111

**PHI230 World Religions 3 Cr. Hrs.**

Study and comparison of the major attitudes toward life, human existence and the world embodied in major religions of the world. Hinduism, Buddhism, Confucianism, Taoism, Judaism, Christianity, and Islam will be several of the religions examined along with the cultural backgrounds of lands of their development. **Writing Intensive.**

(3+0)

Co-requisite: ENG111

**PHY100 The World of Science 3 Cr. Hrs.**

For non-science majors, assuming no background knowledge. Students will learn to scrutinize and assess critically scientific information, historical and current, from popular information outlets. This is a science appreciation course (same as CHM100, PHY100). Course projects will be based on the course prefix chosen.

(3+0)



**PHY101 Principles of Physical Science 4 Cr. Hrs.**

An introduction to the basic principles of the physical sciences. Includes subjects of physics, chemistry, geology, astronomy, and meteorology. Understanding of basic concepts is developed through emphasis on scientific methods and basic laboratory procedures and report writing. Includes simple problem solving, lab work and a research paper.

(3+2)

Prerequisite: MTH080 or satisfactory score on Course Placement Test

**PHY140 Astronomy 4 Cr. Hrs.**

An introduction to the science of astronomy. The course will cover elements of the history and development of astronomy, our new understanding of the solar system, stellar astronomy, the galaxies and the structure of the universe. Laboratory reinforces and supplements lectures.

(3+2)

**PHY150 Principles of Geology 4 Cr. Hrs.**

An introduction to the field of geology and the study of the earth. Covers minerals and rocks and their formation within the context of the earth's geologic history. Emphasis on rocks, soils, and land formations, plate tectonics and natural disasters such as earthquakes. Lab includes field trips and the identification of rocks and minerals. Some chemistry is recommended.

(3+2)

**PHY251 Physics: Mechanics & Heat 4 Cr. Hrs.**

An algebra based course covering mechanics including force, work, energy, and simple machines, heat and basic thermodynamic concepts, wave motion and sound. It includes problem solving, laboratory work and the writing of technical lab reports. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSC014 - General Physics I - Not for Physics majors and OSC021 - General Physics Sequence - Not for Physics Majors, course 1 of 2).

(3+3)

Prerequisites: MTH109 and MTH112

**PHY252 Physics: Electricity & Magnetism 4 Cr. Hrs.**

An algebra based course covering electricity and magnetism, light and optical concepts, and basic concepts of modern physics. It includes problem solving, laboratory work and the writing of technical lab reports. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSC015 - General Physics II - Not for Physics majors and OSC021 - General Physics Sequence - Not for Physics Majors, course 2 of 2).

(3+3)

Prerequisites: MTH109 and MTH112

**PLC200 Programmable Controller I 3 Cr. Hrs.**

The course is a study of the installation, programming and troubleshooting of programmable controlled systems currently used in an industrial environment. The focus will be on Installation, Programming, Engineering and Maintenance tasks performed with PLC systems. The primary PLC used for this class will be the Allen Bradley SLC-500, using RSLogix 500 and RSLinx software. The topics presented will be learned through text, presentations, various exercises, and hands on labs.

(2+2)

Prerequisite: IND120

**PLC210 Programmable Controller II (AB) 3 Cr. Hrs.**

This course is an advanced study of the Programmable Automation Controller (PAC) instruction set, and programming of Allen Bradley Control Logix Processors, and hardware interface systems. The PLCs used in this course will be the Allen Bradley Control Logix and Compact Logix Programmable Automation Controllers. PAC networks such as DeviceNet and ControlNet are discussed, as well as Ethernet interfaces. Students will study industrial applications of the PACs focusing on problem solving and project completion. The topics presented will be learned through text, presentations, various exercises and hands-on labs.

(2+2)

Prerequisite: PLC200

**PLC220 PLC III 3 Cr. Hrs.**

The class is a study of the Allen Bradley Panel View 600 hardware utilizing the Panel Builder 32 Programming software. PLC networks such as Ethernet and Device Net are discussed, as well as Ethernet interfaces. Students will study industrial applications of the Panel View, focusing on problem solving and project completion.

(2+2)

Prerequisite: PLC210 or instructor permission

**PLC230 Servo/Robotic Systems 3 Cr. Hrs.**

Servo/Robotics Systems is an introductory course in industrial robotics with emphasis on The Fanuc R-J3 series robot. The course is intended for students who wish to gain insight into robot operations in order to setup, test, run, and refine application programs for production. Students successfully completing the course will be able to: power up and jog the robot, execute production operations and recover from common faults, create and modify material handling programs and macros, and utilize robot input and output signals. The course consists of lectures, demonstrations, and a series of laboratory exercises using the Fanuc CERT training modules.

(2+2)

**PNE105 Effective Communication Skills 1 Cr. Hrs.**

The ability of health care professionals to communicate accurately and effectively in the context of a helping relationship is vital. The course provides tools with which to establish open therapeutic communication with clients, foster teamwork with colleagues, and deal with conflict and aggression in a constructive manner.

(1+0)

**PNE110 Special Topics in PN 1-4 Cr. Hrs.**

An independent study which focuses on a topic or selected problem in nursing, subject to approval and supervision of an assigned nursing instructor. Content and methodology to be arranged on an individual basis. Credit will be determined by the nature and extent of the independent study.

Prerequisite: Permission of the Dean of Nursing

**PNE117 Pharmacology I 1.5 Cr. Hrs.**

Pharmacological theory of broad classifications of common medications in current use with application to nursing. Includes federal drug legislation and the responsibility of drug administration. This is the first part of a 2-course sequence equating to PNE119.

(1.5+0)

Prerequisites: PNE120, BIO150 or BIO232



- PNE118 Pharmacology II** **3 Cr. Hrs.**  
Pharmacological theory of broad classifications of common medications in current use with application to nursing. Includes federal drug legislation and the responsibility of drug administration. This course is the 2nd part of a 2-course sequence equating to PNE119.  
(3+0)  
Prerequisite: PNE120
- PNE119 Pharmacology** **1.5 Cr. Hrs.**  
This course provides the student with a foundation for application of concepts of pharmacology in nursing practice. Drugs are presented by classification, groups and prototypes. Principles of drug action, interactions, contraindications, adverse effects, and nursing implications of each drug classification are discussed, as well as federal drug legislation and the responsibility of drug administration, including dosage calculation. The pharmacological aspects of nursing care are integrated using the nursing process. Nursing considerations and patient teaching for each prototype are emphasized.  
(3+0)  
Prerequisite: PNE117
- PNE120 Essentials of Practical Nursing** **8 Cr. Hrs.**  
An introduction to the body of nursing knowledge and skills essential for safe and accurate delivery of care utilizing the nursing process. Basic therapeutic communication, multicultural concepts, IV therapy, fluid and electrolyte balance, and ethical concepts are introduced.  
(4+12)  
Prerequisite: Admission to the Practical Nursing Program  
Co-requisites: BIO150 or BIO232, ENG111, and PSY110
- PNE121 Nursing Care of the Mother and Newborn** **2.5 Cr. Hrs.**  
This course focuses on nursing care of women related to reproductive health patterns. Emphasis is placed on pregnancy, childbirth, postpartum, and the newborn with nursing care directed in a family-centered holistic approach. Selected women's health issues and potential complications are included that pertain to the childbearing cycle. Legal and ethical directives are reviewed. This is an eight week course.  
(3+6)  
Prerequisites: PNE120 and BIO150 or BIO232  
Co-requisites: PSY230, NRS110 or NRS112, and PNE122
- PNE122 Nursing Care of the Child** **2.5 Cr. Hrs.**  
This course focuses on nursing care of the child from infancy through adolescence with health care needs. Emphasis is placed on growth and developmental concepts with nursing care directed in a family-centered holistic approach. Health promotion, maintenance, and restoration of the child are examined. Legal and ethical directives are reviewed. This is an eight week course.  
(3+6)  
Prerequisites: PNE120  
Co-requisites: PSY230, NRS110 or NRS112, and PNE121
- PNE123 Nursing Care: Adults I** **4.5 Cr. Hrs.**  
Focuses on the care of adults with both acute and chronic medical and surgical conditions. A body systems approach is utilized. Mental health concepts and basic concepts of bioterrorism are introduced. Students continue to develop skills in problem solving through the use of the nursing process as applied to individual situations. This is an eight week course.  
(6+10)  
Prerequisite: PNE120 and BIO150 or BIO232  
Co-requisite: NRS110 or NRS111
- PNE124 Nursing Care: Adults II** **5.5 Cr. Hrs.**  
This course builds on previous knowledge and concepts. Acute and chronic conditions of adults are presented over the remaining body systems. Legal issues in practical nursing are discussed as well as the leadership/management role of the practical nurse in caring for groups of individuals. This is an eight week course.  
(6+15)  
Prerequisites: NRS110 or NRS112, PNE121, PNE122, PNE123  
Co-requisite: BIO131
- PSY110 General Psychology** **3 Cr. Hrs.**  
This course examines the complex individual, the many factors believed to drive the individual and the resulting behavior. Students discuss empirical investigation and learn how to use these methods as tools in the discovery of individual functioning. This class also explores specific area of inquiry such as cognition, social and developmental psychology, learning, perception, consciousness, organizational, and health psychology. Personality, abnormal behavior, and psychological therapies are discussed. Transfer Assurance Guide (TAG) approved effective summer 2007 (OSS015 - Introduction to the Fundamentals of Psychology). **Writing Intensive.**  
(3+0)  
Co-requisite: ENG111
- PSY210 Abnormal Psychology** **3 Cr. Hrs.**  
This course is designed to provide students with an understanding of maladaptive behavior, its causes and consequences. Emphasis is on research methods and clinical assessment skills. Utilizing the DSMIV, special emphasis is placed on symptom recognition and treatment planning of psychological disorders. The impact of mental illness on the client's interpersonal relationships as well as cultural differences and societal response to mental illness will be explored. Transfer Assurance Guide (TAG) approved effective spring 2007 (OSS017 - Abnormal Psychology). **Writing Intensive.**  
(3+0)  
Prerequisite: PSY110, ENG111
- PSY220 Social Psychology** **3 Cr. Hrs.**  
This course provides students with the opportunity to explore the influences of other people, groups, and situations on the individual. Students should also gain a basic understanding of the research process and how it is used to investigate social psychological issues. Topics covered in this class include social perception and cognition, social influence, social relationships and applied social psychology. Students will have many opportunities to apply their new knowledge to critical thinking exercises and group projects. Transfer Assurance Guide (TAG) approved effective fall 2005 (OSS016 - Social Psychology). **Writing Intensive.**  
(3+0)  
Prerequisite: PSY110, ENG111
- PSY230 Human Growth & Development** **3 Cr. Hrs.**  
This course addresses the study of human development over the entire life span. Topics included in this course are emotional, cognitive, moral, social, and biological development. In addition to these topics, this course offers an analysis of the interaction of human characteristics within the individual and the relationship between individuals, environment and culture at various stages of development. Transfer Assurance Guide (TAG) approved effective spring 2008 (OSS048 - Life Span). **Writing Intensive.**  
(3+0)  
Prerequisite: PSY110, ENG111

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**QCT100 Quality Concepts 3 Cr. Hrs.**

This hybrid class combines on-line learning and lab work. It is an introduction to Quality and linear measurement for engineers and persons planning to work in a manufacturing or related environment. Students measure parts in the lab to obtain data. They work with the data to compute statistics and create charts and graphs that apply to theory. Students participate in team activities and on-line forums to share learning with each other and interact with the instructor. Students measure test parts to demonstrate instrument reading proficiency.

(3+0)

Prerequisite: MTH079 or MTH080

**QCT131 Quality for Lean Manufacturing 3 Cr. Hrs.**

This course deals with managing production operations in manufacturing plants. Two topics, "The 5S's: Workplace Organization" and "Mistake-Proof It!" prepare the student for a "Lean Manufacturing" project. Course is web based. Instructor is available for consultation via e-mail and telephone. Must have the ability to access web courses.

(2+2)

Prerequisites: QCT100 and ability to access web courses

**QCT141 Precision Measurement 3 Cr. Hrs.**

This course provides the student with theory and skills needed to perform dimensional inspections. Students will learn to study a part print, select, and use the proper measuring tool(s). Concepts introduced include precision, discrimination, accuracy and calibration. Previously learned print reading skills are expanded to include Geometric Dimensioning and Tolerancing.

(2+2)

Prerequisites: MET110, IND103 with a "C" or better

**QCT142 Advanced Concepts of GD & T 3 Cr. Hrs.**

This second course in geometric dimensioning and tolerancing requires the student to already have an understanding of the basics of GD&T. There are more in depth discussions on select topics not covered in detail in fundamentals classes. Examples are more complex and include explanations of concepts that create problems in the workplace. A method for dealing with tolerance stacks, another layer of GD&T expertise, will be demonstrated and practiced.

(2+2)

Prerequisite: MET110 or QCT141

**QCT243 Advanced Quality Improvement 3 Cr. Hrs.**

This course is one of a series of quality classes. The student learns more complex quality improvement methods by studying at least three of the following distinct topics: Advanced SPC; Six Sigma Start-Up; DOE: Screening Experiments; Measurement Systems Analysis; and Problem Solving. Topics are selected based on student's work experience and previously completed quality course content. All but two sessions may take place via the internet. Two, 3-hour laboratory workshops, are planned for Design of Experiment and Cp, CpK practice. Must have the ability to access web courses.

(2+3) On Demand

Prerequisite: QCT100 and ability to access web courses

**QCT250 Certified Quality Technician 3 Cr. Hrs.**

Review of the requirements and topics to become certified as an American Society for Quality Control Technician or Mechanical Inspector.

(3+0)

Prerequisites: QCT100 and QCT141

**REA210 Real Estate Principles 3 Cr. Hrs.**

This is an introductory course taught in accordance with guidelines set by the National and Ohio Real Estate Associations, and the Ohio Real Estate Commission. It is designed for professional real estate people, as well as the general public. The course covers elementary characteristics of real estate and various influences on real estate values and basic real estate math. It also is a foundation for further study and preparation of securing a sales license.

(3+0) Weekends -

**REA220 Real Estate Law 3 Cr. Hrs.**

This is a study of all the areas of law dealing with real estate. Emphasis is on the law of agency as applied to real estate brokers and salespersons. Law of fixtures, estates, leases, conveying of real estate, real estate managers, license laws of Ohio, zoning, cooperatives, and condominiums are also included. This prepares students for sales license testing.

(3+0) Weekends -

**REA230 Real Estate Finance 3 Cr. Hrs.**

This is an examination of the nature of financing real estate. Primary consideration is understanding mortgage loans and the mortgage market. The effects of governmental monetary and fiscal policies are also considered. Qualifying applicants and loan procedures are discussed throughout. This is a required course to prepare students for sales license testing.

(3+0) Weekends -

**REA240 Real Estate Appraisal 3 Cr. Hrs.**

This course is an examination and research of the components and parameters of financing real estate. Primary consideration is given to understanding mortgage loans and the mortgage market. The effects of governmental monetary and fiscal policies are also considered. Qualifying buyers (applicants) and loan (financing) procedures are discussed throughout. This is a required course to prepare students for sales license testing in Ohio.

(3+0) Weekends

**RTI102 Shop Algebra 2 Cr. Hrs.**

Basic elementary algebra. Material covered includes fundamental operations of positive and negative numbers, grouping symbols, algebraic axioms, equations, formula manipulation, special products, factoring, quadratic equations, and related applications to the shop.

(2+0)

Co-requisite: MTH050 or instructor permission

**RTI103 Shop Geometry & Trigonometry 3 Cr. Hrs.**

Geometry includes definitions and descriptions of geometric terms, axioms, theorems, propositions dealing with straight lines, triangles, polygons and circles, as well as perpendicular and parallel relationships. Trigonometry includes definitions of basic trigonometric functions, use of trigonometric tables, solutions of right angle and oblique triangle problems, use of sine, cosine, tangent and their reciprocals in the solutions of unknown angles, logarithms, and practical shop problems.

(2+2)

Prerequisite: RTI102 or MTH080

- RTI121 Shop Graphics – Blueprint Reading and Drafting** 3 Cr. Hrs.  
Print Reading and sketching including the alphabet of lines, orthographic projection, ordinary views, section views, auxiliary views, pictorial sketching, dimensioning, tolerancing, screw threads and fasteners, mathematics for design and an introduction to geometric dimensioning and tolerances.  
(2+2)
- RTI123 Electrical Print Reading** 2 Cr. Hrs.  
This course is a study of the basics of print reading for the skilled trades person. One element of this course is how to draw and sketch symbols on a print, and how to interpret basic blue prints. The focus of the course will be on electrical symbols and prints, but the course will also cover Mechanical symbols and prints as well.  
(2+0)
- RTI131 Industrial Safety** 2 Cr. hrs.  
This is a course in hazard recognition. Although students learn to identify potential hazards in the workplace, they will also develop a greater awareness of hazards in their environment in conjunction with the Industrial Commission of Ohio.  
(2+0)
- RTI135 Construction Safety** 1 Cr. Hr.  
This course emphasizes safety awareness and procedures for maintaining a safe work environment. Topics include construction hazards, health considerations, and injury prevention.  
(1+0)
- RTI141 Precision Measurement** 2 Cr. Hrs.  
Introductory course in learning to use the Machinery's Handbook Index to read and understand the various mechanical tables, rules, formulas, and general data. This course places emphasis on precision tools, reading and proper use of precision measuring tools and instruments such as mirometers, vernier devices, dial indicators and a review of tables and formulas.  
(2+2)
- RTI142 Applied Statistical Method** 2 Cr. Hrs.  
This class establishes the reason for and the philosophy behind a successful quality control program. It covers how to use probability, X-bar and R charts and MIL-STD-105D to solve quality problems.  
(2+0)  
Prerequisite: MTH080 or RTI102
- RTI143 Bench Work** 2 Cr. Hrs.  
This is the first machine shop course. Students learn the use of hand and power hack saws, burring, layout work on the bench, shearing a drilled section, filing and polishing, use of hand taps, and cutting threads with a die.  
(2+0)  
Prerequisite: RTI121 or instructor permission
- RTI144 Machine Repair** 2 Cr. Hrs.  
Basic fundamentals of methods and means to rebuild a production machine such as realignment of columns of tables, scraping of ways, replacing spindles, gears, bearings, gibs, etc.  
(2+0)  
Prerequisite: RTI143
- RTI146 BICSI Apprentice Training** 4 Cr. Hrs.  
This is the first in a series of three courses designed to teach the proper methods and procedures used to install telecommunication cabling systems in accordance with established industry standards. Both a written and hands-on exam must be passes to obtain in order to be registered with the Building Industry Consulting Services International at this beginning level.  
(1+0)
- RTI152 Programming of Numerically Controlled Machines** 3 Cr. Hrs.  
This course introduces the advantages and uses of Computer Numeric Controls in manufacturing. Students will use the blueprint of a mechanical part to determine the datum, the sequence of operations required, and the appropriate tooling to create a part using a CNC machine. G & M code programs will be written for use on a CNC mill or lathe, which will machine the part according to specifications. There is also an emphasis on workplace safety and safe work procedures. An introduction to geometric dimensioning and tolerances is included.  
(3 + 0)
- RTI153 Residential: Wiring I** 4 Cr. Hrs.  
This course is an introduction to the basics on residential wiring techniques. This class will do an overview of the complete installation process, and then move to specific installation issues. The students will be introduced to the National Electrical Code, and blueprint interpretation.  
(4+0)
- RTI154 Construction Electricity I** 4 Cr. Hrs.  
This course is an introduction to the basics of construction electricity. This class will do an overview of basic tools and installation concepts that will be focused on in later lessons. The student will also study the basics of DC electrical circuits.  
(4+0)
- RTI155 Residential: Wiring II** 4 Cr. Hrs.  
This course is a continuation of the basics of residential wiring. This class will focus more on the more advanced topics of residential wiring such as service entrances, and specialized outlets and wiring methods. Students will also working in a lab environment with hands on exercises to support the topics discussed in class.  
(3+2)
- RTI156 Construction Electricity II** 4 Cr. Hrs.  
This course is an intermediate type of course on the study of basic electrical circuit concepts. This class will do an overview of the operation of series and parallel circuit characteristics. The students will be introduced to the National Electrical Code, and basics on how to interpret it.  
(4+0)
- RTI157 NEC Fundamentals** 2 Cr. Hrs.  
This course is an introduction to the use of the National Electrical Code book. Students will learn to interpret the NEC articles and sections. The focus of this class will be on basic terms, navigation and interpretation, with the emphasis being on conductors and insulators.  
(2+0)



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**RTI166 National Electric Code I 1 Cr. Hr.**

This course is a breakdown of the three credit hour course RTI172, National Electrical Code that has been divided up into one credit hour sections. This will be offered at business sites in a five-week timeframe.  
(1+0)

**RTI169 Transformer Connections 1 Cr. Hr.**

This course is a study of the various connections and configurations of single and three phase transformers. The focus will be on the student being able to connect a single phase transformer for high and low voltage, and three phase transformers for the desired configuration. Students will learn proper ways to ground transformer systems.  
(1+0)

**RTI171 Industrial Electricity I 3 Cr. Hrs.**

A beginning course in electrical theory. Topics covered include electron flow, conductors, sources of electricity, electrical components, Ohm's Law dealing with voltage, current and resistance in the series, parallel and series parallel circuits. Also, briefly covers motors, generators and transformers. Lab work includes use of meters and how to measure circuit variables.  
(2+2)  
Prerequisite: MTH050 or satisfactory score on Course Placement Test.

**RTI172 Industrial Wiring (NEC) 3 Cr. Hrs.**

This course is focused on basic wiring concepts in an industrial workplace. Topics include, wire & conduit sizing and installation, switching circuits, distribution equipment and grounding equipment. Students will wire on industrial grade equipment. Students will also learn basic National Electrical Code information, primarily on Article 79 for Industrial Machinery. This course was named National Electrical Codes.  
(2+2)  
Prerequisite RTI 171 or instructor permission

**RTI174 Electrical prints & Troubleshooting 3 Cr. Hrs.**

Practical experience is provided along with the theory of operation for using equipment like the YOM, clamp-on voltmeter and other electrical test pieces. The student learns to troubleshoot by studying electrical schematics, wiring diagrams, pictorial drawings and demonstration boards using them for testing the various types of electrical circuits.  
(3+0)  
Prerequisites: RTI194 or instructor permission

**RTI178 Industrial Electricity C 1 Cr. Hr.**

This course is part of a breakdown of the three credit hour course RTI171, Industrial Electricity that has been divided up into two, one credit hour sections and a two hour lab section. This will be offered at business sites in a five-week timeframe. RTI178 will account for one credit hour.  
(1+0)

**RTI179 Close Circuit TV 1 Cr. Hr.**

This course is a study of basic operation of Close Circuit TV (CCTV) systems used in a commercial and industrial environment. The focus will be on the operation of video systems, and the operation of each component. Students will learn basic applications of these systems.  
(1+0)

**RTI181 Applied Welding Techniques 3 Cr. Hrs.**

A general orientation of three non-pressure processes commonly used in industry to join metal fusion alone - the oxy-acetylene, arc, and TIG methods. Topics covered include welding theory and practice, study of equipment safety measures, welding symbols and techniques, electrode classification, types of welds, and fusion of various types of metals.  
(2+2)  
Prerequisite: RT1121 or instructor permission

**RTI182 Maintenance Electricity 3 Cr. Hrs.**

This course is a study of the basic electrical concepts. Direct Current circuits will be the focus of this course, as well as the various circuit configurations. Students will prove the basic concepts though hands on lab experiments.  
(3+0)

**RTI183 Alarm Signaling and Low Voltage Circuits I 2 Cr. Hrs.**

This course is a study of basic low voltage circuits found in a commercial or industrial installation. The focus of this class will be on basic security sensors and alarms, and how they interface to a system. Students will learn how to install and troubleshoot these devices.  
(2+0)

**RTI184 Alarm Signaling and Low Voltage Circuits II 2 Cr. Hrs.**

This course is a study of basic low voltage circuits found in a commercial or industrial installation. The focus of this class will be on basic safety sensors and alarms, and how they interface to a system. Students will learn how to install and troubleshoot these devices.  
(2+0)

**RTI185 Premises Cabling 2 Cr. Hrs.**

This course is a study of the installation and operation of Local Area Networks. The focus of the course will be on the installation on and troubleshooting of network systems found in a commercial and industrial environment. Students will be taught how to install and troubleshoot networking equipment.  
(2+1)

**RTI188 Fire Alarms 1 Cr. Hr.**

This course is a study of basic fire alarm systems. The focus will be on the student understanding the operation and maintenance of a fire alarm system. The students will be introduced to Modern and legacy fire alarm systems.  
(1+1)

**RTI191 Electrical Principles and Applications. 3 Cr. Hrs**

This course is a study of basic semiconductor devices used in electronics. The focus of the class will be on the operation and characteristics of the basic semiconductor device, and how it is used in specialized equipment. Students will do hands on lab exercises to learn how to connect the devices in a circuit, and how to troubleshoot them.  
(2+3)



- RTI194 Industrial Electricity II 3 Cr. Hrs.**  
An advanced study of Industrial Electricity, focusing on electromagnetic devices, such as transformers, and relay types of devices. Student will wire relay circuits, timer circuits, and learn basic ladder logic and control system wiring concepts. Single and three phase distribution systems will also be discussed.  
(2+2)  
Prerequisite: RTI171
- RTI201 Industrial Applied Physics 3 Cr. Hrs.**  
Includes the application of Laws of Physics to machine operations, fluids, material properties, electricity, rigging and erecting, the efficient use of levers, gears, pulleys, parallel and non-parallel forces, uniformly accelerated motion and momentum in machining operations, machinery installation, and safe working methods in today's modern factory. Also includes properties of solids, liquids, and gases, expansion of materials, friction, and heat.  
(2+2)  
Prerequisite: RTI103 or instructor permission
- RTI210 Residential Security/ Communications 2 Cr. Hrs.**  
This course is a continuation of the study of the installation of branch circuits in a residential -environment. Low voltage circuit installation and communication -systems will also be discussed. The focus will be on installation and troubleshooting these circuits.  
(2+0)
- RTI211 Residential: Installation/Code 2 Cr. Hrs.**  
This course is a study of the National Electrical Code that pertains to residential installations. The focus of the class will be to interpret the NEC articles and sections, and how that relates to installation and practices of residential wiring installations.  
(2+2)
- RTI212 Installer: Telephone & Security Systems 3 Cr. Hrs.**  
This course is a study of the basics and characteristics of telephone and security systems. The students will be introduced to the various types of systems used in commercial and industrial installations. The focus of the course will be on the installation and troubleshooting of systems.  
(3+0)
- RTI213 Residential & Commercial Electronics 3 Cr. Hrs.**  
This course is an introduction to the basics on residential wiring techniques. This class will do an overview of the complete installation process, and then move to specific installation issues. The students will be introduced to the National Electrical Code, and blueprint interpretation.  
(3+0)
- RTI214 Commercial Wiring/Print Reading 2 Cr. Hrs.**  
The primary purpose of this course is to acquaint the learner with a ready source of information relevant to the NEC (National Electric Code) used in Commercial Wiring installations. Focus will also be on reading and interpreting electrical prints.  
(2+0)
- RTI215 National Electrical Code II 3 Cr. Hrs.**  
This course is a second level study of the National Electrical Code. This class will focus on the grounding techniques and requirements specified by Article 250 of the NEC. The students will be introduced to high voltage circuits and ground fault circuits.  
(3+0)
- RTI216 National Electric Code III 2 Cr. Hrs.**  
This course is a third level study of the National Electrical Code. This class will focus on the sizing of components in the motor branch circuit. The students will be introduced to hazardous location classifications and specifics, as well as special equipment specified by the NEC.  
(2+0)
- RTI217 National Electric Code IV 3 Cr. Hrs.**  
This course is a fourth level study of the National Electrical Code. This class will focus on the installation of more advanced and specialized equipment in the NEC. The students will also focus on the preparation for the NEC exam.  
(3+0)
- RTI218 Residential: Distribution/ Troubleshooting 4 Cr. Hrs.**  
This course is a study of the installation of branch circuits in a residential environment. The focus of the class will be on the installation and troubleshooting of various types of branch circuits found in the home. Specialized areas outside of the home will also be discussed.  
(3+2)
- RTI220 Electrical Test Equipment 2 Cr. Hrs.**  
This course is an introduction to the basic operation and application of various types of test equipment. Digital and analog types of meters will be discussed as well as oscilloscopes. The students will use the oscilloscope to measure voltage and time of an AC waveform, and then calculate the frequency.  
(2+0)
- RTI223 Rigging & Erecting 2 Cr. Hrs.**  
Applies the Laws of Physics to moving, setting up, and securing machines. Leverage and mechanical advantage, and the care and selection of equipment are other considerations in this course.  
(2+0)
- RTI224 Descriptive Geometry 2 Cr. Hrs.**  
A study of the relationship of points, lines and planes as they apply to manufacturing drawings. The course includes drawing lines and reading them in prints. Students will be able to read prints related to manufacturing.  
(2+0)
- RTI225 Geometric Dimensioning & Tolerancing 2 Cr. Hrs.**  
A basic course in dimensioning. Covers the principles of the ANSI Y14.5M standard. Intended to teach the student to read and interpret drawings utilizing the ANSI Y14.5M standard. Common practices not included in the standard and their interpretation are also considered.  
(2+0)

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**RTI226 Jig & Fixture Design 2 Cr. Hrs.**

To study and learn the function and design of basic drilling, boring, milling, and welding jigs, and fixtures that are either standardized or commercial plus special applications from problems occurring in shop situations.

(2+0)

Prerequisites: RTI121, RTI103 or instructor permission

**RTI227 Die Theory & Design Fundamentals 3 Cr. Hrs.**

This course investigates the details and techniques of die design theory and practice. Included is a study of forming and cutting dies and their component parts such as die blocks, strippers, stock guides, shredders, knockouts, nest gages, pushers, die stops, strip layout die sets, stock utilization and engineering formulas. A die design project will be required in which manipulative skills of design will be developed. Project areas include piece dies, blank dies, compound dies, progressive dies, forming dies, trim dies, cam dies and press dies.

(2+2)

Prerequisites: RTI121, RTI103 or instructor permission

**RTI228 Patternmaking Fundamentals 3 Cr. Hrs.**

The selection, use, and maintenance of hand tools, pattern shop tools and materials used in building patterns for industry. Also included are concepts of shop theory as applied to the molder and core maker it includes the processes from melting to the production of cores, sand type's binders, metallurgy, cooling and heat treatment.

(2+2)

Prerequisite: RTI226, course should be taken near end of apprentices program.

**RTI231 Metallurgy & Heat Treatment 2 Cr. Hrs.**

A basic course covering the nature and behavior of metals, crystall structure, theory of alloys, principles of heat treatment, properties of met and alloys and testing applications. The Rockwell and Brinell testers will be used.

(2+0)

Prerequisite: MTH080 or RTI102

**RTI232 Lubricants & Coolants 2 Cr. Hrs.**

Deals with the properties of commercial lubricants and coolants used various machines and machining operation.' Both physical and chemical properties and their effects on the environment are studied.

(2+0)

**RTI233 Industrial Pipefitting 2 Cr. Hrs.**

A study of the specifications, application, installation, and maintenance of various kinds of pipe, fittings, valves, pumps, and hand tools. The analysis of job requirements in terms of materials, time utilization and sequence operation is discussed.

(2+0)

**RTI234 Hydraulics & Pneumatics 3 Cr. Hrs.**

Presents basic components of hydraulic and pneumatic systems including pumps, control valves, control assemblies, and actuators. It also covers general understanding of basic laws and formulas used in designing simple hydraulic circuits including standard hydraulic symbols and maintenance procedures.

(2+2)

**RTI246 BICSI Installer Trainer II 4 Cr. Hrs.**

This course will be offered for the IBEW (Industrial Building and Electrical Workers) for their trainees programs. This course is a study of proper procedures for starting and working at a construction site. The focus of the class will be on safely installing systems and termination of wires on a new construction site.

(4+0)

**RTI265 Instrumentation & Controls I 3 Cr. Hrs.**

This course is a study of the operation and troubleshooting of Industrial Instrumentation systems. The focus will be on analog monitoring and controlled devices, connected to stand alone and PLC based controlled systems. The concepts of temperature, pressure, level and flow will be discussed, as well as the transmitters that connect the analog sensor signal to the analog I/O.

(2+1)

Prerequisite: RTI171, PLC200

**RTI276 Motors & Motor Controls 3 Cr. Hrs.**

This course is a study of the operation of DC & AC Motors and the device that control and protect the motors. Students will wire, program, and troubleshoot solid state motor drive systems. A focus will be on how the drive is interfaced to a PLC system. Motor soft starts and reversing circuit will also be discussed.

(2+2)

Prerequisite: RTI194

**RTI277 Industrial Electronics 3 Cr. Hrs.**

This course is a study of the electronic devices used in modern day industrial machinery. Solid state switching devices will be discussed, that includes transistors, SCRs and Triacs, as well as the firing devices used in current controlled circuits. Power supply circuits and basic amplifier circuits using controlled circuits. Power supply circuits and basic amplifier circuits using Operational Amplifiers will also be discussed. Students will focus on operation, application and troubleshooting of the various electronic devices.

(2+2)

Prerequisite: RTI171

**RTI282 Motor Control Systems: INT 2 Cr. Hrs.**

This course is a study of the basics of motor control systems used in an industrial or commercial environment. The focus will be on relay panel type of control systems. Students will learn basic wiring configurations and troubleshooting techniques.

(2+0)

**SCM200 Supply Chain Management 3 Cr. Hrs.**

This course focuses on the flow of information and goods between a business, its suppliers and its customers. Special attention is given to the development of relationships with a firm and its suppliers. Both internal and external aspects of the supply chain are analyzed.

(3+0)

Prerequisite: SCM220 or instructor permission

**SCM210 Purchasing & Materials Management 3 Cr. Hrs.**

This course focuses on supplier identification, evaluation, selection, and measurement. The relationship between the purchasing function and the rest of the organization is explored along with the correlation between supplier performance and inventory levels.

(3+0)

Prerequisite: SCM220 or instructor permission

- SCM220 Operations Management** 3 Cr. Hrs.  
This course focuses on the internal production process found in manufacturing facilities. Critical areas such as production planning, production line balancing, TOC analysis, lean, quality, MRP/MRPII, and inventory management are explored.  
(3+0)  
Prerequisite: MTH080
- SCM230 Physical Distribution & Logistics** 3 Cr. Hrs.  
This course focuses on the management of the movement of goods between local, national and international locations. Shipping documentation and packaging requirements are explored. The various modes of transportation are examined in detail.  
(3+0)  
Prerequisite: SCM220 or instructor permission
- SPN111 Spanish I** 4 Cr. Hrs.  
Introduction to Spanish through oral-aural drills, controlled conversations, reading and writing, with attention paid to grammatical structures and cultural awareness. Spanish I is the first half of a two-semester sequence designed primarily for beginners.  
(4+0)
- SPN112 Spanish II** 4 Cr. Hrs.  
Continuation of Introduction to Spanish with practice in speaking, reading, writing, and listening comprehension conducted within a culturally significant framework.  
(4+0)  
Prerequisite: SPN111 or instructor permission
- SSC101 Sociology** 3 Cr. Hrs.  
An introduction to the sociological perspective with a focus on the United States. Order and conflict theories are applied to broad areas of sociological concern, such as social inequality, sexual inequality, work and family, law and crime, race and ethnic relations, education and popular culture, modern urbanism, politics of food, health care, and the global society. Transfer Assurance Guide (TAG) approved effective spring 2007 (OSS021 - Introduction to the Fundamentals of Sociology).  
**Writing Intensive.**  
(3+0)  
Co-requisite: ENG111
- SSC120 American Government** 3 Cr. Hrs.  
A study of power as it occurs in the formation and implementation of public policy in the United States; based on the recognition that politics is an activity that creates the "realm of we" and molds personal identities. Special attention is given to the concepts of politics, justice, and democracy as a basis for examining our responsibility in the public realm. Topics covered are media, interest groups, political parties and campaigns, federal government structure and process, effects of power in domestic and foreign affairs, and making democracy. Transfer Assurance Guide (TAG) approved effective spring 2007 (OSS011 - American Politics and Government).  
**Writing Intensive.**  
(3+0)  
Co-requisite: ENG111
- SSC130 Comparative Government** 3 Cr. Hrs.  
A study of contemporary political systems, processes and policies of Western and non-Western countries. This will include aspects of political processes such as interest groups, political parties, elections, political socialization, and political culture. Transfer Assurance Guide (TAG) approved effective spring 2007 (OSS013 - Comparative Government).  
**Writing Intensive.**  
(3+0)  
Co-requisite: ENG111
- SSC210 Cultural Diversity** 3 Cr. Hrs.  
Explores ways that our society has served as a context for either more or less "cultural diversity." Emphasizes how historical relations among different people have affected images of "self" and "others" in U.S. society. Topics include thinking about culture, historical patterns and methods, the "American dilemma," race and class, and culture and gender.  
**Writing Intensive.**  
(3+0)  
Co-requisite: ENG111
- STA120 Introduction to Statistics** 3 Cr. Hrs.  
An introductory course introducing the student to the collection, analysis, and presentation of data. Presentation includes appropriate graphic, tabular, and numeric summaries of data. Major topics include Correlation and Regression, Hypothesis Testing, Analysis of Variance (ANOVA), and CHI Square analysis. Use the standard normal distribution to determine probabilities from z-values. Understand the Central Limit Theorem, and apply the addition and multiplication rules of probability.  
(3+0)  
Prerequisite: MTH090
- STA222 Business Statistics** 3 Cr. Hrs.  
A course introducing the student to the collection, analysis, and presentation of data. Major topics include: Descriptive and Inferential Parameters, Probability, Binomial, and Hyper geometric Distributions, Confidence Intervals, Hypothesis Testing, CHI-Squared analysis, and Linear Correlation and Regression.  
(3+0)  
Prerequisite: MTH109
- TRN113 Tractor-Trailer Operations I** 6 Cr. Hrs.  
This course familiarizes students with truck instruments and controls, while teaching them to perform basic maneuvers required to drive safely in a controlled environment. Additionally, students acquire basic coupling and uncoupling skills. Development of driving skills under actual road conditions, safe operating practices are integrated into the development of driving skills. A focus on the CDL driving requirements will be emphasized. Proficiency in math computation is needed for this course.  
(3+9)  
Prerequisite: Proficiency in math computations

**TRN204 Tractor-Trailer Driving I 6 Cr. Hrs.**  
The students will become familiar with trucking instruments and controls, performing basic maneuvers required to drive safely in an employer's environment. Additionally, students will be employed by a motor carrier and will receive compensation. The student will be observed under strict supervision.  
(1+15)  
Prerequisite: TRN113

**TRN205 Tractor-Trailer Driving II 6 Cr. Hrs.**  
The students will become familiar with trucking instruments and controls, performing advanced maneuvers required to drive safely in an employer's environment. Additionally, students will be employed by a motor carrier and will receive compensation. The student will be observed through periodic supervision during a probationary period of driving.  
(1+15)  
Prerequisite: TRN204

**VCT103 Introduction to Visual Communication 3 Cr. Hrs.**  
An overview designed to teach the student about the world of visual communication: how visual communication changes the world, how to use it effectively, and how it impacts the way we live.  
(2+2)  
Co-requisite: VCT108

**VCT108 Photo Editing 2 Cr. Hrs.**  
This course introduces the student to the fundamental process of creating camera-ready copy and art, color separation and proofing, image manipulation, scanning, and photo conversion methods. Various software packages, including Photoshop, will be investigated. Basic computer knowledge required. Recommend course be taken in conjunction with VCT182 Photography. Lab Fee.  
(1+2)

**VCT111 Layout & Design 3 Cr. Hrs.**  
This course covers the relationship among various design elements: balance, proportion, typography, and layout. Message composition, art presentation, copy layouts, the design process, and page makeup will be analyzed using current layout software. Lab Fee.  
(2+2)

**VCT120 Vector Graphics 3 Cr. Hrs.**  
This course focuses on the creation and editing of resolution-independent images. Students use digital drawing techniques to create vector graphics for use in other interactive media projects or as independent compositions. Topics range from the creation of vector graphics through choosing the appropriate output method for their intended use.  
(2+2)

**VCT182 Photography 3 Cr. Hrs.**  
An introductory course teaching basic photographic and digital editing techniques. Focus in on camera handling, lighting exposure, and composition. Experience includes creating digital files, digital editing, and image output techniques. Editing techniques will be limited to cropping, contrast and brightness, removal of unwanted flaws, and other correcting procedures. Photographic equipment required. Transfer Assurance Guide (TAG) approved effective summer 2008 (OAH002 - Photography, Digital).  
(1+4)

**VCT204 Concepts of Visual Communication 3 Cr. Hrs.**  
Advanced visual communication concepts including problem solving, research, design, script writing, storyboarding, training techniques, proposal preparation, cost estimating, and analysis. Overall project management techniques and environmental factors are covered in depth.  
(2+2) S

**VCT261 3D Computer Modeling 3 Cr. Hrs.**  
An introduction of computer modeling used to create 3-dimensional images. The student will be able to create realistic images using 3-dimensional modeling, textures, materials, lighting, and rendering. Computer experience required. Lab Fee.  
(2+2)

**VCT266 Multimedia Production 3 Cr. Hrs.**  
Study of multimedia through student exploration and experimentation in various visual presentation technologies including digital media. Emphasis will be on design and production of total presentations by planning content and using a variety of software and hardware.  
(2+2)  
Prerequisites: CIS129 or instructor permission

**VCT268 Video Production 3 Cr. Hrs.**  
The study of video production is to provide a basic knowledge of the process used in pre-production, production, and post-production activities. Students plan, shoot, edit, and distribute a video as part of a production team. Topics include preparing a script, developing a shot list, videography, editing footage, adding sound tracks, and exporting and rendering video for various uses in various formats. Transfer Assurance Guide (TAG) approved effective summer 2007 (OCM008 - Introduction to Single Camera Production).  
(2+2)

**VCT289 VCT Co-Op Experience 3 Cr. Hrs.**  
This is a work experience in visual communications. The student is accepted on the basis of academic progress and available work site at the College or an outside organization. Freelance work in the visual communication field also accepted. Enrollment with instructor permission.  
(1+20)  
Prerequisites: VCT103, VCT108, VCT111, VCT120, VCT182  
Co-requisites: CIS129, VCT268

**WLD100 Blue Print & Weld Symbols 2 Cr. Hrs.**  
This course covers basic engineering drawing principles, fundamental concepts of welding specifications, symbols, and blueprint reading as used in industry, and types of welding equipment and operational safety issues. The student will learn to interpret blueprint (welding) design, welding blueprint symbols, understand prints and everything that's included in a print and to prepare ability of working with them. Also an understanding of standards set by American Welding Society will be taught.  
(2+0)



**WLD110 Introduction to Applied Welding Techniques 3 Cr. Hrs.**

This course is an introductory course where the student will develop the knowledge and skill thru theory and lab practice in the basic welding processes which include SMAW, GMAW, OAW, PAC and OAC. Safety will be emphasized throughout the class and will be accordance with industry standards for manufacturing  
(2+2)

**WLD120 Gas Metal Arc Welding 3 Cr. Hrs.**

This course provides a basic understanding of the Gas Metal Arc Welding process and key variables that affect the quality of welds. Hands- on lab is provided to give the student the opportunity to become proficient at welding on a variety of metals, carbon steel, stainless steel and aluminum. Welding will be done on square groove and fillet welds using single pass, and multiple pass welds.  
(2+2)

Co-requisites: WLD100 and WLD110

**WLD130 Flat and Horizontal Shield Metal Arc 3 Cr. Hrs.**

This course is an introductory course where the student will develop the knowledge and skill thru theory and lab practice in the basic welding processes which include arc welding flat and horizontal positions. Safety will be emphasized throughout the class and will be accordance with industry standards for manufacturing.  
(2+2)

Prerequisites: WLD100 and WLD110

**WLD140 Gas Tungsten Arc Welding 3 Cr. Hrs.**

This course covers the basic principles and practices of Gas Tungsten Arc Welding or GTAW. The student will discuss basic welding terminology, safety and demonstrate a good working knowledge of TIG (Tungsten Inert Gas) welding principles. This course will identify basic AC/DC welding equipment, various ferrous and nonferrous metals. The Student will perform flat and out-of-position GTAW using the correct shielding gas and filler rods.  
(2+2)

(2+2)

Prerequisites: WLD100 and WLD110

**WLD150 Advanced Gas Metal Arc Welding 3 Cr. Hrs.**

This course provides an advanced understanding of the Gas Metal Arc Welding process and key variables that affect the quality of welds. Hands - on lab is provided to give the student the opportunity to become proficient at welding on a variety of metals, carbon steel, stainless steel and aluminum. Welding will be done on square groove and fillet welds using single pass, and multiple pass welds.  
(2+2)

(2+2)

Prerequisite: WLD120

**WLD210 Vertical & Overhead SMAW 3 Cr. Hrs.**

This course provides a basic understanding of the Shield Metal Arc Welding (SMAW) process and key variables that affect the quality of welds. Hands- on labs are provided to give the student the opportunity to become proficient at welding on a variety of metals including carbon steel, stainless steel, and aluminum. Welding will be done on square groove and fillet welds using single pass and multiple pass welds.  
(1+3)

(1+3)

Prerequisite: WLD130

**WLD220 Advanced Gas Tungsten Arc Welding 3 Cr. Hrs.**

This course covers the advanced principles and practices of Gas Tungsten Arc Welding (GTAW). The student will learn advanced GTAW terminology, apply safety standards and develop a working knowledge of TIG (Tungsten Inert Gas) weld principles. This course will identify advanced AC/DC welding equipment used with stainless steel and aluminum metals.  
(1+3)

(1+3)

Prerequisite: WLD140

**WLD230 Welding Fabrications & Layout 3Cr. Hrs.**

This course covers more engineering drawing principles, fundamental concepts of welding specifications, symbols, and blueprint reading as used in industry. Included are types of welding, welding equipment, and safety practices and precautions in the workplace. Emphasis is on print reading, interpretation, analysis, and demonstrations and uses of fabrication and knowledge of these skills.  
(1+3)

(1+3)

**WLD240 SMAW Plate Certification Procedures & Testing 3 Cr. Hrs.**

This course provides instruction in welding and layouts to understand and achieve welder test methods. The students will work in a hands-on, instructor led environment, simulating actual manufacturing processes. Course evaluation will include a written assessment and psychomotor assessment of skills.  
(1+3)

(1+3)

**WLD250 Pipe Welding 3 Cr. Hrs.**

This course provides instruction in welding and layout procedures for pipe welding. This will include pipe preparation, explanation and demonstration of pipe fit-up procedures, and discussion of pipe welding terms and definitions. The student will also demonstrate pipe welding acceptance criteria as related to the ASME Section IX welding code. Students will then apply welder certification code data, administer post plate procedure, and perform SMAW to certification skill level required to attempt for a welder certification.  
(1+3)

(1+3)

**WLD260 Pre-Pipe Certification 3 Cr. Hrs.**

This course covers principles and practices used in the layout and welding and layout procedures involving Shielded Metal Arc Welding (SMAW) applications. Topics will include pipe layout, fit-up, preparation and welding. Pipe welding terms and welding procedures will be explored. Student laboratory experiences will include determining pipe welding acceptance criteria and fabrication to the ASME Section IX welding code prior to welder certification application.  
(2+2)

(2+2)

Prerequisite: WLD250

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## Glossary

**Academic Advisor** - Students are assigned an academic advisor who can provide guidance regarding class scheduling and program requirements.

**Academic Divisions** - There are five divisions at NSCC - Allied Health, Business, and Public Services; Science, Technology, Engineering Tech, and Math; Nursing; and Arts and Science, Industrial Technology.

**Academic Probation** - Students are placed on academic probation at the end of any semester, including summer term, in which their cumulative grade point average falls below the minimum levels.

**Academic Suspension** - A student on academic probation will be suspended at the end of any semester, including summer, if the minimum cumulative grade point average is not reached while on probation.

**ACCUPLACER Assessment** - assessment of a student's reading, writing, and mathematical skills.

**Accreditation** - NSCC is accredited by the Higher Learning Commission.

**Admissions** - the department to which prospective students submit applications.

**Audit** - the term "audit" refers to a course which is taken without credit and must be defined on date of registration.

**College Credit Plus** - a unique opportunity for students in grades 7-12 to earn college and high school credit at the same time, enabling them to challenge themselves academically while getting a jump start on completing a college degree.

**Cost of Attendance** - The total amount it will cost a student to go to school. This amount includes, but is not limited to, tuition and fees, books, living expenses, transportation, and supplies. The students' direct cost is tuition, fees, and books.

**Credit Hour** - a unit of academic credit measured in semester hours; one credit hour usually represents one hour of class time per week.

**CRN** - a course reference number, which is four-digits.

**Cumulative Grade Point Average** - a student's grade point average for all college work based on a total number of quality points earned and the total numbers of semester hours.

**Dean** - this administrator directs an academic division (such as "Nursing") at the college.

**Dean's List** - a list honoring students for academic achievements.

**Developmental Courses** - any course that is below a 100 level (e.g. MTH080, CIS090, etc). These pre-college courses in reading, mathematics, science, and English help develop basic skills and prepare students for college level course work. These courses are graded pass/fail (S/U) and do not meet course requirements for graduation.

**Drop/Add** - If students want to add a course after the term has begun, they must complete an add form and obtain signatures from the instructor and dean of that division. To drop a course after the refund period is a "withdrawal" and can be completed on the web.

**Estimated Family Contribution (EFC)** - this amount is generated from a student's Free Application for Federal Student Aid (FAFSA) and is used to determine all financial aid eligibility.

**Federal Parent Loan (PLUS loan)** - a federally guaranteed loan program that allows parents to borrow funds to help pay educational expenses. The program requires the borrower to pass a credit check.

**Federal Stafford Loan** - a federal loan program that enables students to borrow money for his/her education costs. Students must complete a FAFSA and be enrolled in at least six credit hours a semester. This is a loan that must be paid back upon graduation or enrollment of less than six credits. Repayment is usually based on a ten-year schedule.

**Federal Supplemental Educational Opportunity Grant** - a grant that is available to undergraduate students who demonstrate exceptional financial need according to the results of the FAFSA.

**Federal Work Study Program** - a program that allows students the opportunity to work and earn dollars on or off campus.

**Free Application for Federal Student Aid (FAFSA)** - application to apply for federal/state grants, loans, and work study programs at [www.fafsa.ed.gov](http://www.fafsa.ed.gov).

**Financial Aid** - a combination of scholarships, awards, loans, grants, and work study programs to help students meet education costs.

**Fresh Start Policy** - a student may apply to change a D, F, U or WF grade to a W in a maximum of two courses which are not program requirements. Specific requirements apply.

**Full-time Ohio Instructional Grant (OIG)** - State grant monies for Ohio residents.

**Full-time Student** - Carries 12 or more credit hours in a full term (fall or spring), or carries 6 or more credit hours during the summer term.

**First-Year Student** - a student with 29 or less earned credit hours.

**myNSCC** - allows online access to student registration and account information.

**National Student Loan Database System (NSLDS)** - centralized database for student financial aid records.

**NSCC ID Card** - a student ID card issued by the College.

**Ohio College Opportunity Grant (OCOG)** - state grant monies awarded to part-time and full-time students.

**Part-time Student** - Carries 11 credit hours or less in a full term (fall or spring), or carries 5 or less credit hours during the summer term.

**PELL** - a federal program where free monies are awarded to undergraduate students with the highest amount of financial need and have not earned a bachelor degree.

**Satisfactory Academic Progress (SAP)** - level of academic standing that a student must maintain in order to continue receiving federal student aid.

**Second-Year Student** - has earned at least 30 credit hours.

**Student ID number** - a computer generated number issued to students upon admission to the College. The number begins with an "N" and contains 8-digits.