Academic Catalog

2023-2024

22600 State Route 34, Archbold, OH 43502 (419) 267-5511
www.NorthwestState.edu

Welcome to the NSCC Community

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 the NSCC family.

NSCC is the first choice for Northwest Ohio residents to obtain life-changing education that leads to a job in this area, or provide a strong foundation for a four-year degree. Whether you're here to gain a skill to use at work, or you want to obtain a full associate degree, NSCC has everything you need to achieve your goals.

This catalog details over 60 degree and certificate programs that serve as pathways to family sustaining wages. Additionally, you will find a comprehensive description of the College and our mission to strengthen local communities. We invite you to read through these pages where you will learn about Northwest State and our commitment to your success. We have very strong academic support services, numerous scholarships and student activities.

The College offers free academic support services through the Student Success Center and help navigating your way through our Advising Center. Our dedicated faculty provide strong discipline-based advice as well as opportunities for meaningful co-curricular activities. We are invested in your success in the classroom and beyond.

It is my pleasure to serve you as President, and I look forward to meeting you on campus.

Yours in service,

Todd Hernandez, DIT

2023-2024 Academic Calendar

Summer Semester 2023

June 5	Classes Begin
July 4	Holiday - College Closed
July 28	Last Day of Semester
July 31	Grades Due by 12 p.m.

Fall Semester 2023

August 23	Classes Begin
September 4	Labor Day Holiday
October 18	Second 8 weeks begins
Nov 22 - 26	Thanksgiving Break (22nd no classes, 23-24th College Closed)
Dec 11-16	Exam Week
December 16	Last Day of Semester
December 18	Commencement
December 18	Grades Due by 12 p.m.

Spring Semester 2024

January 15	MLK Day - College Closed
January 16	Classes Begin
March 11-17	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 12 p.m.

College Phone Numbers

Main Number: (419) 267-5511

Offices

Admissions Office:	(419) 267-1320
admissions@NorthwestState.edu	
Advising Center:	(419) 267-1390
advising@NorthwestState.edu	
Business Office:	(419) 267-1311
businessoffice@NorthwestState.edu	
Financial Aid Office:	(419) 267-1333
finaid@NorthwestState.edu	
President's Office:	(419) 267-1366
prez@NorthwestState.edu	
Registrar's Office:	(419) 267-1395
registrar@NorthwestState.edu	

Bookstore

NSCC Bookstore:	(419) 267-1256
bookstorenscc@NorthwestState.edu	

Library

Library Services:	(419) 267-1274
library@NorthwestState.edu	

Student Services

studentresources@NorthwestState.edu

Accessibility Services:	(419) 267-1334
Career Services/Student Activities:	(419) 267-1330
Success Center:	(419) 267-1457

Academic Divisions

Vice President for Academics:	(419) 267-1301
Arts & Sciences:	(419) 267-1247
Business & Public Services:	(419) 267-1345
Nursing and Allied Health:	(419) 267-1246
Science, Technology, Engineering Tech, and Math & Industrial Technologies:	(419) 267-1394

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 will 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: Lana Snider, Vice President of Enrollment Management and Student Affairs, 22600 State Route 34, Archbold, OH 43502 (419) 267-1233, lsnider@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.

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 lndividualized Studies, Associate of Science and Associate of Technical Studies.

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, 22 South High Street., 24th Floor, Room 2468, Columbus, OH 43215, (614) 466-0912.

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, (877) 644- 6338.

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 6355 - 113th St. N. #7709, Seminole, FL 33775, (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)
3390 Peachtree Road NE, Suite 1400
Atlanta, GA 30326
(404) 975-5000
www.acenursing.org

The Practical Nursing program is approved by the Ohio Board of Nursing, 17 South High St., #660, Columbus OH 43215, (614) -466 3947.

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.

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 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 lnternational/lntercultural 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, Montpelier, Napoleon/Henry County, Swanton, Van Wert, and Wauseon.

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 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.

Student Support Services

Accessibility Services (C140C)

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:

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.

For more information contact Shannon Floyd, Accessibility Coordinator at 419-267-1334 or sfloyd@northweststate.edu

Advising Center (C140)

Academic advisors are here to help you navigate academic programs and resources at NSCC.

Academic advisors assist students in the first 15 credit hours of the degree or certificate program. An academic plan will be developed using DegreeWorks. DegreeWorks provides a more accessible way for students to know where they are academically and how they can plan the rest of their college careers. The academic advisor will also walk the student through myNSCC to register for classes.

Contact the Advising Center at advising@northweststate.edu or 419-267-1390 to schedule an appointment.

Success Center (A101N)

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 contact the Success Center and request assistance. For more information, call (419) 267-1447 or email success@northweststate.edu

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

Library Services (A101)

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

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 (A105J)

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 on line 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 the division dean.

Student Activities (A105J)

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 (A105J)

Alpha Delta Nu Nursing Honor Society

The goal of the Alpha Delta Nu Nursing Honor Society is to recognize the academic excellence of students in the study of associate degree nursing. The group works to promote scholarship and academics in the profession of nursing, as well as encouraging the pursuit of advanced degrees in the profession. As provisional members or candidates of the Alpha Delta Chapter of the Alpha Delta Nu Honor society, students have had to maintain a cumulative GPA of 3.0 or higher and have earned a grade of "B" or better in each of their nursing classes. Students have also had to demonstrate conduct on campus and in the clinical areas that reflects the highest levels of integrity and professionalism.

Cru

Cru is a caring community passionate about connecting people to Jesus Christ.

Dean's Leadership Cluster (DLC)

The Dean's Leadership Cluster is a group of high impact students who have earned Presidential and Honors Scholarships. Members are dedicated toward achieving excellent grades, majoring in business, allied health and soil/crop management. They attend courses full time and have part-time jobs in their respective fields of study. They also serve their institution and community by volunteering for diverse initiatives. These students represent the future leadership in northwest Ohio. Part of their experiential learning is in meeting business leaders locally and across the country.

evMotorsports

The future of transportation is changing. This group will be working each year to prepare an electric powered go-kart for a collegiate evGrandPr ix racing event. The event represents an innovative approach to developing the next generation of automobile powered by electricity.

Kappa Beta Delta Honors Society (KBD)

KBD is an honor society for students who are enrolled in a business major and attaining a 3.5 GPA after completing 18 or more credit hours. An induction ceremony is held for eligible students during the fall and spring semesters.

Northwest State Cryptic Cyborgs

Affiliated with FIRST Robotics, this group will problem solve, design and build a robot to solve an obstacle course at competitions. The team is comprised of high school students enrolled at Northwest State through the College Credit Plus (CCP) program.

NWO Gamers

NWOGamers love to have fun and socialize through gaming. We host weekly events with video games, boardgames and card games. We even build stuff with Lego! The group also has a competitive club esports team, complete with scholarship opportunities.

Phi Theta Kappa Honors Society (PTK)

The Phi Theta Kappa Honors Society is an honor and service organization for students attaining a 3.5 GPA after completing 18 or more credit hours. An induction ceremony is held for eligible students during the fall and spring semesters.

Student Body Organization (SBO)

SBO is responsible for promoting academic, recreational and social activities for students. Some of the events that SBO is responsible for are Welcome Back Week, Chili Cook-Off and Spring Fling.

Women in STEM

Women in STEM is a group that promotes and supports women in STEM fields. The group plans outreach projects, including volunteer activities and visiting area schools and youth organizations to promote women in STEM. Members can also hear from guest speakers about their experience in engineering. The group is open to all Northwest State students.

3Dt Printing Club

This club helps students develop an understanding of 3D printing and its applications.

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.

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government Web site at https://www.benefits.va.gov/gibill.

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 12:01 A.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.

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 (7 hours)

To complete an application, call the NOCAC Central Office at 419-784-5136 ext. 1105.

NSCC Bookstore (A124)

For the convenience of the students, a well-stocked bookstore is available on campus. The bookstore hours are posted on the college website northweststate.edu/bookstore. 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.

For more information call 419-267-1256 or email rdurham@northweststate.edu

Food Service

Food Services offers dining options in the NSCC Cafe, on the second floor of the 'C' Building, cooler items, a salad bar, and daily specials. Cafe hours are posted on the college website northweststate.edu/food-services. For your convenience, cold sandwiches and salads are also available in the NSCC Bookstore on the first floor of the 'A' Building.

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. - 9:30 p.m.
Friday 7:30 a.m. - 3:30 p.m.

Game Area -Atrium
Cafe - Second Floor 'C' 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.

Veterans Benefits and Transition Policy

Northwest State Community College in accordance with the Veterans Benefits and Transition Act of 2018 will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries or other institutional facilities, or the requirement that a Chapter 31 or Chapter 33 recipient borrow additional funds to cover the individual's inability to meet his or her financial obligations to the institution due to the delayed disbursement of a payment by the U.S. Department of Veteran Affairs. This policy is limited to tuition funds paid by the U.S. Department of Veteran Affairs.

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. 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 Requirements

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.

Official High School Transcripts:

- Are sent directly to Northwest State Community College in a sealed envelope
- Include an official signature of the appropriate official at your institution
- Can be sent digitally if uploaded directly by the institute to Northwest State Community College's secure dropbox https://nextcloud.northweststate.edu/index.php/s/MCtrHLRFNGPtMWR or sent by using an electronic transcript processing service

Unofficial High School Transcripts:

- Have been opened by the student
- Is not an original copy of the document (photocopy)

Some programs may have additional admission requirements including an application and appropriate GPA.

Northwest State Community College reserves the right to check with the high school to confirm the validity of a student's diploma and confirm with the relevant department or agency in the state in which the secondary school is located that the secondary school is recognized as a producer of secondary school education.

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 1-20, 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 and course evaluation. If you would like to request transfer credit for courses completed overseas, you must have transcripts evaluated by a professional evaluation company like http://www.WES.org. Only original, unopened evaluations will be accepted.
4. A photo copy of the student's VISA/PASSPORT and/or residency card and the 1-94.
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 GPA 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 TOFEL computer based score of 173 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 ($13,610) must be sent to the college before an I-20 will be issued.
   An additional $3,000 should be brought for spending money upon entering the United States.

The complete international student policy and required forms can be found on line at NorthwestState.edu/apply-now#international 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/accuplacer 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 ENG 112 - 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 ENG 111 and ENG 112, or
- Take ENG 112 and another writing intensive ENG course. The second writing course will be substituted for ENG 111, but cannot be used to meet a Humanities requirement. The approved list of writing courses is maintained by the Dean of Arts & Sciences.

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. There must be at least a one month waiting period between testing dates involving a Departmental Proficiency test **only**.
3. Placement test results are valid for three years. After three years, retesting is recommended.
4. Students may choose to retake the entire ACCUPLACER Assessment or choose specific sub-tests for retesting.

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 MTH 080 - Review of Beginning Algebra, or MTH 085 - Math Literacy. Proficiency can be demonstrated on the placement test at the time of entry, by passing a proficiency test, by successfully passing the course MTH 080 - Review of Beginning Algebra or MTH 085 - Math Literacy, 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

Orientation is a required for new certificate or degree seeking students at Northwest State Community College. Orientation is an online program that is completed prior to registering for classes the first semester. For questions about orientation please call (419) 267-1320 or email Admissions@NorthwestState.edu.

Academic Advisors

To provide equality of access to advising services, all new and transfer learners are required to participate in mandatory academic advising before registering for their first semester of classes. Academic advisors assist learners in developing personalized educational career pathways and resolving academic and non-academic barriers. Additionally, they provide wraparound holistic support to learners during key decision-making times on their educational journeys. To connect with an academic advisor, please contact the Advising Center at (419) 267-1390 or via email at advising@northweststate.edu.

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).

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.

Ohio Transfer Policy

State of Ohio Policy for Institutional Transfer

The Ohio Department of Higher Education, 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.

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 fulfills partial degree requirements for these majors. For more information on TAGs for specific fields of study, see the ODHE website at 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.

Financial Aid

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 (C110)

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. Please note that Federal Student Aid regulations are subject to change at any time, please refer to the Northwest State website for the most current financial aid policies.

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.gov. Completing the Free Application for Federal Student Aid (FAFSA) on line 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.gov.
- File your FAFSA electronically at www.studentaid.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.

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 Federal Direct Loans are awarded to students based on their grade level and financial need. 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.
- 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 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 "A' '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 may be 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. Workstudy 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 pay period. 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, and attending, at least 6 credit hours to qualify for a student loan.
- Students must complete the Annual Student Loan Acknowledgment each year they borrow a new federal student loan.
- New student loan borrowers must complete the Master Promissory Note (MPN) and Enhance Counseling.

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

Charles E. Schell Foundation Assistance Loan: The Charles E. Schell Loan was established at the request of the Last Will and Testament of Charles Edison Schell to provide educational assistance loans without interest and without security to qualified students. The loan will aid students in securing a practical education that may not otherwise be attainable at NSCC. The eligibility criteria includes:

- Minimum 2.0 GPA
- Must be between the ages of 18 and 25 years old.
- Enrolled in at least half-time (6 credit hours) during the term the loan is requested
- Be a citizen of Ohio, Kentucky, West Virginia or adjoining states
- Born in and citizen of the United States of America; student's parents must also have been born in and are a citizen of the United States of America
- No outstanding Charles Schell loan balance

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 $96,000
- 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)
- OCOG can only be used for tuition and general fees
- 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
- Certain federal veteran's education benefit programs allow for students to receive OCOG funds to assist with their housing and living expenses.
- Qualified foster youth are eligible for OCOG up to the maximum public school amount. Qualified foster youth should receive a letter from the Ohio Education and Training Voucher Program that will list their award.

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 on line 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 Direct 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. A copy of this repeated course policy can be obtained at the Financial Aid Office or found online.

Financial Aid Fraud

Northwest State has established guidelines for the prevention, identification of and response to identification of financial aid fraud. When NSCC student is identified as being potentially being involved in a financial aid fraud ring, their account at the college is placed on hold. This hold prevents students from registering and prevents their financial aid from disbursing to their student account. The hold will remain in place until the student has provided all documents that are requested during the investigation. The documents must be presented in person to the Director of Financial Aid or designee. Please refer to the NSCC college website to review the full Fraud Policy.

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 and pace of progression (completion rate).

2. **Pace of Progression (Completion Rate):** 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.

Examples of completion rates are on the 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.	54 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. 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 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 the loan entrance counseling exam and Master Promissory Note (MPN) if you are a student loan borrower. These may be completed online at www.studentaid.gov. Your loan funds will be delayed until you complete these requirements.
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.

Student Support/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 Cl 10. Office hours are Monday and Tuesday 8:00 a.m. to 6:00 p.m. Wednesday, and Thursday 8:00 a.m. to 4:30 p.m., and Friday 8:00 a.m. to 12:00 p.m. (remote) Office hours are subject to change during the summer months and between semesters when classes are not in session. We recommend calling (419) 267-1333 before making a trip to campus.

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.

Fees and Refund Policy

Tuition and Fee Installment Plan (TIP)

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 non-credit 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.

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.
7. A veteran student with service-connected disabilities utilizing chapter 31, Vocational Rehabilitation and Employment.

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 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 term will not be considered for that semester. Once enrolled, the student must maintain satisfactory academic performance.

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. 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.

Academic Policies and Procedures

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 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.
- lntentionally 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.

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.

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 GSD 100 - Success Seminar.

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 nondirectory 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 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

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.

Adding or Dropping Classes

Students add or drop classes through myNSCC at 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.

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.

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.

Curriculum 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.

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.

Course Cancellation for Cause

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

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 (course-by-course evaluation) 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 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. Official scores are sent from source directly to Northwest State Community College(NSCC).

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.

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

ENG 111	3	B	9
CIS 119	1	A	4
CHM 101	4	B	12
MTH 109	4	C	8
	12 credits		33 points

33 ÷ 12 = 2.75 cumulative GPA

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.

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

Dropping Classes

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

Fresh Start Policy - Academic

Once in a lifetime, a student may apply for a change of grade from "D'", "F", "U", or "WF" to a W in courses which are not program requirements. The fresh start requirements for application are:

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.

Fresh Start Policy - Medical

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.

Grade Reports

Grades are accessed electronically through myNSCC.

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.

A	**Superior Quality** (4.0 Credit Points)
B	**High Quality** (3.0 Credit Points)
C	**Average** (2.0 Credit Points)
D	**Below Average** (1.0 Credit Points)
F	**Failing** (0.0 Credit Points)
I	**Incomplete** (Must be completed by the end of the next semester for fall and spring, and September 15 for summer.)

P **Progress** (0.0 Credit Points)

W **Withdrawal**

W/M **Military Withdrawal**

S **Satisfactory** (Satisfactory work for a developmental course).

U **Unsatisfactory** (Unsatisfactory work for a developmental course.)

AU **Audit** (no credit)

CR **Credit Given** (Credit granted through proficiency testing or prior learning.)

SC **Satisfactory Credit** (Satisfactory work for an elective course taken on a pass/fail basis.)

UC **Unsatisfactory Credit** (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.*

Graduation Ceremony - 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 8-10 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.

Graduation Requirements

The associate degree is awarded upon the successful completion of any degree programs. A certificate is awarded upon the successful completion of any certificate programs. Individuals may earn more than one degree or certificate provided all requirements are met as stated in this policy and the College Catalog.

The College shall maintain the list of degrees and certificates eligible for graduation and published in the college catalog and other environs that the College deems appropriate.

To be considered a candidate for an associate degree or a certificate, the student must have completed all the requirements for that degree/certificate as described in the College Catalog in effect at the time the student enrolled in the program leading to that degree.

The Catalog in effect at the time of a student's acceptance to the college is their "Catalog in force." If the requirements for the degree change while the student is enrolled in a degree or certificate program, the student may choose their entrance Catalog or any subsequent catalog as their chosen Catalog in force for meeting their graduation requirements.

Students are expected to complete the requirements for their desired degree or certificate in a timely fashion. That period is six calendar years from the time the student initially enrolled in their degree or three calendar years for their certificate, unless otherwise determined by specific program accreditation. If the student does not receive a degree or certificate in a timely fashion, their graduation requirements become the Catalog in force at the semester of graduation. Exceptions to this policy can be granted by the Vice President for Academics of the College.

To be considered a candidate for a degree or certificate, the student must meet the program grade point average requirements, complete the minimum number of credit hours at NSCC for the degree or certificate, and complete or submit applicable assessment activities.

The College shall verify eligibility of individual students to receive degrees or certificates in accordance with established procedures.

The Registrar will perform a degree audit to verify that all applicable degree/certificate requirements have been met. Current graduation requirements include:

- Successful completion of all required courses in the program. Certain majors require a "C" or better in certain courses to meet graduation requirements. Each required course in which an "F" grade is received must be repeated (please refer to Course Repeat Policy and/or Fresh Start Policy).
- Attain a minimum 2.0 grade point average in their technical courses.
- Earn a minimum grade point average of 2.0.
- Complete a minimum of thirty (30) percent of the credits from Northwest State Community College.

Students are eligible to receive only one (1) 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.

The graduation application is available in the Registrar's Office and online. The petition is due by September 1 for fall graduates, and October 15 for spring and summer graduates.

Students who are verified as having met all degree/certificate requirements and do not have an outstanding obligation (eg: financial, academic) to the college; will receive their diplomas within 90 days of when all final grades have been verified.

Official college diplomas will be mailed to the mailing address listed in the college's student information. Students are expected to keep their contact information, including mailing address, up-to-date.

The college may choose to use a surrogate or unofficial diploma to assist in celebrating student completion of their degree or certificate requirements.

Graduation with Honors

Any student graduating with a cumulative point average of 3.50 or higher will be graduated with honors, including a notation of this honor placed on the student's diploma and transcript, as follows:

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

Graduates' honors designations printed in the commencement program are based on fall semester calculations of all grades.

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

Graduation Process

The college's Vice President for Academics or designee is responsible for creating and maintaining college procedures and process that facilitate the timely completion of graduation requirements, including the creation of degree audits or other similar reports that indicate a student has completed their degree or certificate requirements.

Students have, and are strongly encouraged to consult with their academic or faculty advisor to create an academic plan to meet desired degree or certificate requirements. Students are also strongly encouraged to review their academic plan on a regular basis to ensure accuracy and progress in a timely manner towards their desired degree or certificate. Students can access their degree audit information anytime.

Students are ultimately responsible for completion of all degree or certificate requirements for graduation as specified in the NSCC Catalog.

The college's Registrar or designee is responsible for verifying that degree or certificate requirements are completed and the process of creating official documents (e.g. transcripts/diplomas) signifying degree or certificate completion. This process can be initiated by the college or by the student.

> The student may initiate the process by completing a graduation application and submitting it to the Registrar.
>
> The college may initiate the process upon reviewing academic records.

The college has the authority to award degrees or certificates upon completion and verification of graduation requirements.

The graduate is strongly encouraged to attend the commencement ceremony associated with the completion of their degree or certificate requirements.

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 authorized 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.

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 submit midterm grades for 16 week courses only. 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.

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.

Readmission to the college will include the additional statement regarding Service members and reservists: When a learner whose enrollment is interrupted by mobilization or call to active duty, the college will make every possible effort to place the returning learner back into the academic track as close as possible to the point prior to activation in accordance to the Federal Aid Student Handbook, Chapter 3 of Volume 2 [DoD MOU, paragraph 3,i(1)]. The Registrar's office will be the point of contact the learner must provide notification of service and notification of intent to return.

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. To repeat a course more than twice the student has to obtain the Dean's permission. 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.

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.

Second-Year Student Status

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

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
Address (only sent to four-year higher education institutions)
Email (only sent to four-year higher education institutions)
Major

Birth Date
Honors
Full-time or Part-time status
Dates of Attendance
Degree(s) Conferred

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.

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 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.

Academic Grievance Procedure

Academic Matter

Informal discussion between the student and the faculty member or Dean (if faculty unavailable) 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 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 faculty member 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. The faculty member will issue a written response to the student within six (6) instructional days of receipt of the written grievance.
iii. If the problem is not resolved in step one or the above time frames are not adhered to by the faculty member, 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 or designee of the individual involved, with a copy to the Chief Academic Officer.
ii. Within six (6) instructional days of receiving all written documentation, the immediate supervisor or designee will meet with the student and the individual involved to attempt to resolve the problem to the mutual satisfaction of both parties. The Chief Academic Officer may attend this meeting at his/her discretion.
iii. Within six (6) instructional days after the meeting, the immediate supervisor or designee will issue a written response to all parties involved, with the original copy to the Chief Academic Officer.
    1. 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.
    2. If the problem is not resolved, the student may proceed to Step 3.
iv. Students must strictly adhere to the timing deadlines provided for in each step outlined in this procedure. Failure to do so will be considered a waiver of further rights of appeal and will result in a closure of the matter. However, the college may consider at the discretion of the Chief Academic Officer extraordinary extenuating circumstances that warrant an exception to the deadlines herein. Any request for such exceptions must be made in writing to the Chief Academic Officer within a reasonable time given the circumstances. In no event shall reasonable time be extended beyond 30 days of the originally missed deadline.

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 Chief Academic Officer. 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 Chief Academic Officer will appoint an ad hoc due-process committee to hear the grievance.
    1. The ad hoc committee will consist of five (S) members: one grade level I, II, or Ill 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 Chief Academic Officer. Grade level I, II, and Ill include Vice Presidents, Division Deans and student service professionals.
    3. The Chief Academic Officer will appoint one member of the ad hoc committee to act as chair for the proceedings.

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

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 student, the faculty member/ administrator involved, the department dean, and the Chief Academic Officer, 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 Chief Academic Officer's office.

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

College Policies

Affirmative Action

Policy Statement

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.

- The College is fully committed to providing:
- Equal opportunities in all employment-related activities, including but not limited to, recruiting, hiring, advancement, transfer, compensation, benefits, and terms of employment;
- Equal opportunities in all educational, social and recreational programs;
- Physical access to all facilities.

It is the intent that this policy be in full compliance with all applicable federal and state laws and regulations concerning affirmative action.

Americans with Disabilities Act

It is the policy of Northwest State Community College to comply with all federal and state laws concerning the employment of persons with disabilities. Pursuant to Titles I and II of the Americans with Disabilities Act (ADA) of 1990, Section 504 of the Rehabilitation Action of 1973, the college provides equal employment opportunities and reasonable accommodation for qualified individuals with disabilities. It is the college's policy not to discriminate against qualified individuals with disabilities in regard to application procedures, hiring, advancement, discharge, compensation, training or other terms, conditions and privileges of employment.

Anti-Hazing (Collin's Law)

Northwest state community college ("NSCC" or "college") prohibits hazing as defined in this policy. The college will investigate and respond to all reports of hazing as outlined in this policy.

NSCC is committed to a safe and respectful campus environment that aligns with our institutional values. It is the college's belief that learning and working occurs in environments where learners, employees, and visitors feel safe, secure, and welcome.

The college acknowledges that as part of the higher education experience that learners and some employees participate in various extra-and co-curricular groups and organizations with different purposes and processes for affiliation. The college supports traditions within organizations that match the college's core values. Hazing is antithetical to our institutional mission and has no place at NSCC.

The college recognizes that a student organization or group may belong to a national oversight organization that also holds students accountable to expectations and standards (e.g., the national organization for a local fraternity chapter). NSCC is committed to partnering with these outside affiliates to address hazing allegations and will communicate with them as appropriate.

Definitions:

Hazing-as defined in section 2903.31 of the Ohio Revised Code, hazing is defined as "doing any act or coercing another, including the victim, to do any act or initiation into any student or other organization or any act to continue or reinstate membership in or affiliation with any student or other organization that causes or creates a substantial risk of causing mental or physical harm to any person, including coercing another to consume alcohol or a drug of abuse, as defined in section 3719.01 I of the Revised Code."

Hazing is a form of power-based violence. Hazing can occur with power differentials in all types of relationships regardless of membership status, including an initiate, an individual seeking reinstatement, a current member, or a current student with inactive status. In part, hazing is an attempt to exert control or influence from one person to another. What constitutes hazing is a dynamic and changing set of circumstances that requires a situational response.

Therefore, NSCC further defines hazing to include:

Any action or situation which recklessly or intentionally endangers the mental, emotional, or physical health or safety of a student for the purpose of initiation or admission into, or affiliation with, any student organization or group regardless of the person's consent to participate.

Brutality of a physical nature including but not limited to paddling, whipping, beating, branding, forced calisthenics, or exposure to the elements.

Coerced consumption, including but not limited to any food, alcoholic beverage, liquid, drug, or any other substance that subjects the student to an unreasonable risk of harm.

Acts intended to cause mental stress, including but not limited to sleep deprivation, transportation or abandonment, confinement to a small space, forced exclusion from social contact, forced conduct which could result in embarrassment, any forced activity that is designed to shame or humiliate, or any action of harassment (as defined in the student code of conduct).

Coerced activities, including but not limited to violation of local, state, or federal laws, violation of college policies, rules, or regulations, and personal servitude.

Acts of sexual harassment and other sexual misconduct as defined by NSCC policy 14-3-35.

Members of the college community-faculty, staff, learners, volunteers (e.g., advisors and volunteer coaches), organizations, groups, alumni, and consultants are members of the college community for purposes of this policy.

Organization -an organization consists of a number of persons who are associated with each other and have registered with the college as a student organization (such as clubs, club sports, or fraternities and sororities).

Groups -a group consists of a number of persons who are associated with the college and each other, but who have not registered, or are not required to register, as a student organization (including but not limited to athletic teams, musical or theatrical ensembles, academic or administrative units, and clubs not registered as student organizations).

Scope

The college holds students accountable for their behavior both on and off-campus and addresses behavior that is a violation of the "student code of conduct." This policy applies to hazing that takes place between two or more people who are affiliated with the institution regardless of if it occurs at sanctioned or non-sanctioned events. This policy applies to student organizations, groups, and individuals and is effective from matriculation to commencement, including breaks in the academic year.

Outcomes and consequences

Hazing is a serious offense of the college "student code of conduct" and, therefore, is subject to the full range of sanctions (reprimand, disciplinary probation, suspension, and expulsion). In addition, other educational activities may be required as conditions of the sanction. An individual, organization, or group may be subject to other outcomes in accordance with the applicable outside constituents, academic processes, group in which the student is involved, or their governing bodies. The college has the right to act regardless of the actions of a governing body.

Hazing as defined, as well as some of the specific acts involved, may also violate local, state, or federal laws or regulations; for example, the use of force (including the threat of force) may subject the perpetrator to criminal charges of simple, felonious, or aggravated assault. Punishment upon conviction or plea will be as the court decides, and is independent of any decisions made by the college under this policy.

The victim/s of any hazing may file a civil action against one or more individual perpetrators, or against the local or governing organization. Such suits may result in sanctions as the court directs, independent of any decisions made by the college under this policy.

Individuals who participate in hazing or recklessly permit the hazing of another may also face criminal penalties in accordance with sections 2903.31 and 2903.311 of the Ohio Revised Code. These penalties are in addition to sanctions imposed by the college under this policy.

Reporting

Duty to report

Immediately upon learning of potential hazing, all employees, volunteers, advisors, consultants, and alumni have a duty to report any alleged violation of hazing. This obligation extends to reporting what someone tells you and/or what you observe. Each mandated reporter must report to the college and to law enforcement. Student employees have a duty to report violations of this policy of which they become aware in the course of their duties when these duties include responsibility for the safety and wellbeing of other members of campus community or if they have supervisory, evaluative, grading, or advisory responsibility over other members of the campus community.

Separate from and in addition to any administrative duty to report hazing, section 2903.0311 of the Ohio Revised Code states that "[n]o administrator, employee, faculty member, teacher, consultant, alumnus, or volunteer of any organization, who is acting in an official and professional capacity shall recklessly fail to immediately report the knowledge of hazing to a law enforcement agency in the county in which the victim of hazing resides on in which the hazing is occurring or has occurred."

Further, section 2921.22 of the Ohio Revised Code requires any person who knows that a felony has been or is being committed to report it to law enforcement. It is a criminal offense to knowingly fail to make the report. If you suspect or have knowledge of criminal activity occurring on college property, call the NSCC police department ("NSCC PD"). NSCC police department may be reached by dialing "3" from any campus telephone or by dialing 419-267-1452. The NSCC police department is located in Al91 in the atrium. Persons who wish to report crimes or other incidents at other college sites or from their homes should contact the police department of jurisdiction by calling 9-1-1. Incidents that occur off-campus or at a regional campus should be reported to local law enforcement by calling 9-1-1 or the nonemergency telephone number specific to that jurisdiction.

Filing a report of violation of this policy

The vice president of enrollment management & student affairs ("VPEMSA") serves as the recipient for any complaint or report of hazing. If the report involves criminal conduct, the VP EMS A shall notify law enforcement. If the report involves allegations of sexual misconduct, the provisions of NSCC policy 14-3-35 may also apply. In certain instances, the VPEMSA will notify other appropriate agencies, such as children's services.

Walk-in or mail:

Vice President of Enrollment Management & Student Affairs

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. Northwest State Community College shall maintain a drug and alcohol prevention plan.

Equal Opportunity and Non-Discrimination/Anti-Harassment

Policy Statement

Northwest State Community College is committed to maintaining a workplace and academic environment free of discrimination and harassment. Therefore, the college shall not tolerate discriminatory or harassing behavior by or against trustees, employees, vendors, customers, students or other persons participating in a college program or activity.

Employees and students are expected to assist in the college's efforts to prevent discrimination or harassment from occurring. Administrators, supervisors, and employees who have been designated to act on behalf of the college are specifically responsible for identifying and taking proper action to end such behavior.

While the college does not tolerate any form of discrimination or harassment, the Non-Discrimination/ Anti-Harassment Policy and related procedures are intended to cover discrimination and harassment based on a protected class. Protected classes for purposes of this policy are age, ancestry, color, disability, familial status (status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent), gender, gender identity or expression, genetic information (GNA), military or veteran status, national origin, race, religion, sex, and sexual orientation, or any other bases under the law. Through this and related policies, the College acknowledges and complies with its duties under Title VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, the Age Discrimination in Employment Act of 1967, the Age Discrimination Act of 1975, Sections 503 and 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, as amended, the Pregnancy Discrimination Act, and relevant state and local laws, by setting forth comprehensive frameworks for receiving, processing, investigating, and resolving complaints.

Anyone who is subjected to conduct that creates an intimidating or hostile environment, regardless if the conduct is based on a protected class, shall report the conduct to a person outlined in Section (E) of this policy. If Human Resources determines that the conduct alleged to be creating an intimidating or hostile environment is not based on a protected class, the report may be referred for remediation according to the relevant policy.

In furtherance of these expectation, employees must participate in required training.

Definitions of Discrimination/Harassment

1. **Discrimination** - occurs when an adverse employment action is taken and based upon a protected class. Discrimination may occur in several forms, such as:
    a. Disparate Treatment - when a person, or group of people are treated less favorably than another person or group of people on the basis of a protected class.
    b. Disparate Impact - when a college policy, practice or decision is based on neutral factors that have an adverse impact on a protected class.
2. **Harassment** - (1) Unwelcome, protected class-based physical non-verbal or verbal conduct that (2) is sufficiently severe, persistent or pervasive that (3) it unreasonably interferes with, denies, or limits an individual's ability to participate in or benefit from the university's education and employment programs and activities; and (4) is based on power differentials (quid pro quo) or the creation of a hostile environment. ***This definition does not include sexual harassment/misconduct, for policies related to those see Policy 3358:14-3-35.**
    a. Hostile Work Environment - occurs when the conduct at issue is sufficiently severe or pervasive that it creates an intimidating, abusive or offensive environment regarding employment or academic decisions for a person in a protected class. A single instance of discrimination may be sufficient to create a hostile work environment.

Consequences of Discrimination/Harassment

a. **Employees** - any employee found to be in violation of this policy will be subject to disciplinary action, up to and including termination of employment.
b. **Students** - any student found to be in violation of this policy will be subject to review and resolution in accordance with the Student Code of Conduct Policy 3358:14-5-08 and may be subject to disciplinary action in accordance therewith.

Reporting Responsibilities and Filing a Complaint

a. Anyone who believes that an administrator, any employee, supervisor, student, or non-employee's behavior constitutes discrimination or harassment has a responsibility to report the behavior/action as soon as it is known so that the college may administer this policy.
    i. Allegations can be made by individuals who are directly involved in, who observe, or who receive reliable information that discrimination/harassment may have occurred.
b. **Complaints Involving Employees:** In cases of alleged discrimination/harassment in employment or if the victim of alleged perpetrator is an employee, the complaint may be made to any of the following:
    i. the Title IX Coordinator or Deputy Title IX Coordinator;
    ii. an employee of Human Resources; or
    iii. an employee of the NSCC Police Department.
c. **Complaints Involving Students:** In cases of alleged discrimination/harassment when the victim and/or alleged perpetrator is a student, a potential student, or someone participating in a college-sponsored event or activity, the complaint may be made to any of the following, the complaint may be made to any of the following:

i. the Title IX Coordinator or Deputy Title IX Coordinator;
ii. the Vice President of Academics;
iii. an Academic Dean; or
iv. an employee of the NSCC Police Department.

d. Any person designated to receive complaints under this policy who has direct or constructive knowledge of alleged discriminatory or harassing behavior must immediately report behavior to the Office of Human Resources, Title IX Coordinator, Chief Student Affairs Officer or Deputy Title IX Coordinator. Failure to do so may result in disciplinary action, up to and including termination of employment.
e. **Emergency:** Any person seeking immediate assistance or relief from bodily danger or a threat should immediately contact the Northwest State Community College Policy Department at 419-267-1452 or by dialing 9-1-1.
f. Reporting Complaints made in good faith will not be held against an employee or student in any way.

Equal Opportunity

It is the established policy of Northwest state community college not to discriminate against any individual employee or student, groups of employees or students, or prospective employees or students for reasons of age, ancestry, color, disability, familial status (status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent), gender, gender identity or expression, genetic information (GNA), military or veteran status, national origin, race, religion, sex, and sexual orientation, or any other bases under the law. This college is fully committed to providing equal opportunities in all employment related activities, and educational programs, including, but not limited to, recruiting, hiring, advancement, demotion, layoff, compensation, training, benefits, transfers, tuition assistance, terms of employment, physical access to facilities, and social and recreational programs, within the financial resources of the college.

The college will promote equal opportunities to all employees, applicants for employment, students, and student applicants for admission to the college through a positive and continuing affirmative action program. Northwest state community college will fully comply with all federal, state, and local laws and regulations to guarantee equal opportunities. All contractors of this college will comply with existing federal and state regulations concerning equal employment opportunities and affirmative action. Concerns or complaints regarding equal employment opportunities and affirmative action should be filed with the human resource department of the college.

Free Speech Policy

This policy will apply to all College students, student groups, faculty, staff, and employees of Northwest State Community College, to the extent set forth in this policy in Ohio Revised Code Section 3345.0215.

Northwest State Community College believes that the right of free expression is as necessary as the right of inquiry and that both must be preserved as essential to the pursuit and dissemination of knowledge and truth.

Minors on Campus

Northwest State Community College (NSCC) seeks to promote the safety and welfare of minors on NSCC campus, including minors who participate in youth activities and programs on NSCC campus. This policy outlines what is required of faculty, staff, learners, and volunteers who interact with minors or work in youth activities and programs, including their reporting obligations in instances of known or suspected incidents of child abuse or neglect of minors. This policy applies to all minors, as defined, on college property, and any faculty, staff, learners, and volunteers who interact with minors while on campus.

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.

Sexual Misconduct Policy

Purpose of the Policy

Northwest State Community College is committed to maintaining an academic, work, and study environment where everyone is treated with dignity and respect and is free of sexual misconduct in any form. Sexual misconduct is a broad term that includes but is not limited to sexual harassment, sexual violence, inappropriate behavior that is of a sexual nature, or inappropriate behavior that is based on sex, and directed towards, by or against employees, students, vendors, customers, persons participating in a college program or activity.

Students and employees are expected to conduct themselves in a manner that maintains an environment free from sexual misconduct. All students and employees have a responsibility to be aware of this policy's contents, to abide by its terms, and to assist in its enforcement. This policy defines expectations for the college, its student, and its employees and establishes mechanisms for determining when those expectations have been violated.

Title IX Notice of Non-Discrimination

Title IX of the Education Amendments of 1972, and its implementing regulation at 43 C.F.R. Part 106 (Title IX) provides, "No individual in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance:'

Definitions - for a complete list of definitions refer to the full policy.

Scope

1. This policy applies to alleged sexual misconduct that takes place of College property or at college-sponsored activities, regardless of the location of the activity.
2. This policy may also apply to alleged sexual harassment or sexual misconduct that occurs off-campus, including virtual places, when the title IX Coordinator or Deputy Coordinator determines that the alleged off-campus conduct could reasonably create a hostile environment or a continuing adverse effect on campus.

Jurisdiction

1. The college has a compelling obligation to address allegations and suspected instances of sexual misconduct when it knows or should have known information that would lead a reasonable person to believe this policy

has been violated. The college may take appropriate action, including pursuing an investigation even in cases when the complainant is reluctant to proceed

2. The college's disciplinary response may be limited if the accused is a visitor or other third-party or is not subject to the college's jurisdiction.

Reporting Responsibilities and Filing a Formal Report

1. Anyone - especially all faculty, staff and administrators - who believes that employees, students, or non-employee's behavior constitutes sexual misconduct has a responsibility to report the behavior/action as soon as it is known so that the college may administer this policy.
2. In cases of alleged sexual misconduct where the victim or alleged perpetrator is an employee, the complaint may be made to any of the following:
    i. the Title IX Coordinator or Deputy Title IX Coordinator;
    ii. an employee of Human Resources; or
    iii. an employee of the NSCC Police Department.
3. In cases of alleged sexual misconduct where the victim and/or alleged perpetrator is a student, a potential student, or someone participating in a college-sponsored event or activity, the complaint may be made to any of the following, the complaint may be made to any of the following:
    i. the Title IX Coordinator or Deputy Title IX Coordinator;
    ii. the Vice President of Academics;
4. Any person designated to receive complaints under this policy who has direct or constructive knowledge of alleged discriminatory or harassing behavior must take immediate appropriate action to report the behavior to the Title IX Coordinator or Deputy Title IX Coordinator. Failure to do so may result in disciplinary action, up to and including termination of employment.
5. The college will promptly investigate all allegations of sexual misconduct, sexual harassment and sexual violence in accordance with the procedures set forth in 14-3-35 Sexual Misconduct procedures. The Title IX Coordinator is responsible for overseeing the investigation of complaints under this policy and monitoring/coordinating the response of other campus offices that may respond to complaints of sex-based offenses under this policy, including complaints of retaliation for filing a complaint on the basis of this policy. The College's Title IX Coordinator's contact information can be found in the Human Resource Office.
6. Any employee who knowingly or maliciously makes a false or frivolous allegation of sexual misconduct will be subject to college's applicable disciplinary policy and procedures.
7. Any student who knowingly or maliciously makes a false or frivolous allegation of sexual misconduct will be subject to the process outlined by the Student Code of Conduct Policy 14-5-08.

Consequences of Sexual Misconduct

1. For employees-Violations of this policy will result in disciplinary action, up to and including termination of employment. Further, employees may be subjected to interim measures in accordance with Sexual Misconduct Procedure 14-3-35 while complaints of violations are being investigated and until the matter is resolved.
2. For students- Sanctions for violating this policy may range from a earning to expulsion. Further, students may be subjected to interim measures in accordance with sexual Misconduct Procedure 14-3-35 while complaints of violations are being investigated and until the matter is resolved.

Prohibitions Against Consensual Sexual Relationship Misconduct

Consensual sexual relationships include romantic, intimate or sexual relationships which both parties agree to participate in the relationship. The college recognizes that consensual sexual relationships are generally not problematic, except when the relationship may compromise the integrity of the college, create the potential for the abuse of authority, or create the inability to remain impartial. Consensual sexual relationships may also create a third-party perception that a subordinate is receiving preferential treatment

1. Consensual sexual relationship misconduct among employees: the college strictly prohibits consensual relationships between administrators, supervisors, deans or chairpersons and the employees they supervise professionally advise, counsel, or employees over whom they have had direct impact on the employee's terms and conditions of employment.
2. Consensual sexual relationship misconduct with students:
    a. The college strictly prohibits consensual relationships between faculty members and the students or student employees enrolled in a class or class sequence(s) taught, advised, counseled, or supervised by the faculty member, or over whom the faculty member has direct impact on the student or student employee's academic enrollment or success.
    b. The college strictly prohibits consensual relationships between administrators, supervisors, deans, chairpersons or employees and the student or student employees whom they advise, counsel, or supervise, or over whom they have a direct impact on the student or student employee's academic enrollment or success.
    c. The college strongly discourages all employees or faculty members from engaging in consensual sexual relationships with students as long as the student is considered to be in an active status as a student, even if the students is not currently enrolled in a class.

Consequences of Sexual Misconduct

Employees and faculty members should refer to full policy.

Academic Freedom / First Amendment Guidelines

The college is committed to providing a safe, anti-harassing, and nondiscriminatory environment that protects the civil rights of individuals, per college policies and in compliance with state and federal law, and the college recognizes the value of academic freedom in the classroom.

College policies are not intended to restrict serious discussion of controversial issues in the academic classrooms or trainings. In light of this, to minimize the potential for multiple claims that course content in discriminatory, harassing or offensive, it is recommended that in courses where such discussions occur, faculty provide a disclosure that the content covered may be controversial. However, employees and students are encouraged to file complaints in accordance with this policy for reasons specified therein.

Confidentiality

To the extent possible, all information received in connection with the reporting, investigation, and resolution of allegations of discrimination/harassment, and/or sexual misconduct will be treated as confidential, except to the extent it is necessary to disclose information in order to investigate, take steps to stop, prevent or address the effects of the discrimination/harassment or misconduct, resolve the complaint or when compelled to do so by law. All individuals

involved in the process should observe the same standard of discretion and respect for the reputation of everyone involved in the process.

Retaliation

College policy and federal, state and local law strictly prohibit retaliation in any form against any employee, faculty member, student, vendor, customer, or other person participating in a college program or activity who complains or reports an allegation, or who participates in an investigation of discrimination/harassment or sexual misconduct.

Retaliation is a serious violation that can subject the offender to sanctions independent of the merits of the allegation. Allegations of retaliation should be directed to the Title IX Coordinator or Deputy Coordinator.

Religious Accommodations for Students

NSCC faculty are committed to fostering an environment of respect, understanding, and reasonability, including as it relates to learners' engagement in religious expression. As such, faculty shall provide reasonable religious accommodations to individual learners for sincerely head religious, spiritual, and/or faith- based beliefs and practices in accordance with section 3345.026 of the Ohio Revised Code.

Safeguarding Customer Information

In order to protect personal critical information and data, Northwest State Community College will comply with the Financial Services Modernization Act of 1999 (also known as Gramm Leach Bliley (GLB) 15 U.S.C. §6801).

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.

Student Code of 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. This may include dismissing a student from a particular course, workshop, or learning event. As a result of disruptive or detrimental behavior, a

student may be subject to additional discipline under this policy including, 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.

Prohibited conduct - 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.

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.

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.

Safeguarding Customer Information

In order to protect personal critical information and data, Northwest State Community College will comply with the Financial Services Modernization Act of 1999 (also known as Gramm Leach Bliley (GLB) 15 U.S.C. §6801).

Suicide Prevention Policy

This policy applies to Northwest State Community College staff, faculty, and learners and is in accordance with section 3345.37 of these Revised Code. Northwest State Community College is committed to raising awareness about mental health and suicide prevention across our campus community, including learners, faculty, and staff. In an effort to achieve this objective and foster the overall health, well-being, and safety of our campus community, our institution will regularly provide suicide prevention information, programming, and awareness, as well as educate campus members about suicide prevention/mental health resources and supports available on and off campus.

Transcript Disciplinary Notations

A notation to the learner's academic record (academic transcript) when a misconduct results in the dismissal from the College.

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.

Northwest State Core Requirements

- ENG 111 - Composition I **Min Credits: 3**

Natural Sciences

- BIO 100 - The World of Science **Min Credits: 3**
- BIO 101 - Principles of Biology **Min Credits: 4**
- BIO 115 - Ecology **Min Credits: 4**
- BIO 131 - Nutrition **Min Credits: 3**
- BIO 150 - The Human Body **Min Credits: 4**
- BIO 250 - Genetics **Min Credits: 4**
- BIO 201 - General Biology I **Min Credits: 4**
- BIO 202 - General Biology II **Min Credits: 4**
- BIO 231 - Anatomy & Physiology I **Min Credits: 4**
- BIO 232 - Anatomy & Physiology II **Min Credits: 4**
- BIO 257 - Microbiology **Min Credits: 4**
- CHM 100 - The World of Science **Min Credits: 3**
- CHM 101 - Principles of Chemistry **Min Credits: 4**
- CHM 110 - Environmental Chemistry **Min Credits: 4**
- CHM 201 - General Chemistry I **Min Credits: 5**
- CHM 202 - General Chemistry II **Min Credits: 5**
- CHM 256 - Principles of Biochemistry **Min Credits: 3**
- PHY 100 - The World of Science **Min Credits: 3**
- PHY 101 - Principles of Physical Science **Min Credits: 4**
- PHY 140 - Astronomy **Min Credits: 4**

- PHY 150 - Principles of Geology **Min Credits: 4**
- PHY 251 - Physics: Mechanics & Heat **Min Credits: 4**
- PHY 252 - Physics: Electricity & Magnetism **Min Credits: 4**

Humanities

- ENG 223 - Interpretation of Literature **Min Credits: 3**
- ENG 230 - Children's Literature **Min Credits: 3**
- ENG 240 - Introduction to Poetry **Min Credits: 3**
- ENG 241 - Introduction to Fiction **Min Credits: 3**
- ENG 250 - American Literature I **Min Credits: 3**
- ENG 251 - American Literature II **Min Credits: 3**
- ENG 260 - British Literature I **Min Credits: 3**
- ENG 261 - British Literature II **Min Credits: 3**
- HUM 210 - Humanities & Cultures: Renaissance to Present **Min Credits: 3**
- HUM 221 - Music Appreciation **Min Credits: 3**
- HUM 230 - Art Appreciation **Min Credits: 3**
- PHI 110 - Critical Thinking & Logic **Min Credits: 3**
- PHI 201 - Introduction to Philosophy **Min Credits: 3**
- PHI 210 - Ethics **Min Credits: 3**

Social/Behavioral Sciences

- HIS 101 - U.S. History Pre-1876 **Min Credits: 3**
- HIS 102 - U.S. History Post-1876 **Min Credits: 3**
- HIS 203 - U.S. Since 1945 **Min Credits: 3**
- HIS 210 - The Modern World **Min Credits: 3**
- PSY 110 - General Psychology **Min Credits: 3**
- PSY 210 - Abnormal Psychology **Min Credits: 3**
- PSY 220 - Social Psychology **Min Credits: 3**
- PSY 230 - Lifespan Development **Min Credits: 3**
- SSC 101 - Sociology **Min Credits: 3**
- SSC 120 - American Government **Min Credits: 3**
- SSC 130 - Comparative Government **Min Credits: 3**
- SSC 210 - Cultural Diversity **Min Credits: 3**

Mathematics and Data Analysis

- MTH 105 - Quantitative Reasoning **Min Credits: 4**
- MTH 109 - College Algebra **Min Credits: 3**
- MTH 112 - Trigonometry **Min Credits: 3**
- MTH 170 - Survey of Mathematics **Min Credits: 3**
- MTH 213 - Calculus I **Min Credits: 5**
- MTH 214 - Calculus II **Min Credits: 5**
- STA 120 - Introduction to Statistics **Min Credits: 3**

- STA 222 - Business Statistics **Min Credits: 3**

Skill Proficiency

One year certificate graduates: MTH 080 or MTH 085 proficiency is required. However, individual programs may require a higher mathematics competence. This requirement may be fulfilled by placement test, proficiency test, or by taking the course.

Arts and Sciences

Arts and Science 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) program 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 or AS 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 C100 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

See Northwest State Core Requirements page.

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
MTH085 Math Literacy
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, AA

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) program 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 or AS 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

Students will be able to:

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.

English and Composition:

2 Courses Required

- ENG 111 - Composition I ("C" or better required) **Min Credits: 3**
- ENG 112 - Composition II **Min Credits: 3**

Humanities:

15 Credit Hours Required

One Literature Course Required:

- ENG 223 - Interpretation of Literature **Min Credits: 3**
- ENG 240 - Introduction to Poetry **Min Credits: 3**
- ENG 241 - Introduction to Fiction **Min Credits: 3**
- ENG 250 - American Literature I **Min Credits: 3**
- ENG 251 - American Literature II **Min Credits: 3**
- ENG 260 - British Literature I **Min Credits: 3**
- ENG 261 - British Literature II **Min Credits: 3**

One Humanities Survey Required:

- HUM 209 - Humanities & Cultures: Ancient & Medieval Worlds **Min Credits: 3**
  - or
- HUM 210 - Humanities & Cultures: Renaissance to Present Min Credits: 3

No More than 6 Hours in the Applied Arts*

- ART 103 - Beginning Drawing **Min Credits: 3** *
- ART 210 - Oil/Acrylic Painting **Min Credits: 3** *
- ART 220 - Beginning Sculpture **Min Credits: 3** *
- ENG 217 - Introduction to Creative Writing **Min Credits: 3** *
- ENG 223 - Interpretation of Literature **Min Credits: 3**
- ENG 230 - Children's Literature **Min Credits: 3**
- ENG 240 - Introduction to Poetry **Min Credits: 3**
- ENG 241 - Introduction to Fiction **Min Credits: 3**
- ENG 250 - American Literature I **Min Credits: 3**
- ENG 251 - American Literature II **Min Credits: 3**
- ENG 260 - British Literature I **Min Credits: 3**
- ENG 261 - British Literature II **Min Credits: 3**
- HUM 209 - Humanities & Cultures: Ancient & Medieval Worlds **Min Credits: 3**
- HUM 210 - Humanities & Cultures: Renaissance to Present **Min Credits: 3**
- HUM 221 - Music Appreciation **Min Credits: 3**
- HUM 230 - Art Appreciation **Min Credits: 3**
- PHI 110 - Critical Thinking & Logic **Min Credits: 3**
- PHI 201 - Introduction to Philosophy **Min Credits: 3**
- PHI 210 - Ethics **Min Credits: 3**

Social/Behavioral Sciences:

15 Credit Hours Required

One Behavioral Science Course Required:

- PSY 110 - General Psychology **Min Credits: 3**

One Social Science Course Required:

- SSC 101 - Sociology **Min Credits: 3**
-

For remaining credits, choose from the following:

- ECO 211 - Macroeconomics **Min Credits: 3**
- ECO 212 - Microeconomics **Min Credits: 3**
- HIS 101 - U.S. History Pre-1876 **Min Credits: 3**
- HIS 102 - U.S. History Post-1876 **Min Credits: 3**
- HIS 203 - U.S. Since 1945 **Min Credits: 3**
- HIS 210 - The Modern World **Min Credits: 3**
- HST 210 - Human Services Methods **Min Credits: 6**
- HST 212 - Principles of Addiction **Min Credits: 3**
- HST 240 - Social Problems **Min Credits: 3**
- HST 242 - Marriage & Family **Min Credits: 3**
- PSY 210 - Abnormal Psychology **Min Credits: 3**
- PSY 220 - Social Psychology **Min Credits: 3**
- PSY 230 - Lifespan Development **Min Credits: 3**
- PSY 250 - Personality Psychology **Min Credits: 3**
- SSC 120 - American Government **Min Credits: 3**
- SSC 130 - Comparative Government **Min Credits: 3**
- SSC 210 - Cultural Diversity **Min Credits: 3**

Mathematics and Natural Science:

10 Credit Hours Required

- At least 1 course must be a lab course *
- Ohio Transfer 36 approved mathematics or statistics class **
- Please Note: BIO 100, CHM 100 and PHY 100 are the same course choose the disciplinary prefix of most interest to you

  - BIO 100 - The World of Science **Min Credits: 3**
  - BIO 101 - Principles of Biology **Min Credits: 4** *
  - BIO 115 - Ecology **Min Credits: 4** *
  - BIO 150 - The Human Body **Min Credits: 4**
  - BIO 250 - Genetics **Min Credits: 4** *
  - BIO 201 - General Biology I **Min Credits: 4** *
  - BIO 202 - General Biology II **Min Credits: 4** *
  - BIO 231 - Anatomy & Physiology I **Min Credits: 4** *
  - BIO 232 - Anatomy & Physiology II **Min Credits: 4** *
  - BIO 257 - Microbiology **Min Credits: 4** *
  - CHM 100 - The World of Science **Min Credits: 3**
  - CHM 101 - Principles of Chemistry **Min Credits: 4** *
  - CHM 110 - Environmental Chemistry **Min Credits: 4** *
  - CHM 138 - Principles of Forensics **Min Credits: 4**
  - CHM 201 - General Chemistry I **Min Credits: 5** *
  - CHM 202 - General Chemistry II **Min Credits: 5** *
  - CHM 256 - Principles of Biochemistry **Min Credits: 3** *
  - MTH 216 - Differential Equations **Min Credits: 4**
  - PHY 100 - The World of Science **Min Credits: 3**
  - PHY 101 - Principles of Physical Science **Min Credits: 4** *
  - PHY 140 - Astronomy **Min Credits: 4** *
  - PHY 150 - Principles of Geology **Min Credits: 4** *
  - PHY 251 - Physics: Mechanics & Heat **Min Credits: 4** *
  - PHY 252 - Physics: Electricity & Magnetism **Min Credits: 4** *
  - MTH 105 - Quantitative Reasoning **Min Credits: 4** **
  - MTH 109 - College Algebra **Min Credits: 3** **
  - MTH 112 - Trigonometry **Min Credits: 3** **
  - MTH 213 - Calculus I **Min Credits: 5** **
  - MTH 214 - Calculus II **Min Credits: 5** **
  - STA 120 - Introduction to Statistics **Min Credits: 3** **

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, AS

English and Composition:

2 Courses Required

- ENG 111 - Composition I (“C” or better required) **Min Credits: 3**
- ENG 112 - Composition II **Min Credits: 3**

Humanities:

12 Credit Hours Required

- One Literature Course Required:
  - ENG 223 - Interpretation of Literature **Min Credits: 3**
  - ENG 240 - Introduction to Poetry **Min Credits: 3**
  - ENG 241 - Introduction to Fiction **Min Credits: 3**
  - ENG 250 - American Literature I **Min Credits: 3**
  - ENG 251 - American Literature II **Min Credits: 3**
  - ENG 260 - British Literature I **Min Credits: 3**
  - ENG 261 - British Literature II **Min Credits: 3**

- One Humanities Survey Required:
  - HUM 209 - Humanities & Cultures: Ancient & Medieval Worlds **Min Credits: 3**

    or
  - HUM 210 - Humanities & Cultures: Renaissance to Present **Min Credits: 3**

No More than 6 Hours in the Applied Arts*

- ART 103 - Beginning Drawing **Min Credits: 3** *
- ART 210 - Oil/Acrylic Painting **Min Credits: 3** *
- ART 220 - Beginning Sculpture **Min Credits: 3** *
- ENG 217 - Introduction to Creative Writing **Min Credits: 3** *
- ENG 223 - Interpretation of Literature **Min Credits: 3**
- ENG 230 - Children's Literature **Min Credits: 3**
- ENG 240 - Introduction to Poetry **Min Credits: 3**
- ENG 241 - Introduction to Fiction **Min Credits: 3**
- ENG 250 - American Literature I **Min Credits: 3**
- ENG 251 - American Literature II **Min Credits: 3**
- ENG 260 - British Literature I **Min Credits: 3**
- ENG 261 - British Literature II **Min Credits: 3**
- HUM 209 - Humanities & Cultures: Ancient & Medieval Worlds **Min Credits: 3**
- HUM 210 - Humanities & Cultures: Renaissance to Present **Min Credits: 3**
- HUM 221 - Music Appreciation **Min Credits: 3**
- HUM 230 - Art Appreciation **Min Credits: 3**
- PHI110 - Critical Thinking and Logic **Min Credits: 3**
- PHI201 - Introduction to Philosophy **Min Credits: 3**
- PHI210 - Ethics **Min Credits: 3**

Social/Behavioral Sciences:

15 Credit Hours Required
One Behavioral Science Course Required:

- PSY 110 - General Psychology **Min Credits: 3**

One Social Science Course Required:

- SSC 101 - Sociology **Min Credits: 3**

For remaining credits, choose from the following:

- ECO 211 - Macroeconomics **Min Credits: 3**
- ECO 212 - Microeconomics **Min Credits: 3**
- HIS 101 - U.S. History Pre-1876 **Min Credits: 3**
- HIS 102 - U.S. History Post-1876 **Min Credits: 3**
- HIS 203 - U.S. Since 1945 **Min Credits: 3**
- HIS 210 - The Modern World **Min Credits: 3**
- HST 212 - Principles of Addiction **Min Credits: 3**
- HST 240 - Social Problems **Min Credits: 3**
- HST 242 - Marriage & Family **Min Credits: 3**
- PSY 210 - Abnormal Psychology **Min Credits: 3**
- PSY 220 - Social Psychology **Min Credits: 3**
- PSY 230 - Lifespan Development **Min Credits: 3**
- PSY 250 - Personality Psychology **Min Credits: 3**
- SSC 120 - American Government **Min Credits: 3**
- SSC 130 - Comparative Government **Min Credits: 3**
- SSC 210 - Cultural Diversity **Min Credits: 3**

Mathematics and Natural Science:

16 Credit Hours Required
At least 2 courses must be a lab course*

- BIO 100 - The World of Science **Min Credits: 3** *
- BIO 101 - Principles of Biology **Min Credits: 4** *
- BIO 115 - Ecology **Min Credits: 4** *
- BIO 150 - The Human Body **Min Credits: 4**
- BIO 250 - 6**Min Credits: 4** *
- BIO 201 - General Biology I **Min Credits: 4** *
- BIO 202 - General Biology II **Min Credits: 4** *
- BIO 231 - Anatomy & Physiology I **Min Credits: 4** *
- BIO 232 - Anatomy & Physiology II **Min Credits: 4** *
- BIO 257 - Microbiology **Min Credits: 4** *
- CHM 100 - The World of Science **Min Credits: 3**
- CHM 101 - Principles of Chemistry **Min Credits: 4** *
- CHM 110 - Environmental Chemistry **Min Credits: 4** *
- CHM 138 - Principles of Forensics **Min Credits: 4**
- CHM 202 - General Chemistry II **Min Credits: 5** *
- CHM 256 - Principles of Biochemistry **Min Credits: 3** *
- PHY 100 - The World of Science **Min Credits: 3**

- PHY 101 - Principles of Physical Science **Min Credits: 4** *
- PHY 140 - Astronomy **Min Credits: 4** *
- PHY 150 - Principles of Geology **Min Credits: 4** *
- PHY 251 - Physics: Mechanics & Heat **Min Credits: 4** *
- PHY 252 - Physics: Electricity & Magnetism **Min Credits: 4** *
- MTH 105 - Quantitative Reasoning **Min Credits: 4** **
- MTH 109 - College Algebra **Min Credits: 3** **
- MTH 112 - Trigonometry **Min Credits: 3** **
- MTH 213 - Calculus I **Min Credits: 5** **
- MTH 214 - Calculus II **Min Credits: 5** **
- STA 120 - Introduction to Statistics **Min Credits: 3** **
- MTH 216 - Differential Equations **Min Credits: 4**

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.

Ohio Transfer 36

The NSCC Ohio Transfer 36 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 Ohio Transfer 36:

1. Choose courses to fulfill the minimum requirements in each section below, according to the guidelines provided.
2. Complete the remaining hours of the Ohio Transfer 36 by selecting additional courses listed in any of the sections to total the 40 semester hours required for the Ohio Transfer 36. 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 Ohio Transfer 36.

English/Oral Communication:

Select a minimum of 1 course from the following list:

- ENG 111 - Composition I **Min Credits: 3** (required)
- ENG 112 - Composition II **Min Credits: 3**
- ENG 113 - Speech **Min Credits: 3**

Mathematics Electives:

Select a minimum of 1 course from the following list:

- MTH 105 - Quantitative Reasoning **Min Credits: 4**
- MTH 109 - College Algebra **Min Credits: 3**
- MTH 112 - Trigonometry **Min Credits: 3**
- MTH 213 - Calculus I **Min Credits: 5**
- MTH 214 - Calculus II **Min Credits: 5**
- STA 120 - Introduction to Statistics **Min Credits: 3**
- MTH 216 - Differential Equations **Min Credits: 4**

Arts & Humanities:

Select a minimum of 6 hours from 2 disciplines from the following list:

- ENG 223 - Interpretation of Literature **Min Credits: 3**
- ENG 230 - Children's Literature **Min Credits: 3**
- ENG 240 - Introduction to Poetry **Min Credits: 3**
- ENG 241 - Introduction to Fiction **Min Credits: 3**
- ENG 250 - American Literature I **Min Credits: 3**
- ENG 251 - American Literature II **Min Credits: 3**
- ENG 260 - British Literature I **Min Credits: 3**
- ENG 261 - British Literature II **Min Credits: 3**
- HUM 209 - Humanities & Cultures: Ancient & Medieval Worlds **Min Credits: 3**
- HUM 210 - Humanities & Cultures: Renaissance to Present **Min Credits: 3**

- HUM 221 - Music Appreciation **Min Credits: 3**
- HUM 230 - Art Appreciation **Min Credits: 3**
- PHI 110 - Critical Thinking & Logic **Min Credits: 3**
- PHI 201 - Introduction to Philosophy **Min Credits: 3**
- PHI 210 - Ethics **Min Credits: 3**

Social/Behavioral Sciences:

Select a minimum of 6 hours from 2 disciplines on the following list:

- ECO 211 - Macroeconomics **Min Credits: 3**
- ECO 212 - Microeconomics **Min Credits: 3**
- HIS 101 - U.S. History Pre-1876 **Min Credits: 3**
- HIS 102 - U.S. History Post-1876 **Min Credits: 3**
- HIS 203 - U.S. Since 1945 **Min Credits: 3**
- HIS 210 - The Modern World **Min Credits: 3**
- HST 240 - Social Problems **Min Credits: 3**
- HST 242 - Marriage & Family **Min Credits: 3**
- PSY 110 - General Psychology **Min Credits: 3**
- PSY 210 - Abnormal Psychology **Min Credits: 3**
- PSY 220 - Social Psychology **Min Credits: 3**
- PSY 230 - Lifespan Development **Min Credits: 3**
- SSC 101 - Sociology **Min Credits: 3**
- SSC 120 - American Government **Min Credits: 3**
- SSC 130 - Comparative Government **Min Credits: 3**
- SSC 210 - Cultural Diversity **Min Credits: 3**

Natural and Physical Sciences:

Select a minimum of 6 hours, 1 lab from the following list:

* Denotes a lab course

- BIO 101 - Principles of Biology **Min Credits: 4** *
- BIO 115 - Ecology **Min Credits: 4** *
- BIO 150 - The Human Body **Min Credits: 4** *
- BIO 250 - Genetics **Min Credits: 4** *
- BIO 201 - General Biology I **Min Credits: 4** *
- BIO 202 - General Biology II **Min Credits: 4** *
- BIO 231 - Anatomy & Physiology I **Min Credits: 4** *
- BIO 232 - Anatomy & Physiology II **Min Credits: 4** *
- BIO 257 - Microbiology **Min Credits: 4** *
- CHM 101 - Principles of Chemistry **Min Credits: 4** *
- CHM 110 - Environmental Chemistry **Min Credits: 4**
- CHM 201 - General Chemistry I **Min Credits: 5** *
- CHM 202 - General Chemistry II **Min Credits: 5** *
- CHM 256 - Principles of Biochemistry **Min Credits: 3** *
- PHY 101 - Principles of Physical Science **Min Credits: 4** *

- PHY 140 - Astronomy **Min Credits: 4** *
- PHY 150 - Principles of Geology **Min Credits: 4** *
- PHY 251 - Physics: Mechanics & Heat **Min Credits: 4** *
- PHY 252 - Physics: Electricity & Magnetism **Min Credits: 4** *

Associate of Individualized Studies, AIS

You've spent your life learning. Now earn credit for it at NSCC!

The Associate of Individualized Study (AIS) and Associate of Technical Studies are appropriate degrees for those students who may have earned credit hours or life experiences that are credit earned such as:

- Workforce or Military Experience
- Professional Licenses and Certification
- Prior Educational Experience/Credits

These degrees combine the existing educational disciplines at the college with a student's educational history, college credits, and experience to create an area of concentration that best serves the need of the student, especially in connection with career or job objectives.

NSCC advisors will work to combine these credits with NSCC classes to create an individualized degree.

For more information on how to get started at NSCC, contact the Admissions Office at 419.267.1320 or admissions@NorthwestState.edu.

The Associate of Individualized Studies (AIS) 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

- ENG 111 - Composition I **Min Credits: 3**
- ENG 112 - Composition II **Min Credits: 3**

Humanities

15 credit hours required

- At least 3 hours - (other than ENG 230) - 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 MTH 090 - Intermediate Algebra level
- STA 120 - Introduction to Statistics Min Credits: 3
- 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 the100 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-yearcollege 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.
- Maximum of 15 semester credit hours can be earned through portfolio assessment.

Associate of Technical Studies, ATS

You've spent your life learning. Now earn credit for it at NSCC!

The Associate of Individualized Study (AIS) and Associate of Technical Studies are appropriate degrees for those students who may have earned credit hours or life experiences that are credit earned such as:

- Workforce or Military Experience
- Professional Licenses and Certification
- Prior Educational Experience/Credits

These degrees combine the existing educational disciplines at the college with a student's educational history, college credits, and experience to create an area of concentration that best serves the need of the student, especially in connection with career or job objectives.

NSCC advisors will work to combine these credits with NSCC classes to create an individualized degree.

For more information on how to get started at NSCC, contact the Admissions Office at 419.267.1320 or admissions@NorthwestState.edu.

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 Registrar’s Office.
2. At least five courses in NSCC General Education Core Courses:
    - Composition I **Min Credits: 3**
    - Humanities Elective **Min Credits: 3**
    - Math and Data Analysis Elective **Min Credits: 3**

    - Science Elective **Min Credits: 3**
    - Social Behavioral Science **Min Credits: 3**
3. Minimum of fifteen 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.

Visual Communication Graphic Design, AAB

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.

First Semester

- ART 103 - Beginning Drawing **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- ENG 111 - Composition I **Min Credits: 3**
- VCT 103 - Introduction to Visual Communication **Min Credits: 3** +
- CIS 129 - Web Page Development **Min Credits: 3** +

Total Credits: 15

Second Semester

- ENG 112 - Composition II **Min Credits: 3**
- ENG 113 - Speech **Min Credits: 3**
- VCT 111 - Layout & Design **Min Credits: 3** +
- VCT 266 - Multimedia Production **Min Credits: 3** +
- MTH 105 - Quantitative Reasoning **Min Credits: 4**
  or
- STA 120 - Introduction to Statistics **Min Credits: 3**

Total Credits: 15-16

Third Semester

- HUM 230 - Art Appreciation **Min Credits: 3**
- VCT 120 - Vector Graphics **Min Credits: 3** +
- VCT 261 - 3D Computer Modeling **Min Credits: 3** +
- VCT 182 - Photography **Min Credits: 3** +
- ELECTIVE Natural Science Elective **Min Credits: 3-4** *

Total Credits: 15-16

Fourth Semester

- ACC 111 - Financial Accounting **Min Credits: 3**
- VCT 204 - Concepts of Visual Communication **Min Credits: 3** +
- VCT 268 - Video Production **Min Credits: 3** +
- ELECTIVE Program Elective **Min Credits: 3** ^
- ELECTIVE Social Behavioral Science Elective **Min Credits: 3** *

Total Credits: 15

Total Program Credit Hours 60-62

* See Northwest State Core Requirements for a list of Natural Science and Social Behavioral Science Electives.

^ Program Electives:

- BUS 221 - Business Law **Min Credits: 3**
- ENG 217 - Introduction to Creative Writing **Min Credits: 3**
- MGT 221 - Entrepreneurship II **Min Credits: 3**
- VCT 210 - Essentials of Social Media **Min Credits: 3**
- VCT 289 - VCT Co-Op Experience **Min Credits: 3**

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

Business & Public Services

Business and Public Services Division

The division of Business and Public Services offers a variety of majors in the fields of accounting, business management, criminal justice, early childhood education, human services, health care, and marketing. 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 Business and Public Services Division include:

Associate of Applied Business Degrees
- Accounting
- Business Management

Associate of Applied Business in Business Management Degrees
- Banking and Finance
- Entrepreneurship
- Human Resource Management
- Logistics and Supply Chain Management
- Marketing

Associate of Applied Business in Office Administrative Services Degrees
- Medical Support
- Office Administration
- Office Management

Associate of Applied Science Degrees
- Agribusiness
- Agronomy
- Human Services
- Paraprofessional Education

Associate of Applied Science Criminal Justice Degrees
- Criminal Justice
- Law Enforcement – Academy Option

Associate of Applied Science in Early Childhood Development Degree
- Pre-Kindergarten

Certificate Programs
- Accounting Assistant
- Entrepreneurship
- Logistics and Supply Chain Management
- Marketing
- Office Assistant
- Real Estate

Short-Term Technical Certificate Programs
- Law Enforcement Academy
- Medical Coding & Billing Specialist

Course Sequence
The suggested sequence of course(s) is 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. Courses are generally offered in the semester they appear on the program 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 C100 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
See Northwest State Core Requirements for a list of Humanities and Natural Science. The 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

Disclosure for Business & Public Services Students
Students pursuing a degree in one of the Business or Public Services professions leading to application for professional licensure or certification, and/or who will be participating in clinical placements, internships, or practicum 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

- 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/ • Ohio Department of Corrections www.drc.ohio.gov
- Ohio Peace Officer Training Commission www.ohioattorneygeneral.gov/opotc

Accounting, AAB

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.

First Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- ACC 120 - Payroll Accounting **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- ELECTIVE Mathematics Elective **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**

Total Credits: 15

Second Semester

- ACC 112 - Managerial Accounting **Min Credits: 3** +
- ACC 140 - Individual Income Tax Accounting **Min Credits: 3** +
- CIS 113 - Microsoft Excel **Min Credits: 3**
- ACC 260 - Accounting on Computers **Min Credits: 3** +
- ENG 112 - Composition II **Min Credits: 3**

Total Credits: 15

Third Semester

- ACC 211 - Intermediate Accounting I **Min Credits: 3** +
- ACC 221 - Cost Accounting I **Min Credits: 3** +
- ACC 240 - Business Income Tax Accounting **Min Credits: 3** +
- ELECTIVE Business Elective **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3**

Total Credits: 15

Fourth Semester

- ACC 212 - Intermediate Accounting II **Min Credits: 3** +
- ACC 222 - Cost Accounting II **Min Credits: 3** +
- ACC 230 - Auditing **Min Credits: 3** +
- BUS 221 - Business Law **Min Credits: 3**
- ELECTIVE Natural Science Elective **Min Credits: 3** *
- ELECTIVE Social Behavioral Science Elective **Min Credits: 3** *

Total Credits: 18

Total Program Credit Hours 63

Mathematics Electives:

MTH105 Quantitative Reasoning
MTH109 College Algebra
STA120 Introduction to Statistics

Business Electives:

ACC291 Accounting Internship

BUS211 Business Communications
BUS250 Labor Relations
ECO211 Macroeconomics
ECO212 Microeconomics
MGT110 Management
MGT120 Supervision
MGT210 Human Resource Management

* See Northwest State Core Requirements for Natural Science, Humanities and Social Behavioral Science Electives.

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

Agribusiness, AAS

This Associate of Applied Science in Agribusiness degree prepares graduates for a broad spectrum of opportunities within agribusiness throughout the supply chain of any number of agriculturally related career fields.

The core of the program is a solid business foundation offered within the Business Division coupled with specific agriculture industry opportunities in the region.

Career Outlook

Graduates will be prepared for a variety of entry level positions in the agricultural sector, such as agricultural lending, agriculture sales, farm and ranch management, and greenhouse management.

The future of agriculture business is technology driven, requiring graduates to be able to analyze, integrate and act on data. Agricultural leaders and managers require a strong business acumen and an ability to incorporate advanced technologies, while still maintaining a focus on an industry that demands sustainability.

Program Learning Outcomes

Students will be able to:

1. Explain the legal and ethical environment impacting agriculture.
2. Apply economic principles and management theory to agricultural enterprises.
3. Apply managerial decision-making skills to agribusiness financial statements and records.
4. Evaluate the ability of an agriculture business to be financially viable and sustainable.
5. Explain the structure, components and functions of the United States' agricultural marketing system.
6. Explain global agricultural markets and the effect on local agriculture economies.
7. Analyze policies and the regulatory environment in which agricultural industries operate.
8. Apply basic knowledge of agribusiness industries and production practices in a practicum setting.

Three classes are required from one of the below sequences

Agronomic Sequence Option 1

- AGR 130 - Fundamentals of Soil Science **Min Credits: 4** +
- AGR 230 - Nutrient Management Principles **Min Credits: 3** +
- AGR 240 - Integrated Pest Management **Min Credits: 3** +

General Agriculture Sequence Option 2

- AGR 101 - Survey of Animal Agriculture **Min Credits: 3** +
- AGR 120 - Introduction to Precision Agriculture **Min Credits: 3** +
- AGR 140 - Introduction to Horticulture **Min Credits: 3** +

First Semester

- AGR 110 - Agronomy Principles **Min Credits: 3** +

- CHM 101 - Principles of Chemistry **Min Credits: 4**
  or
- BIO 101 - Principles of Biology **Min Credits: 4**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- ECO 212 - Microeconomics **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**

Total Credits: 16

Second Semester

- ACC 111 - Financial Accounting **Min Credits: 3**
- Agriculture Sequence Option 1 or 2 **Min Credits: 3-4** +
- CIS 113 - Microsoft Excel **Min Credits: 3**
- MKT 110 - Marketing **Min Credits: 3** +
- ELECTIVE Social/Behavioral Elective **Min Credits: 3** *

Total Credits: 15-16

Summer Semester

- AGR 290 - Agriculture Practicum **Min Credits: 2** +

Third Semester

- ACC 112 - Managerial Accounting **Min Credits: 3**
- ACC 260 - Accounting on Computers **Min Credits: 3**
- Agriculture Sequence Option 1 or 2 **Min Credits: 3** ** +
- AGR 215 - Introduction to Agricultural Economics & Agribusiness Management **Min Credits: 3** +
- BUS 211 - Business Communications **Min Credits: 3** +

Total Credits: 15

Fourth Semester

- Agriculture Sequence Option 1 or 2** **Min Credits: 3** +
- AGR 225 - Agricultural Analysis & Decision Making **Min Credits: 3** +
- BUS 221 - Business Law **Min Credits: 3** +
- ELECTIVE Humanities Elective **Min Credits: 3**
- ELECTIVE Mathematics Elective **Min Credits: 3**

Total Credits: 15

Total Program Credit Hours 63-65

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

Agronomy, AAS

The Associate of Applied Science - Agronomy program is a degree that is designed for the students whose desired career pathway is in agronomy and related fields. The program stresses basic sciences and practical, but innovative/technological approaches to the field of agronomy. Course work spans biologic, chemical, and physical sciences and emphasizes a holistic approach to understanding modern agronomy. This pathway provides students an applied science program that prepares the graduate for careers in agronomically related positions such as crop consultant, soil technician, and other related technical positions.

Career Outlook

Agriculture plays a vital role in the growth of the U.S. economy, Ohio, and Northwest Ohio. In the six-county service region, comprised of 1.6 million acres of land, over 82% of those acres are in production agriculture. According to the Bureau of Labor Statistics, employment of agricultural and food science technicians is projected to grow 6% from 2016 to 2026, about as fast as the average for all occupations. Agricultural and food science technicians will be needed to assist scientists as research into agricultural production methods and techniques continues. Additionally, farmers and ranch managers in NW Ohio is an in-demand occupation as described in the Ohio Means Jobs employment projections.

Program Learning Outcomes

Students will be able to:

1. Apply agronomic principles to support environmental sustainability or soil, water and air resources.
2. Apply modern agronomic practices, technology and research to solve complex problems in soils, watersheds and crops.
3. Employ scientific methodologies within the disciplines of biology, chemistry and ecology to determine sustainable agronomic practices.
4. Explain the impact of meteorological phenomena and climatic systems in agronomic systems.
5. Analyze an agronomic system to develop a basic farm nutrient management plan.
6. Explain the social, cultural and economic impacts of agronomy and its use of natural resources.
7. Explain the impact of agronomic pests of agribusiness, the economy, and the environment.
8. Apply integrated pest management methodologies to agronomic systems.

Three classes are required from one of the below sequences.

First Semester

- AGR 110 - Agronomy Principles **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- CHM 101 - Principles of Chemistry **Min Credits: 4**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3 ***

Total Credits: 16

Second Semester

- BIO 115 - Ecology **Min Credits: 4** +
- AGR 120 - Introduction to Precision Agriculture **Min Credits: 3** +
- AGR 220 - Agricultural Meteorology & Climate **Min Credits: 3** +
- MTH 109 - College Algebra **Min Credits: 3**
- ELECTIVE Social Science Elective **Min Credits: 3 ***

Total Credits: 16

Third Semester

- AGR 290 - Agriculture Practicum **Min Credits: 2- 4**

Fourth Semester

- BIO 201 - General Biology I **Min Credits: 4**
- BUS 101 - Introduction to Business **Min Credits: 3** +
- AGR 130 - Fundamentals of Soil Science **Min Credits: 4** +
- AGR 240 - Integrated Pest Management **Min Credits: 3** +

Total Credits: 14

Fifth Semester

- BIO 202 - General Biology II **Min Credits: 4**
- ECO 212 - Microeconomics **Min Credits: 3**
- AGR 210 - Sustainable Agronomy **Min Credits: 3** +
- AGR 230 - Nutrient Management Principles **Min Credits: 3** +

Total Credits: 13

Total Program Credit Hours 61-63

* See Northwest State Core Requirements for Humanities and Social Behavioral Science Electives.

Banking & Finance, AABBUS

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.

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. Explain the major styles of management.
2. Apply appropriate comprehension of business ethics.
3. Exhibit personal skills of business etiquette.
4. Evaluate effective comprehension of banking practices.
5. Differentiate between commercial and consumer banking.
6. Describe the sequence of procedures necessary to close a real estate loan.
7. Explain the relationship between taxes and cash flows.
8. Describe personal selling and its unique characteristics as a marketing communications tool.

First Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- BUS 101 - Introduction to Business **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- ENG 111 - Composition I **Min Credits: 3**
- ELECTIVE Mathematics Elective **Min Credits: 3**

Total Credits: 15

Second Semester

- ACC 112 - Managerial Accounting **Min Credits: 3** +
- BAN 110 - Bank Management **Min Credits: 3** +

- ECO 212 - Microeconomics **Min Credits: 3**
- CIS 113 - Microsoft Excel **Min Credits: 3**
- MKT 110 - Marketing **Min Credits: 3** +

Total Credits: 15

Third Semester

- ACC 240 - Business Income Tax Accounting **Min Credits: 3** +
- BAN 210 - Credit Management **Min Credits: 3** +
- BUS 221 - Business Law **Min Credits: 3** +
- MKT 230 - Professional Selling **Min Credits: 3**
- ELECTIVE Social/Behavioral Science Elective **Min Credits: 3** *

Total Credits: 15

Fourth Semester

- BAN 220 - Investment Management **Min Credits: 3** +
- BUS 211 - Business Communications **Min Credits: 3** +
- REA 230 - Real Estate Finance **Min Credits: 3** +
- ELECTIVE Humanities Elective **Min Credits: 3** *
- ELECTIVE Natural Science Elective **Min Credits: 3-4** *

Total Credits: 15-16

Total Program Credit Hours 60-61

* See Northwest State Core Requirements for Mathematics, 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, AABBUS

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, accounting, marketing, sales, 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. This program can be obtained completely on line or face-to-face.

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, positions are expected to have average growth, but will vary by industry. Companies, 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.

First Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- BUS 101 - Introduction to Business **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- ECO 212 - Microeconomics **Min Credits: 3**
- ENG 111 - Composition I **Min Credits: 3**

Total Credits: 15

Second Semester

- ACC 112 - Managerial Accounting **Min Credits: 3** +
- MGT 110 - Management **Min Credits: 3** +
- MKT 110 - Marketing **Min Credits: 3** +
- ELECTIVE Mathematics Elective **Min Credits: 3**
- ELECTIVE Social Behavioral Science Elective **Min Credits: 3** *

Total Credits: 15

Third Semester

- BUS 221 - Business Law **Min Credits: 3** +
- CIS 113 - Microsoft Excel **Min Credits: 3** +
- MGT 210 - Human Resource Management **Min Credits: 3** +
- ELECTIVE Business Technical Elective I **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3** *

Total Credits: 15

Fourth Semester

- BUS 211 - Business Communications **Min Credits: 3**
- ELECTIVE Business Technical Elective II **Min Credits: 3**
- ELECTIVE Business Technical Elective III **Min Credits: 3**
- MGT 270 Strategic Management **Min Credits: 3** +
- ELECTIVE Natural Science Elective **Min Credits: 3-4** *

Total Credits: 15-16

Total Program Credit Hours 60-61

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

* See Northwest State Core Requirements for Natural Science, Humanities and Social Behavioral Science Electives.

Mathematics Electives:

- MTH 105 - Quantitative Reasoning **Min Credits: 4**
- MTH 109 - College Algebra **Min Credits: 3**

Business Technical Electives I:

- MKT 230 - Professional Selling **Min Credits: 3**
- MGT 230 - Retail Management **Min Credits: 3**

Business Technical Electives II:

- ACC 221 - Cost Accounting I **Min Credits: 3**
- ACC 260 - Accounting on Computers **Min Credits: 3**

Business Technical Electives III:

- MGT 121 - Entrepreneurship I & Small Business Management **Min Credits: 3**
- CET 115 - Project Management **Min Credits: 3**

Entrepreneurship, AABBUS

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 affect changes necessary for 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. This program also focuses on developing an entrepreneurial mindset through informal learning using the Ice House. Entrepreneurial Program coupled with Who Owns the Ice House, Eight Life Lessons of an Unlikely Entrepreneur Companion text. This program can be obtained completely online or face-to-face.

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.

First Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- BUS 101 - Introduction to Business **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- ENG 111 - Composition I **Min Credits: 3**
- MKT 115 - Digital Marketing **Min Credits: 3**

Total Credits: 15

Second Semester

- ACC 260 - Accounting on Computers **Min Credits: 3** +
- ECO 212 - Microeconomics **Min Credits: 3**
- MKT 110 - Marketing **Min Credits: 3** +
- MGT 210 - Human Resource Management **Min Credits: 3** +
- MGT 110 - Management **Min Credits: 3**

Total Credits: 15

Third Semester

- ACC 112 - Managerial Accounting **Min Credits: 3** +
- MGT 121 - Entrepreneurship I & Small Business Management **Min Credits: 3** +
- ELECTIVE Social Behavioral Science Elective **Min Credits: 3** *
- ELECTIVE Mathematics Elective **Min Credits: 3**
- ELECTIVE Computer Elective **Min Credits: 3**

Total Credits: 15

Fourth Semester

- BUS 211 - Business Communications **Min Credits: 3** +
- BUS 221 - Business Law **Min Credits: 3** +
- MGT 221 - Entrepreneurship II **Min Credits: 3** +
- MGT 230 - Retail Management **Min Credits: 3** +
- ELECTIVE Humanities Elective **Min Credits: 3** *
- ELECTIVE Natural Science Elective **Min Credits: 3-4** *

Total Credits: 18-19

Total Program Credit Hours 63-64

* See Northwest State Core Requirements for Mathematics, 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, AABBUS

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. This program can be obtained completely on line or face-to-face.

Career Outlook

Employment of human resource managers is projected to grow 9 percent from 2016 to 2026, about as fast as the average for all occupations. As new companies form and organizations expand their operations, they will need human resource managers to oversee and administer their programs and to ensure that firms adhere to changing and complex employment laws. Strong competition can be expected for most positions.

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.

First Semester

- BUS 101 - Introduction to Business **Min Credits: 3**
- ECO 212 - Microeconomics **Min Credits: 3**
- ENG 111 - Composition I **Min Credits: 3**
- MGT 110 - Management **Min Credits: 3** +
- ELECTIVE Mathematics Elective **Min Credits: 3**

Total Credits: 15

Second Semester

- CIS 114 - Microsoft Applications **Min Credits: 3**
- ECO 211 - Macroeconomics **Min Credits: 3**
- ENG 112 - Composition II **Min Credits: 3**
- MGT 120 - Supervision **Min Credits: 3** +

- MGT 210 - Human Resource Management **Min Credits: 3** +

Total Credits: 15

Third Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- ACC 120 - Payroll Accounting **Min Credits: 3** +
- BUS 221 - Business Law **Min Credits: 3** +
- CIS 113 - Microsoft Excel **Min Credits: 3**
- ELECTIVE Natural Science Elective **Min Credits: 3** *
- ELECTIVE Social Behavioral Science Elective **Min Credits: 3** *

Total Credits: 18

Fourth Semester

- ACC 112 - Managerial Accounting **Min Credits: 3** +
- BUS 221 - Business Law **Min Credits: 3** +
- BUS 223 - Employment Law, Safety, & Security **Min Credits: 3** +
- BUS 250 - Labor Relations **Min Credits: 3** +
- ELECTIVE Humanities Elective **Min Credits: 3** *

Total Credits: 15

Total Program Credit Hours 63

* See Northwest State Core Requirements for Mathematics, Natural Science, Humanities and Social Behavioral Science Electives.

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

Logistics & Supply Chain Management, AABBUS

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 of logisticians is projected to grow 7 percent from 2016 to 2026, about as fast as the average for all occupations. Employment growth will be driven by the need for logistics in the transportation of goods in a global economy.

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. Devise best practices in supply chain management.
5. Differentiate between make the stock and make the order strategies.
6. Formulate methods to manage inventory efficiently and pool inventory risks across time, products, channels, and geography.
7. Construct position the push-pull boundary to leverage economies of scale and economies of scope.

First Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- BUS 101 - Introduction to Business **Min Credits: 3**
- SCM 220 - Operations Management **Min Credits: 3** +

Total Credits: 15

Second Semester

- ACC 112 - Managerial Accounting **Min Credits: 3** +
- STA 120 - Introduction to Statistics **Min Credits: 3**
- SCM 200 - Supply Chain Management **Min Credits: 3** +
- SCM 230 - Physical Distribution & Logistics **Min Credits: 3** +
- CIS 113 - Microsoft Excel **Min Credits: 3**
- CIS 118 - Access **Min Credits: 1**

Total Credits: 16

Third Semester

- MKT 110 - Marketing **Min Credits: 3** +
- SCM 210 - Purchasing & Materials Management **Min Credits: 3** +
- MGT 110 - Management **Min Credits: 3** +
- ECO 212 - Microeconomics **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3**

Total Credits: 15

Fourth Semester

- BUS 221 - Business Law **Min Credits: 3** +
- MGT 120 - Supervision **Min Credits: 3**
- BUS 211 - Business Communications **Min Credits: 3** +
- ELECTIVE Natural Science Elective **Min Credits: 3** *
- ELECTIVE Social Behavioral Science Elective **Min Credits: 3** *

Total Credits: 15

Total Program Credit Hours 61

* See Northwest State Core Requirements for Natural Science, Humanities and Social Behavioral Science Electives.

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

Marketing, AABBUS

Graduates of the marketing degree are skilled in marketing, small business management, sales, retailing 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. Learning opportunities have been added in Marketing Research and Social Media. This program can be obtained completely on line or face-to-face.

Career Outlook

Employment in marketing and retail, both nationally and in the state of Ohio, is expected to grow. 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.

First Semester

- BUS 101 - Introduction to Business **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- ECO 212 - Microeconomics **Min Credits: 3**
- ENG 111 - Composition I **Min Credits: 3**
- MKT 115 - Digital Marketing **Min Credits: 3**

Total Credits: 15

Second Semester

- BUS 211 - Business Communications **Min Credits: 3** +
- ECO 211 - Macroeconomics **Min Credits: 3**
- MGT 120 - Supervision **Min Credits: 3** +
- MKT 110 - Marketing **Min Credits: 3** +
- MKT 230 - Professional Selling **Min Credits: 3** +

Total Credits: 15

Third Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- CIS 113 - Microsoft Excel **Min Credits: 3** +
- MKT 210 - Advertising **Min Credits: 3** +
- STA 120 - Introduction to Statistics **Min Credits: 3**
- ELECTIVE Social Behavioral Science Elective **Min Credits: 3** *

Total Credits: 15

Fourth Semester

- ACC 112 - Managerial Accounting **Min Credits: 3** +
- BUS 221 - Business Law **Min Credits: 3** +
- MKT 225 - Marketing Research **Min Credits: 3** +
- MGT 230 - Retail Management **Min Credits: 3** +
- ELECTIVE Humanities Elective **Min Credits: 3** *
- ELECTIVE Natural Science Elective **Min Credits: 3** *

Total Credits: 18

Total Program Credit Hours 63

* See Northwest State Core Requirements 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 Support, AABOAS

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 for insurance claims and payments.
8. Determine accurate codes for medical billing procedures.

First Semester

- CIS 104 - Desktop Management **Min Credits: 1** *
- CIS 112 - Microsoft Word **Min Credits: 3** + *
- BIO 150 - The Human Body **Min Credits: 4**
- ENG 111 - Composition I **Min Credits: 3**
- OAS 101 - Business Document Formatting/Skillbuilding **Min Credits: 3** *
- OAS 180 - Medical Terminology **Min Credits: 3** +

Total Credits: 17

Second Semester

- ENG 112 - Composition II **Min Credits: 3**
- OAS 102 - Advanced Business Document Formatting/Skillbuilding **Min Credits: 3** +
- OAS 105 - Document Editing & Proofreading **Min Credits: 2** +
- OAS 160 - Administrative Technology & Procedures **Min Credits: 3** +
- OAS 227 - Diagnostic Coding **Min Credits: 3**

Total Credits: 14

Third Semester

- OAS 103 - Office Accounting **Min Credits: 3**
- OAS 111 - Electronic Health Records **Min Credits: 3** +
- OAS 200 - Speedbuilding **Min Credits: 1** +
- MEA 108 - Administrative Medical Office **Min Credits: 3**
- OAS 228 - Procedural Coding **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3**

Total Credits: 16

Fourth Semester

- CIS 113 - Microsoft Excel **Min Credits: 3** *
- MEA 110 - Pharmacology for a Allied Health Professional **Min Credits: 3**
- OAS 283 - Computerized Medical Insurance **Min Credits: 3**
- OAS 291 - Internship I **Min Credits: 1** +
- PSY 110 - General Psychology **Min Credits: 3**
- ELECTIVE Mathematics Elective **Min Credits: 3**

Total Credits: 16

Total Program Credit Hours: 63

* See Northwest State Core Requirements for Humanities, Mathematics Electives.

* CIS 090 - Introduction to Computers and OAS 090 - Keyboarding Basics are prerequisites to CIS 104, CIS 112, CIS 113 and OAS 101. A placement test is available for CIS 090 & OAS 090. See the Admissions Office.

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

Office Administration, AABOAS

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.

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.

First Semester

- CIS 104 - Desktop Management **Min Credits: 1** *
- CIS 112 - Microsoft Word **Min Credits: 3** + *
- CIS 119 - Power Point **Min Credits: 1** *
- ENG 111 - Composition I **Min Credits: 3**
- OAS 101 - Business Document Formatting/Skillbuilding **Min Credits: 3** *
- ELECTIVE – ACC 111 Financial Accounting **Min Credits: 3** +

  or
- ELECTIVE – OAS 103 Office Accounting **Min Credits: 3** +

Total Credits: 14

Second Semester

- CIS 113 - Microsoft Excel **Min Credits: 3** + *

- CIS 117 - Microsoft Publisher **Min Credits: 3**
- CIS 118 - Access **Min Credits: 1** *
- ENG 112 - Composition II **Min Credits: 3**
- OAS 102 - Advanced Business Document Formatting/Skillbuilding **Min Credits: 3** +
- OAS 105 - Document Editing & Proofreading **Min Credits: 2** +
- OAS 160 - Administrative Technology & Procedures **Min Credits: 3** +

Total Credits: 18

Third Semester

- OAS 200 - Speedbuilding **Min Credits: 1** +
- ELECTIVE Humanities Elective **Min Credits: 3** *
- ELECTIVE Management Elective **Min Credits: 3**
- ELECTIVE Mathematics Elective **Min Credits: 3**
- ELECTIVE Natural Science Elective **Min Credits: 3-4** *

Total Credits: 13-14

Fourth Semester

- ACC 120 - Payroll Accounting **Min Credits: 3** +
- BUS 211 - Business Communications **Min Credits: 3** +
- OAS 249 - Advanced Microsoft Suite **Min Credits: 3** +
- OAS 291 - Internship I **Min Credits: 1** +
- ELECTIVE Social Behavioral Science Elective **Min Credits: 3** *
- ELECTIVE Technical Elective **Min Credits: 3** +

Total Credits: 16

Total Program Credit Hours 61-62

* See Northwest State Core Requirements for Natural Science, Humanities and Social Behavioral Science Electives.

* CIS 090 - Introduction to Computers and OAS 090 - Keyboarding Basics are prerequisites to CIS 104, CIS 112, CIS 113, CIS 117, CIS 118, CIS 119, OAS 101 and/or OAS 104. A placement test is available for CIS 090 & OAS 090. See the Admissions Office.

Management Electives:

MGT 110 Management
MGT 120 Supervision
MGT 210 Human Resource Management

Mathematics Electives:

MTH 105 Quantitative Reasoning
MTH 109 College Algebra
STA 120 Introduction to Statistics

Technical Electives:

ACC 260 Accounting on Computers
OAS 180 Medical Terminology

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

Office Management, AABOAS

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. Apply language arts skills such as proofreading, grammar, and punctuation.
2. Apply proficiency in computer software skills.
3. Define the problem, identify, develop, and implement possible solutions.
4. Explain the major styles of management.

First Semester

- CIS 112 - Microsoft Word **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- OAS 101 - Business Document Formatting/Skillbuilding **Min Credits: 3** +
- MGT 110 - Management **Min Credits: 3** +
- ACC 111 - Financial Accounting **Min Credits: 3** +

  or
- OAS 103 - Office Accounting **Min Credits: 3** +

Total Credits: 15

Second Semester

- BUS 221 - Business Law **Min Credits: 3**
- CIS 113 - Microsoft Excel **Min Credits: 3**
- CIS 117 - Microsoft Publisher **Min Credits: 3**
- CIS 118 - Access **Min Credits: 1** +
- ENG 112 - Composition II **Min Credits: 3**

- OAS 102 - Advanced Business Document Formatting/Skillbuilding **Min Credits: 3** +

Total Credits: 16

Third Semester

- ECO 212 - Microeconomics **Min Credits: 3**
- MKT 110 - Marketing **Min Credits: 3** +
- OAS 160 - Administrative Technology & Procedures **Min Credits: 3** +
- ELECTIVE Mathematics Elective **Min Credits: 3**
- ELECTIVE Natural Science Elective **Min Credits: 3-4** *

Total Credits: 15-16

Fourth Semester

- BUS 211 - Business Communications **Min Credits: 3** +
- MGT 210 - Human Resource Management **Min Credits: 3** +
- OAS 249 - Advanced Microsoft Suite **Min Credits: 3** +
- OAS 291 - Internship I **Min Credits: 1** +
- ELECTIVE Humanities Elective **Min Credits: 3** *
- ELECTIVE Social Behavioral Science Elective **Min Credits: 3** *

Total Credits: 16

Total Program Credit Hours 62-63

* See Northwest State Core Requirements for Mathematics, Natural Science, Humanities and Social Behavioral Science Electives.

^ CIS 090 - Introduction to Computers and OAS 090 - Keyboarding Basics are prerequisites to CIS 112, CIS 113, CIS 117, and CIS 118. A placement test is available for CIS 090 & OAS 090. See the Admissions Office.

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

Accounting Assistant, Certificate

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.

First Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- ACC 120 - Payroll Accounting **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- ELECTIVE Business Elective **Min Credits: 3**
- ELECTIVE Mathematics Elective **Min Credits: 3**

Total Credits: 15

Second Semester

- ACC 112 - Managerial Accounting **Min Credits: 3** +
- ACC 140 - Individual Income Tax Accounting **Min Credits: 3** +
- ENG 112 - Composition II **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- ELECTIVE Computer Accounting Elective **Min Credits: 3** * +

Total Credits: 15

Total Program Credit Hours 30

Mathematics Electives:

MTH 105 Quantitative Reasoning
MTH 109 College Algebra
STA 120 Introduction to Statistics

Computer Accounting Electives:

ACC 260 Accounting on Computers

Business Electives:

BUS211 Business Communications
BUS221 Business Law
BUS250 Labor Relations
CIS113 Microsoft Excel
ECO211 Macroeconomics
ECO212 Microeconomics
MGT110 Management
MGT210 Human Resource Management
MGT280 Business Climate Analysis
MKT230 Professional Selling

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

Entrepreneurship, Certificate

The entrepreneurship certificate is designed for entrepreneurs to obtain a fast start into opening their own business. The program is also designed to easily roll into a two-year entrepreneurship degree.

Entrepreneurship courses are designed to prepare students to start, develop, manage, and grow small business. A business plan is the final output of this program. This certificate can be obtained in person or online. The Ice House Entrepreneurship Program™ is a central focus of this program that assists in creating an entrepreneurial mindset to better prepare you for success.

The certificate includes six courses with a small business management focus and six general business and writing courses. These courses promote entrepreneurial thinking that can be used to open a new business or grow an existing business. This program can be obtained completely on line or face-to-face.

Career Outlook

The career outlook for entrepreneurs and small business owners is always great. Small business ownership is vital for growth of communities and is the economic backbone of the American economy.

Program Learning Outcomes

At the completion of the program students will be able to:

1. Demonstrate comprehension of business ethics.
2. Assess entrepreneurial opportunities.
3. Apply the various functional areas of accounting, marketing, finance, management, human resources and economics.
4. Develop a feasible business plan utilizing business tools that prepare students to communicate the output effectively.

First Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- BUS 101 - Introduction to Business **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- ENG 111 - Composition I **Min Credits: 3**
- MGT 121 - Entrepreneurship I & Small Business Management **Min Credits: 3**
- MKT 115 - Digital Marketing **Min Credits: 3**

Total Credits: 18

Second Semester

- ACC 260 - Accounting on Computers **Min Credits: 3** +
- ECO 212 - Microeconomics **Min Credits: 3**
- MGT 110 - Management **Min Credits: 3**
- MGT 210 - Human Resource Management **Min Credits: 3** +

- MGT 221 - Entrepreneurship II **Min Credits: 3** +
- MKT 110 - Marketing **Min Credits: 3** +

Total Credits: 18

Total Program Credit Hours 36

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

Logistics & Supply Chain Management, Certificate

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 of logisticians is projected to grow 7 percent from 2016 to 2026, about as fast as the average for all occupations. Employment growth will be driven by the need for logistics in the transportation of goods in a global economy.

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. Devise best practices in supply chain management.
5. Differentiate between make the stock and make the order strategies.

First Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- STA 120 - Introduction to Statistics **Min Credits: 3**
- SCM 220 - Operations Management **Min Credits: 3** +

Total Credits: 15

Second Semester

- ACC 112 - Managerial Accounting **Min Credits: 3** +
- SCM 210 - Purchasing & Materials Management **Min Credits: 3** +
- SCM 200 - Supply Chain Management **Min Credits: 3** +
- SCM 230 - Physical Distribution & Logistics **Min Credits: 3** +
- CIS 113 - Microsoft Excel **Min Credits: 3**
- CIS 118 - Access **Min Credits: 1**

Total Credits: 16

Total Program Credit Hours 31

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

Marketing, Certificate

The marketing certificate is an online or face-to-face option to obtain content-rich marketing knowledge. These concepts easily transition into a two-year marketing degree or provide you skills for an entry-level position in marketing such as sales professional, marketing, coordinator, or work in social media, retail, purchasing, and advertising.

The certificate is summarized in six marketing courses, supplemented by four general business and writing courses and can be completed in one year if taken as a full-time student. This program can be obtained completely online or face-to-face.

Career Outlook

The Bureau of Labor Statistics estimates that advertising sales agents (a popular marketing certificate position) earned a median salary of $49,680 in 2017.

Program Learning Outcomes

Students will be able to:

1. Apply appropriate comprehension of business ethics.
2. Explain and apply the marketing functions of product/service planning, pricing, distribution, and promotion for both domestic and international marketing situations.
3. Synthesize principles and concepts of marketing in developing a marketing plan.
4. Apply current technology skills in real world situations.
5. Apply the principles of retailing and e-marketing within the marketing function of a business.

First Semester

- ECO 212 - Microeconomics **Min Credits: 3**
- ENG 111 - Composition I **Min Credits: 3**
- CIS 114 - Microsoft Applications **Min Credits: 3**
- MKT 210 - Advertising **Min Credits: 3** +
- MKT 115 - Digital Marketing **Min Credits: 3**

Total Credits: 15

Second Semester

- MKT 110 - Marketing **Min Credits: 3** +
- ECO 211 - Macroeconomics **Min Credits: 3**
- MGT 120 - Supervision **Min Credits: 3** +
- MKT 230 - Professional Selling **Min Credits: 3** +
- MGT 230 - Retail Management **Min Credits: 3** +

Total Credits: 15

Total Program Credit Hours 30

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

Office Assistant, Certificate

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. 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.

First Semester

- CIS 104 - Desktop Management **Min Credits: 1** *
- CIS 112 - Microsoft Word **Min Credits: 3** + *
- CIS 119 - Power Point **Min Credits: 1** *
- ENG 111 - Composition I **Min Credits: 3**
- OAS 101 - Business Document Formatting/Skillbuilding **Min Credits: 3** *
- ACC 111 - Financial Accounting **Min Credits: 3** +

  or
- OAS 103 - Office Accounting **Min Credits: 3** +

Total Credits: 14

Second Semester

- CIS 113 - Microsoft Excel **Min Credits: 3** + *
- CIS 117 - Microsoft Publisher **Min Credits: 3**
- CIS 118 - Access **Min Credits: 1** *
- ENG 112 - Composition II **Min Credits: 3**
- OAS 102 - Advanced Business Document Formatting/Skillbuilding **Min Credits: 3** +

- OAS 105 - Document Editing & Proofreading **Min Credits: 2** +
- OAS 160 - Administrative Technology & Procedures **Min Credits: 3** +

Total Credits: 18

Total Program Credit Hours 32

***** CIS 090 - Introduction to Computers and OAS 090 - Keyboarding Basics are prerequisites to CIS 104, CIS 112, CIS 113, CIS 117, CIS 118, CIS 119, and/or OAS 101. A placement test is available for CIS 090 & OAS 090. See the Admissions Office.

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

Real Estate, Certificate

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: REA 210 - Real Estate Principles, REA 220 - Real Estate Law, REA 230 - Real Estate Finance and REA 240 - Real Estate Appraisal. Credits earned in the Real Estate Certificate also apply toward a Banking & Finance degree.

NSCC Real Estate courses are offered online to fit the needs of students with busy lifestyles.

Career Outlook

The demand for home purchases and management of rental units is high now and 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. Employment for real estate agents is projected to grow approximately 6 percent through 2026. Rates generally follow the health of the economy and the real estate market.

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.

First Semester

- ACC 111 - Financial Accounting **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- REA 210 - Real Estate Principles **Min Credits: 3** +
- REA 220 - Real Estate Law **Min Credits: 3** +
- Mathematics Elective **Min Credits: 3**

Total Credits: 15

Second Semester

- ACC 112 - Managerial Accounting **Min Credits: 3** +
- CIS 114 - Microsoft Applications **Min Credits: 3**
- BUS 211 - Business Communications **Min Credits: 3**
- REA 230 - Real Estate Finance **Min Credits: 3** +
- REA 240 - Real Estate Appraisal **Min Credits: 3** +

Total Credits: 15

Total Program Credit Hours 30

Mathematics Electives:

MTH 105 Quantitative Reasoning
MTH 109 College Algebra
STA 120 Introduction to Statistics

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

Criminal Justice, AAS

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. Differentiate between the three main components of the criminal justice system; police, courts, and corrections and their roles at the federal, state, and local levels.
2. Demonstrate knowledge of appropriate codes of professional ethics and the capability to critically and reflectively engage ethical issues in criminal justice, particularly questions of social responsibility and professional decision making.
3. Demonstrate knowledge of the theories, principles, judicial and correctional processes, legal institutions, and methods of law enforcement.
4. Analyze the effects of current political and social issues on the function of the criminal justice system in today's society.

First Semester

- ENG 111 - Composition I **Min Credits: 3**
- CJT 130 - Principles of Criminal Justice **Min Credits: 3** +
- CJT 136 - Juvenile Delinquency Principle **Min Credits: 3** +
- PSY 110 - General Psychology **Min Credits: 3**
- ELECTIVE Computer Elective **Min Credits: 3**

Total Credits: 15

Second Semester

- CJT 134 - Criminal Law **Min Credits: 3** +
- CJT 230 - Corrections **Min Credits: 3** +
- ENG 112 - Composition II **Min Credits: 3**
- PSY 210 - Abnormal Psychology **Min Credits: 3**
- CJT 140 - Constitutional Law **Min Credits: 3** +
- ELECTIVE Human Service/Social Science Elective **Min Credits: 3**

Total Credits: 18

Third Semester

- CJT 240 - Criminal Evidence & Procedure **Min Credits: 3** +
- CJT 220 - Law Enforcement in American Society **Min Credits: 3** +

  or
- CJT 252 - Seminar in Criminal Justice **Min Credits: 3** +
- SSC 101 - Sociology **Min Credits: 3**
- ELECTIVE Mathematics Elective **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3**

Total Credits: 15

Fourth Semester

- CJT 244 - Criminal Investigation **Min Credits: 4** +
- CJT 290 - Criminal Justice Practicum **Min Credits: 4** + ^
- ELECTIVE Natural Science Elective **Min Credits: 3-4**
- CJT 242 - Probation & Parole **Min Credits: 3** +

Total Credits: 14-15

Total Program Hours 62-63

***** See Northwest State Core Requirements for Natural Science, Humanities and Social Behavioral Science Electives.

^ A Students currently employed full-time in a professional criminal justice setting may be allowed to substitute this course.

Computer Elective:
Any 3 credit hour or 3 one-credit hour computer course(s).

Human Service/Social Science Electives:
For Criminal Justice Majors only

HST101 Principles of Human Services
HST105 Cultural Competence with Diverse Populations
HST 208 Interview Techniques
HST212 Principles of Addictions
HST214 Human Service Case Management
HST240 Social Problems
HST242 Marriage and Family
PSY220 Social Psychology
PSY230 Human Growth & Development
SSC120 American Government
SSC130 Comparative Government
SSC210 Cultural Diversity

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

Human Services, AAS

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 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, CDCA certification and ability to work with supervision. Employment of social and human service assistants is projected to grow 16 percent from 2016 to 2026, much faster than the average for all occupations. A growing elderly population and rising demand for social services is expected to drive demand for these workers. Job opportunities are expected to be good.

Program Learning Outcomes

1. Graduates will be able to demonstrate the following skills/behaviors.
2. 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).
3. Apply theories from social work, behavioral and social sciences to increase understanding of human behavior.
4. 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).
5. Demonstrate critical thinking, communication & documentation skills to analyze problems and apply social work ethical principles at the micro, mezzo, and macro levels of practice.
6. Demonstrate evidence based practice skills to engage, assess, plan, intervene, advocate, refer, and evaluate individuals, families, groups, organizations & communities.

First Semester

- ENG 111 - Composition I **Min Credits: 3**
- HST 101 - Principles of Human Services **Min Credits: 3** +
- HST 112 - Group Work in Human Services **Min Credits: 3** +
- SSC 101 - Sociology **Min Credits: 3**
- PSY 110 - General Psychology **Min Credits: 3**

Total Credits: 15

Second Semester

- ENG 112 - Composition II **Min Credits: 3**
- HST 105 - Cultural Competence w/Diverse Populations **Min Credits: 3** +
- HST 212 - Principles of Addiction **Min Credits: 3** +
- HST 240 - Social Problems **Min Credits: 3** +
- PSY 210 - Abnormal Psychology **Min Credits: 3**
- STA 120 - Introduction to Statistics **Min Credits: 3**

Total Credits: 18

Third Semester

- HST 208 - Interview Techniques **Min Credits: 3** +
- HST 210 - Human Services Methods **Min Credits: 6** +
- HST 222 - Ethics In the Helping Profession **Min Credits: 3** +
- ELECTIVE Humanities Elective **Min Credits: 3 ***

Total Credits: 15

Fourth Semester

- HST 230 - Introduction to Social Welfare **Min Credits: 3** +
- HST 242 - Marriage & Family **Min Credits: 3** +
- HST 290 - Practicum I **Min Credits: 6** +
- ELECTIVE Natural Science Elective **Min Credits: 3-4 ***

Total Credits: 15-16

Total Program Hours 63-64

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

* See Northwest State Core Requirements for Humanities Electives.

Natural Science Elective:

- BIO 101 - Principles of Biology **Min Credits: 4 is strongly recommended**

Law Enforcement - Academy Option, AASCJT

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 March 31st of the year they graduate from 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:

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.

First Semester

- CJT 130 - Principles of Criminal Justice **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- PSY 110 - General Psychology **Min Credits: 3**
- ELECTIVE Computer Elective **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3** *
- ELECTIVE Natural Science Elective **Min Credits: 3-4** *

Total Credits: 18-19

Second Semester

- CJT 230 - Corrections **Min Credits: 3** +
- ENG 112 - Composition II **Min Credits: 3**
- PSY 210 - Abnormal Psychology **Min Credits: 3**
- SSC 101 - Sociology **Min Credits: 3**

- ELECTIVE Mathematics Elective **Min Credits: 3**
- ELECTIVE Human Service/Social **Min Credits 3**

Total Credits: 18

Third and Fourth Semester

Academy Option: All courses listed must be taken within the Academy hours.

Note: The Academy schedule is August to May, Mon-Thurs evenings 5-10 p.m., Saturdays 8a.m.-4 p.m.

- CJT 134 - Criminal Law **Min Credits: 3** +
- CJT 240 - Criminal Evidence & Procedure **Min Credits: 3** +
- CJT 244 - Criminal Investigation **Min Credits: 4** +
- CJT 246 - Technical Skills for Officers **Min Credits: 3** +
- CJT 281 - Vehicle Patrol Traffic Enforcement **Min Credits: 4** +
- CJT 282 - Firearms/Driving **Min Credits: 4** +
- CJT 283 - Defensive Tactics/Physical Fit **Min Credits: 3** +
- CJT 284 - Human Conditions **Min Credits: 4** +

Total Credits: 28

Total Program Hours 64-65

* See Northwest State Core Requirements for Natural Science, and Humanities Electives.

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 Lifespan Development
SPN111 Spanish I
SSC120 American Government
SSC130 Comparative Government
SSC210 Cultural Diversity

Computer Elective:
Any 3 credit hour or 3 one-credit hour computer course(s).

Mathematics Electives:

MTH 105 - Quantitative Reasoning **Min Credits: 4**
MTH 109 - College Algebra **Min Credits: 3**
STA 120 - Introduction to Statistics **Min Credits: 3**

+ 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.

Paraprofessional Education, AAS

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.

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, child/adult CPR, common childhood illness recognition and child abuse and neglect training through additional college courses or approved community providers to be eligible for licensure.

All students are required to have a documentation file which includes: a recent 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.

Career Outlook

Employment of paraprofessionals is projected to grow 8 percent from 2016 to 2026, about as fast as the average for all occupations. Rising student enrollment along with state and federal funding for education programs should affect growth.

Program Learning Outcomes

Graduates of the Paraprofessional Educator program will:

1. Demonstrate knowledge 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. Apply instructional strategies that accommodate various learning styles, intelligences, and exceptionalities.
4. Assist in assessing students using various assessment tools for the purpose of informing instruction and ensuring student learning.
5. Collaborate 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.

First Semester

- EDP 160 - Introduction to Paraprofessional Education **Min Credits: 3** + ^
- EDU 100 - Introduction to Teaching **Min Credits: 3** +
- EDU 150 - Child Development I **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- PSY 110 - General Psychology **Min Credits: 3**

Total Credits: 16

Second Semester

- EDP 202 - Supporting Children w Severe Disabilities **Min Credits: 3** + *
- EDU 120 - Guidance & Classroom Management **Min Credits: 3** +
- EDU 220 - Special Education **Min Credits: 3** +
- EDU 230 - Family, School & Community **Min Credits: 3** +
- PSY 230 - Lifespan Development **Min Credits: 3**
- ELECTIVE Natural Science Elective **Min Credits: 3-4** *

Total Credits: 18-19

Third Semester

- EDU 140 - Strategies/Teaching Reading **Min Credits: 3** +
- EDU 180 - Health, Safety, and Nutrition **Min Credits: 2** +
- EDU 210 - Creative Arts Curriculum **Min Credits: 3** +
- EDU 240 - Educational Psychology **Min Credits: 3** +
- EDU 270 - Cultural & Linguistic Diversity **Min Credits: 3** + *
- ENG 112 - Composition II **Min Credits: 3**

Total Credits: 17

Fourth Semester

- EDP 290 - Paraprofessional Internship **Min Credits: 2** + *
- EDU 250 - Education Seminar **Min Credits: 2** +
- EDU 260 - Instructional Technology **Min Credits: 3** +
- ENG 230 - Children's Literature **Min Credits: 3** +
- ELECTIVE Mathematics Elective **Min Credits: 3**

Total Credits: 13

Total Program Hours 64-65

* See Northwest State Core Requirements for Natural Science Electives.

Mathematics Electives:

MTH 105 - Quantitative Reasoning **Min Credits: 4**
MTH 109 - College Algebra **Min Credits: 3**
STA 120 - Introduction to Statistics **Min Credits: 3**

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

^ For an ODE Paraprofessional Associate License, students must have a grade of "B" or higher in EDP 160, EDP 202, EDU 270, and EDP 290.

Pre-Kindergarten, AAS

The early childhood development (ECO) 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 language, cognitive, physical, social, emotional, and creative 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, child CPR, common childhood illness recognition and child abuse and neglect training through approved community providers or online 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, ODJFS Background Check 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 ECO/EDU/EDP Student Handbook.

Career Outlook

Employment of preschool teachers is projected to grow 10 percent from 2016 to 2026, faster than the average for all occupations. Growth is expected due to a continued focus on the importance of early childhood education.

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. Apply instructional strategies to promote students' learning and meet the needs and interests of all students.
4. Assess students using various assessment tools for the purpose of informing instruction and ensuring student learning in Pre-Kindergarten learning environments.
5. Collaborate 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.

First Semester

- ECD 190 - Fundamentals of Early Childhood **Min Credits: 3** + ^
- ECD 150 - Infant & Toddler Development **Min Credits: 3**
- EDU 100 - Introduction to Teaching **Min Credits: 3**
- EDU 150 - Child Development I **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- PSY 110 - General Psychology **Min Credits: 3**

Total Credits: 18

Second Semester

- ECD 201 - Pre K Curriculum & Methods **Min Credits: 3** + ^
- EDU 120 - Guidance & Classroom Management **Min Credits: 3** +
- EDU 220 - Special Education **Min Credits: 3** +
- EDU 230 - Family, School & Community **Min Credits: 3** +
- ELECTIVE Natural Science Elective **Min Credits: 3-4 ***

Total Credits: 15-16

Third Semester

- EDU 140 - Strategies/Teaching Reading **Min Credits: 3** +
- EDU 180 - Health, Safety, and Nutrition **Min Credits: 2** +
- EDU 210 - Creative Arts Curriculum **Min Credits: 3** +
- EDU 240 - Educational Psychology **Min Credits: 3** +
- EDU 270 - Cultural & Linguistic Diversity **Min Credits: 3** + *
- ENG 112 - Composition II **Min Credits: 3**

Total Credits: 17

Fourth Semester

- ECD 290 - Pre K Practicum **Min Credits: 3** +
- EDU 250 - Education Seminar **Min Credits: 2** +
- EDU 260 - Instructional Technology **Min Credits: 3** +
- ENG 230 - Children's Literature **Min Credits: 3** +
- ELECTIVE Mathematics Elective **Min Credits: 3**

Total Credits: 14

Total Program Hours: 64-65

* See Northwest State Core Requirements for Natural Science Electives.

Mathematics Electives:

MTH 105 - Quantitative Reasoning **Min Credits: 4**
MTH 109 - College Algebra **Min Credits: 3**
STA 120 - Introduction to Statistics **Min Credits: 3**

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

^ ODE Pre-K Associate License requires grade of “B” or higher in ECD190, ECD201, EDU270, and ECD290.

Law Enforcement Academy, Short-Term Certificate

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 March 31 of the year they graduate from 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 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/.
- Contact the Business and 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 Business and Public Services Division Secretary to schedule a physical fitness test and an interview with the Academy Commander.
- Bring ALL of your completed forms from the application packet to the interview

Course

- CJT 134 - Criminal Law **Min Credits: 3** +
- CJT 240 - Criminal Evidence & Procedure **Min Credits: 3** +
- CJT 244 - Criminal Investigation **Min Credits: 4** +
- CJT 246 - Technical Skills for Officers **Min Credits: 3** +
- CJT 281 - Vehicle Patrol Traffic Enforcement **Min Credits: 4** +
- CJT 282 - Firearms/Driving **Min Credits: 4** +
- CJT 283 - Defensive Tactics/Physical Fit **Min Credits: 3** +
- CJT 284 - Human Conditions **Min Credits: 4** +

Total Program Hours 28

Law Enforcement Academy-All courses listed must be taken within the Academy hours. Academy Schedule: August to May, Monday-Thursday evenings from 5 - 10 p.m., and Saturdays 8 a.m. - 4 p.m.

A complete course calendar will be distributed on the first day of class.

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

Medical Coding & Billing Specialist, Short-Term Certificate

Students will develop skills to accurately determine diagnostic and procedural code number assignments that impact medical reimbursement. Skill sets include application of ICD-CM, CPT, and HCPCS coding systems, medical terminology, anatomy and physiology and disease processes, processing insurance claims and reimbursement practices. Students will be eligible to sit for the Certified Coding Associate (CCA) or Certified Professional Coder (CPC) examination.

Career Outlook

This certificate prepares students for entry-level coding and billing positions in physician and medical offices, medical insurance companies and outpatient billing services.

Program Learning Outcomes

1. Demonstrate effective communication skills, critical thinking, problem solving, and information literacy.
2. Identify the importance of documentation on code number assignment and the subsequent reimbursement impact.
3. Interpret coding guidelines and federal regulations for accurate code number assignment and completion of billing forms.
4. Demonstrate personal behaviors, attitudes, and values consistent with a health care professional.
5. Accurately apply diagnosis and procedure code numbers, ICD-10-CM, CPT, and HCPCS classification systems.

First Semester

- BIO 150 - The Human Body **Min Credits: 4** +
- OAS 180 - Medical Terminology **Min Credits: 3** +
- CIS 114 - Microsoft Applications **Min Credits: 3**

  or
- OAS 101 – Business Formatting & Skillbuilding Min Credits: 3
- MEA 108 - Administrative Medical Office **Min Credits: 3** +

Total Credits: 13

Second Semester

- OAS 227 - Diagnostic Coding **Min Credits: 3** +
- OAS 228 - Procedural Coding **Min Credits: 3** +
- MEA 110 - Pharmacology for a Allied Health Professional **Min Credits: 3** +
- MEA 205 - Disease Conditions **Min Credits: 3** +
- OAS 283 - Computerized Medical Insurance **Min Credits: 3** +

Total Credits: 15

Total Program Credit Hours: 28

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

Science, Technology, Engineering Technology, Math (STEM) and Industrial Technology

STEM

***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 as well as mathematics, natural science, and computer science classes. Students enrolled in a STEM class will benefit from the small classroom sizes as they learn to analyze problems and, more importantly how to solve them.

STEM Division students will be prepared to enter the workforce immediately after graduation from the engineering and technology program. Students concentrating in mathematics and natural sciences along with engineering and technology will also have the option of transferring into a four-year program at a partnering college or university.

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

Associate of Applied Science Degree

Computer Programming
Computer Science Engineering Technology
Cybersecurity & Network Administration
Electro-Mechanical Engineering Technology
Electrical Engineering Technology
Mechanical Engineering Technology
Project Management Technology

Associate of Applied Science in Mechanical Engineering Degree

CAD/CAM
Plastics

Short-Term Technical Certificate Programs

Cybersecurity
Manufacturing Foundations
IT Specialist

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 section. 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.

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.

Industrial Technology 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:

Associate of Applied Science Degree
- Industrial Technology
- Maintenance Technician Mechatronics

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

Short-Term Technical Certificate Programs
- CNC Operations
- Automation
- Maintenance
- Industrial Welding

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 section. 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 Northwest State Core Requirements for Natural Science Electives

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

CAD/CAM, AASMEC

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.

First Semester

- CAD 112 - CAD II **Min Credits: 4**
- ENG 111 - Composition I **Min Credits: 3**
- IND 140 - Principles of Machining **Min Credits: 3** +
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**
- MET 107 - Engineering Graphics & Sketch **Min Credits: 3** +

Total Credits: 15

Second Semester

- CAD 213 - CAD III **Min Credits: 4** +
- ENG 112 - Composition II **Min Credits: 3**
- IND 241 - Tooling & Fixtures - Lubricants/Coolants **Min Credits: 3** +
- MET 222 - Programming Computer Numerical Control **Min Credits: 3** +
- MTH 109 - College Algebra **Min Credits: 3**

Total Credits: 16

Third Semester

- MET 223 - CAM I **Min Credits: 4** +
- MTH 112 - Trigonometry **Min Credits: 3**
- QCT 100 - Quality Concepts **Min Credits: 3** +
- ENG 210 - Technical Communications **Min Credits: 3**
- ELECTIVE Social/Behavioral Science Elective **Min Credits: 3** *

Total Credits: 16

Fourth Semester

- MET 260 - CAM II **Min Credits: 3** +
- MET 262 - CAD/CAM Project **Min Credits: 4** +
- PHY 251 - Physics: Mechanics & Heat **Min Credits: 4**
- CET 115 - Project Management **Min Credits: 3** +
- MET 121 - Manufacturing Processes **Min Credits: 3**
- MET 134 - Engineering Materials **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3** *

Total Credits: 17

Total Program Hours 64

* See Northwest State Core Requirements for a list of Humanities and Social/Behavioral Science Electives.

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

Computer Programming, AAS

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.

First Semester

- EET 107 - Python Programming **Min Credits: 3**
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**
- CIT 191 - Computer Operations **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- CIT 165 - Java Programming **Min Credits: 4** +

Total Credits: 15

Second Semester

- CIS 114 - Microsoft Applications **Min Credits: 3**
- CIT 194 - IT Security Fundamentals **Min Credits: 3** +
- CIT 265 - Java Programming II **Min Credits: 3** +
- ELECTIVE Math Elective **Min Credits: 3** *
- ELECTIVE Humanities Elective **Min Credits: 3**

Total Credits: 15

Third Semester

- ACC 111 - Financial Accounting **Min Credits: 3**
- CIT 150 - Programming C++ **Min Credits: 4** +
- CYB 210 - Cybersecurity Programming **Min Credits: 3** +
- ENG 210 - Technical Communications **Min Credits: 3**
- ELECTIVE Social Behavioral Science Elective **Min Credits: 3** *

Total Credits: 16

Fourth Semester

- CIT 108 - Internet Scripting **Min Credits: 4**
- CIT 161 - C# **Min Credits: 4**
- CIT 109 - Database Management **Min Credits: 4**
- ELECTIVE Natural Science Elective **Min Credits: 3** *

Total Credits: 15

Total Program Credit Hours 61

* See Northwest State Core Requirements for Natural Science and Social Behavioral Science Electives

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

Mathematics Electives:

- MTH 105 - Quantitative Reasoning **Min Credits: 4**
- MTH 109 - College Algebra **Min Credits: 3**
- STA 120 - Introduction to Statistics **Min Credits: 3**

Computer Science Engineering Technology, AAS

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.

First Semester

- CIT 191 - Computer Operations **Min Credits: 3** +
- EET 121 - DC Circuits **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**
- MTH 109 - College Algebra **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3** ***

Total Credits: 17

Second Semester

- EET 122 - AC Circuits **Min Credits: 3** +
- MTH 132 - Discrete Structures **Min Credits: 3** +
- EET 107 - Python Programming **Min Credits: 3** +
- ENG 210 - Technical Communications **Min Credits: 3**

- MTH 112 - Trigonometry **Min Credits: 3**

Total Credits: 15

Third Semester

- CIT 165 - Java Programming **Min Credits: 4** +
- EET 231 - Microprocessors **Min Credits: 4** +
- CIT 195 - Networking Essentials **Min Credits: 3** +
- PHY 251 - Physics: Mechanics & Heat **Min Credits: 4**

Total Credits: 15

Fourth Semester

- EET 221 - Digital Circuits **Min Credits: 4** +
- PHY 252 - Physics: Electricity & Magnetism **Min Credits: 4**
- ENG 113 - Speech **Min Credits: 3**
- EET 282 - Networking II **Min Credits: 3** +
- ELECTIVE Social/Behavioral Science Elective **Min Credits: 3** *

Total Credits: 17

Total Program Hours 64

* See Northwest State Core Requirements for Humanities and Social Behavioral Science Electives.

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

CyberSecurity & Network Administration, AAS

The CyberSecurity and Network Administration major provides the skills and training necessary to install and maintain networks using Microsoft and Linux Operating Systems. Students will also receive training in security penetration testing as well as securing networks using intrusion prevention systems and firewalls. The program provides the student with training in a current programming language. Material in the major aligns with and helps to prepare students for industry standard certifications from organizations such as Comp TIA 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. Graduates may find employment in entry level positions such as Technical Support, Help Desk Technician, IT Consultant, Network Administrator or Security Specialist.

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.
5. Implement procedures designed to counteract current computer and network security risks.

First Semester

- EET 107 - Python Programming **Min Credits: 3**
- CIT 191 - Computer Operations **Min Credits: 3** +
- CIT 195 - Networking Essentials **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**

Total Credits: 14

Second Semester

- CIS 114 - Microsoft Applications **Min Credits: 3**
- CIT 155 - Linux Networking I **Min Credits: 4** +
- CIT 194 - IT Security Fundamentals **Min Credits: 3** +
- ELECTIVE Mathematics Elective **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3**

Total Credits: 16

Third Semester

- ACC 111 - Financial Accounting **Min Credits: 3**
- CIT 193 - Microsoft Server Technology **Min Credits: 3** +
- CYB 210 - Cybersecurity Programming **Min Credits: 3** +
- CYB 220 - Security Auditing **Min Credits: 3**
- ENG 210 - Technical Communications **Min Credits: 3**

Total Credits: 15

Fourth Semester

- CIT 109 - Database Management **Min Credits: 4** +
- CIT 196 - Introduction to Cloud Computing **Min Credits: 3**
- CYB 230 - Network Security **Min Credits: 3**
- ELECTIVE Natural Science Elective **Min Credits: 3**
- ELECTIVE Social/Behavioral Science Elective **Min Credits: 3**

Total Credits: 16

Total Program Credit Hours 61

* See Northwest State Core Requirements for a list of Humanities, Social/Behavioral Science, and Natural Science Electives.

Mathematics Electives:

- MTH 105 - Quantitative Reasoning **Min Credits: 4**
- MTH 109 - College Algebra **Min Credits: 3**
- STA 120 - Introduction to Statistics **Min Credits: 3**

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

Electrical Engineering Technology, AAS

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.

First Semester

- CAD 112 - CAD II **Min Credits: 4**
- EET 121 - DC Circuits **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**
- MTH 109 - College Algebra **Min Credits: 3**

Total Credits: 15

Second Semester

- EET 122 - AC Circuits **Min Credits: 3** +
- EET 221 - Digital Circuits **Min Credits: 4** +
- EET 107 - Python Programming **Min Credits: 3** +
- MTH 112 - Trigonometry **Min Credits: 3**

- ENG 113 - Speech **Min Credits: 3**

Total Credits: 16

Third Semester

- EET 231 - Microprocessors **Min Credits: 4** +
- CIT 195 - Networking Essentials **Min Credits: 3** +
- EET 277 - Industrial Electronics **Min Credits: 3** +
- PHY 251 - Physics: Mechanics & Heat **Min Credits: 4**
- ELECTIVE Social/Behavioral Science Elective **Min Credits: 3** *

Total Credits: 17

Fourth Semester

- ENG 210 - Technical Communications **Min Credits: 3**
- PHY 252 - Physics: Electricity & Magnetism **Min Credits: 4**
- PLC 200 - Programmable Controller I **Min Credits: 3** +
- EET 282 - Networking II **Min Credits: 3** +

  or
- PLC 230 - Servo/Robotic Systems **Min Credits: 3** +

  or
- CET 115 - Project Management **Min Credits: 3** +
- ELECTIVE Humanities Elective **Min Credits: 3** *

Total Credits: 16

Total Program Hours 64

* See Northwest State Core Requirements for a list of Humanities and Social/Behavioral Science Elective

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

Electro-Mechanical Engineering Technology, AAS

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.

First Semester

- ENG 111 - Composition I **Min Credits: 3**
- MTH 109 - College Algebra **Min Credits: 3**
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**
- MET 107 - Engineering Graphics & Sketch **Min Credits: 3** +
- EET 121 - DC Circuits **Min Credits: 3** +

Total Credits: 14

Second Semester

- ENG 210 - Technical Communications **Min Credits: 3**
- MTH 112 - Trigonometry **Min Credits: 3**
- PHY 251 - Physics: Mechanics & Heat **Min Credits: 4**
- MET 121 - Manufacturing Processes **Min Credits: 3** +
- EET 122 - AC Circuits **Min Credits: 3** +

Total Credits: 16

Third Semester

- MET 235 - Statics **Min Credits: 3** +
- MET 234 - Strength of Materials **Min Credits: 3** +
- EET 231 - Microprocessors **Min Credits: 4** +
- ENG 113 - Speech **Min Credits: 3**
- ELECTIVE Social/Behavioral Science Elective **Min Credits: 3 ***

Total Credits: 16

Fourth Semester

- EET 221 - Digital Circuits **Min Credits: 4** +
- CAD 213 - CAD III **Min Credits: 4** +
- CET 115 - Project Management **Min Credits: 3** +
  or
- QCT 100 - Quality Concepts **Min Credits: 3** +
- ELECTIVE Natural Science Elective **Min Credits: 3 ***
- ELECTIVE Humanities Elective **Min Credits: 3 ***

Total Credits: 17

Total Program Hours 63

* See Northwest State Core Requirements for a list of Humanities and Social/Behavioral Science and Natural Science Electives.

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

Mechanical Engineering Technology, AAS

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.

First Semester

- ENG 111 - Composition I **Min Credits: 3**
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**
- MET 107 - Engineering Graphics & Sketch **Min Credits: 3** +
- MET 121 - Manufacturing Processes **Min Credits: 3** +
- MTH 109 - College Algebra **Min Credits: 3**

Total Credits: 14

Second Semester

- CAD 213 - CAD III **Min Credits: 4** +
- ENG 210 - Technical Communications **Min Credits: 3**
- MET 134 - Engineering Materials **Min Credits: 3** +
- MTH 112 - Trigonometry **Min Credits: 3**
- PHY 251 - Physics: Mechanics & Heat **Min Credits: 4**

Total Credits: 17

Third Semester

- QCT 100 - Quality Concepts **Min Credits: 3** +
- MET 234 - Strength of Materials **Min Credits: 3** +
- MET 235 - Statics **Min Credits: 3** +
- ENG 113 - Speech **Min Credits: 3**
- ELECTIVE Natural Science Elective **Min Credits: 4** *

Total Credits: 16

Fourth Semester

- MET 255 - Fluid Mechanics **Min Credits: 3** +
- MET 265 - Machine Design **Min Credits: 3** +
- CAD 112 - CAD II **Min Credits: 4** +

  or
- EET 121 - DC Circuits **Min Credits: 3** +

  or
- CET 115 - Project Management **Min Credits: 3** +
- ELECTIVE Social/Behavioral Science Elective **Min Credits: 3** *
- ELECTIVE Humanities Elective **Min Credits: 3** *

Total Credits: 15

Total Program Hours 62

* See Northwest State Core Requirements for a list of Humanities, Social/Behavioral Science Electives, and Natural Science Electives.

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

Project Management Technology, AAS

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

First Semester

- ENG 111 - Composition I **Min Credits: 3**
- MET 100 - Introduction to Engineering Technology **Min Credits: 2** +
- MET 107 - Engineering Graphics & Sketch **Min Credits: 3** +
- CIS 114 - Microsoft Applications **Min Credits: 3** +
- MTH 109 - College Algebra **Min Credits: 3**

Total Credits: 14

Second Semester

- ENG 210 - Technical Communications **Min Credits: 3**
- MTH 112 - Trigonometry **Min Credits: 3**
- CAD 213 - CAD III **Min Credits: 4** +
- CET 115 - Project Management **Min Credits: 3** +
- Track 1 **Min Credits: 3** +

Total Credits: 16

Third Semester

- PHY 251 - Physics: Mechanics & Heat **Min Credits: 4**
- CET 215 - Project Management II **Min Credits: 3** +
- ECO 212 - Microeconomics **Min Credits: 3**
- ENG 113 - Speech **Min Credits: 3**
- Track 2 **Min Credits: 3** +

Total Credits: 16

Fourth Semester

- QCT 100 - Quality Concepts **Min Credits: 3** +
- ACC 111 - Financial Accounting **Min Credits: 3**
- AET 290 - Alternative Energy Capstone **Min Credits: 4** +
  or
- MET 290 - Engineering Technology Co-op/Internship **Min Credits:** 3 +
- ELECTIVE Humanities Elective **Min Credits: 3** *
- ELECTIVE Natural Science Elective **Min Credits: 4** *

Total Credits: 16-17

Total Program Hours 62 - 63

* See Northwest State Core Requirements for a list of Humanities and Natural Science Electives.

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

Engineering Technology Tracks (Choose a track):

Alternative Energy

- AET 100 - Introduction to Alternative Energies **Min Credits: 3**
- AET 200 - Sustainable Building Design **Min Credits: 3**

Construction

- CET 100 - Construction Method/Materials **Min Credits: 3**
- CET 120 - Construction Material Testing **Min Credits: 3**

Electrical

- EET 121 - DC Circuits **Min Credits: 3**
- EET 122 - AC Circuits **Min Credits: 3**

Mechanical

- MET 121 - Manufacturing Processes **Min Credits: 3**
- MET 134 - Engineering Materials **Min Credits: 3**

Plastics

- PET 115 - Plastics Processes I **Min Credits: 4**
- PET 215 - Plastics Processes II **Min Credits: 4**

Computer Aided Design, Certificate

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

First Semester

- CAD 112 - CAD II **Min Credits: 4** +
- IND 103 - Applied Geometry & Trigonometry **Min Credits: 3**
- IND 140 - Principles of Machining **Min Credits: 3** +
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**
- MET 107 - Engineering Graphics & Sketch **Min Credits: 3** +

Total Credits: 15

Second Semester

- CAD 213 - CAD III **Min Credits: 4** +
- ENG 111 - Composition I **Min Credits: 3**
- IND 241 - Tooling & Fixtures - Lubricants/Coolants **Min Credits: 3** +
- MET 121 - Manufacturing Processes **Min Credits: 3** +
- MET 222 - Programming Computer Numerical Control **Min Credits: 3** +
- QCT141 - Precision Measurement **Min Credits: 3** +

Total Credits: 16

Total Program Hours 31

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

Computer Technician, Certificate

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.

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.

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.
5. Implement procedures designed to counteract current computer and network security risks.

First Semester

- EET 107 - Python Programming **Min Credits: 3**
- CIT 191 - Computer Operations **Min Credits: 3** +
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**
- ENG 111 - Composition I **Min Credits: 3**
- ELECTIVE Technical Elective **Min Credits: 4** +

Total Credits: 15

Second Semester

- CIS 114 - Microsoft Applications **Min Credits: 3**
- CIT 109 - Database Management **Min Credits: 4** +
- CIT 194 - IT Security Fundamentals **Min Credits: 3** +
- ELECTIVE Mathematics Elective **Min Credits: 3**
- ELECTIVE Technical Elective **Min Credits: 4** +

Total Credits: 17

Total Program Credit Hours 32

Mathematics Electives:

- MTH 105 - Quantitative Reasoning **Min Credits: 4**
- MTH 109 - College Algebra **Min Credits: 3**
- STA 120 - Introduction to Statistics **Min Credits: 3**

Technical Electives:

- CIT 155 - Linux Networking I **Min Credits: 4**
- CIT 165 - Java Programming **Min Credits: 4**
- CIT 193 - Microsoft Server Technology **Min Credits: 3**
- CIT 195 - Networking Essentials **Min Credits: 3**
- CIT 265 - Java Programming II **Min Credits: 3**
- CIT 284 - Microsoft Infrastructure Technology **Min Credits: 3**

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

Quality Control, Certificate

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 competiveness. 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 GD&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.

First Semester

- MET 107 - Engineering Graphics & Sketch **Min Credits: 3** +
- MTH 109 - College Algebra **Min Credits: 3**
- QCT 100 - Quality Concepts **Min Credits: 3** +

Total Credits: 9

Second Semester

- CAD 112 - CAD II **Min Credits: 4** +

or

- CAD 213 - CAD III **Min Credits: 4** +
- QCT 131 - Quality for Lean Manufacturing **Min Credits: 3** +

Total Credits: 7

Third Semester

- QCT 141 - Precision Measurement **Min Credits: 3** +
- QCT 243 - Advanced Quality Improvement **Min Credits: 3** +
- ELECTIVE Communications Elective **Min Credits: 3** *

Total Credits: 9

Fourth Semester

- MET 121 - Manufacturing Processes **Min Credits: 3** +
- QCT 142 - Advanced Concepts of GD & T **Min Credits: 3** +
- QCT 250 - Certified Quality Technician **Min Credits: 3** +

Total Credits: 9

Total Program Hours 34

* See Northwest State Core Requirements for a list of Communications Electives.

* Prior to taking IND 110, 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.

CyberSecurity, Short-Term Certificate

Cybersecurity is the next logical evolution for IT professionals. Specifically, the Ohio Attorney General launched the CyberOhio Initiative in 2016; two of the goals of CyberOhio are to provide cybersecurity training opportunities for Ohio businesses and to create collaborative opportunities for colleges to partner with businesses for internships.

Career Outlook

The career outlook for cyber security is very good. There is currently 0% unemployment in the field. According to current reports and statistics, there will be 6 million cyber security jobs by 2019. There will be a shortage of trained workforce and 1.5 million of those jobs will go unfilled. (Source: "One Million Cybersecurity Job Openings in 2016;" Forbes.com)

Possible career titles are security operations center analyst, information security analyst, cyber security analyst, penetration tester, information assurance analyst, and cyber operations analyst.

Program Learning Outcomes

1. Demonstrate the ability to work with various operating systems.
2. Analyze an organization's assets and develop an appropriate risk management framework.
3. Conduct security audits and provide appropriate reporting to stakeholders.
4. Demonstrate the ability to create and deploy software that improves an organization's security posture.
5. Select the appropriate cybersecurity controls for an organization to be compliant with governance and regulations.
6. Demonstrate the ability to design and secure small to medium sized networks.
7. Create appropriate security policies and procedures based upon business processes.

Course

- CIT 191 - Computer Operations **Min Credits: 3** +
- CIT 195 - Networking Essentials **Min Credits: 3** +
- EET 107 - Python Programming **Min Credits: 3** +
- CIT 194 - IT Security Fundamentals **Min Credits: 3** +
- CYB 230 - Network Security **Min Credits: 3** +
- CYB 210 - Cybersecurity Programming **Min Credits: 3** +
- CYB 220 - Security Auditing **Min Credits: 3** +

Total Credits: 21

Total Program Hours 21

+ 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 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.

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 HTMUCSS 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-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 MTH 080 level or successful completion of MTH 080.
- GPA 2.0 or higher.

First Semester

- DBP 110 - ICDL Computer Technologies **Min Credits: 1** +
- DBP 150 - Database Basics **Min Credits: 3** +
- DBP 205 - Discrete Structures **Min Credits: 3** +
- DBP 210 - Computer Programming I **Min Credits: 3** +

Total Credits: 10

Second Semester

- CIT 195 - Networking Essentials **Min Credits: 3** +
- DBP 130 - IT Customer Service & Communication **Min Credits: 3** +
- DBP 220 - Database Reporting **Min Credits: 3** +
- DBP 225 - Computer Programming II **Min Credits: 3** +

Total Credits: 12

Total Program Hours 22

+ Refers to technical course work. Students must maintain a minimum grade of "C" in these courses to progress in the program and graduate.

Manufacturing Foundations, Short-Term Certificate

There is a critical need for more students to go into manufacturing and engineering professions. Because of that need OhioTechNet and Ohio Higher ED worked with the Ohio Engineering Technology Educators, and the Ohio Manufacturers Association to develop the Manufacturing Foundations Certificate.

This program was designed by the ODHE and OhioTechNet and endorsed by the Ohio Engineering Technology Educators Association and the Ohio Manufactures Association.

Career Outlook

The Occupations that these students can go into are: Manufacturing, Engineering, Design, Drafting, Maintenance, Machining, Associate's Degrees in Engineering and Manufacturing, along with Bachelor's Degrees in Engineering and Manufacturing. The program was designed to be stackable. Students can get the certificate and go straight to work or they can continue on with an Associate's Degree and then get a Bachelor's Degree if they choose.

Program Learning Outcomes

Students earning a certificate from this program should demonstrate:

1. Use a commercially available CAD system to create meaningful engineering drawings including: dimensions and tolerances, multiple views and projections; assemblies and bill of materials; and 3D models.
2. Apply fundamental knowledge of engineering materials and why they are utilized in a particular application. Students will demonstrate an understanding of material composition; processes for manufacturing of steels and alloying; cold and hot working processes; and material hardness, modulus of elasticity, tensile strength, yield strength, and shear strength.
3. Apply their knowledge of materials to manufacturing processes and demonstrate an understanding of: processes such as material removing, forging, casting, forming, finishing; fabrication processes such as welding, adhesives, and fasteners; production efficiencies (e.g., speed and feeds); and safety procedures and methods.
4. Work as a member of a team to communicate effectively, solve problems, and improve productivity.

First Semester

- ENG 111 - Composition I **Min Credits: 3**
- MTH 109 - College Algebra **Min Credits: 3**
- MET 121 - Manufacturing Processes **Min Credits: 3** +

Total Credits: 9

Second Semester

- MET 134 - Engineering Materials **Min Credits: 3** +
- CAD 213 - CAD III **Min Credits: 4** +
- MET 290 - Engineering Technology Co-op/Internship **Min Credits: 3** +

Total Credits: 8-10

Total Program Hours: 17-19

+ Refers to technical course work. Students must maintain a minimum grade of "C" in these courses to progress in the program and graduate.

Industrial Technology

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.

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

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:

- ENG 111 - Composition I
- ENG 113 - Speech
- ENG 210 - Technical Communications
- ENG 214 - Discussion & Conference Method

Natural Science:

- See Science, Technology, Engineering Technology, Math (STEM) and Industrial Technology for Natural Science Electives

Technical Electives:

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

Industrial Technology, AAS

This degree will focus on learning experiences that will prepare students with the technical skills to work with in 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)

First Semester

- ENG 111 - Composition I **Min Credits: 3**
- IND 105 - Industrial Safety **Min Credits: 2**
- IND 110 - Industrial Computing I **Min Credits: 3** ^

  or
- CIS 114 - Microsoft Applications **Min Credits: 3**
- MTH 109 - College Algebra **Min Credits: 3**
- ELECTIVE Technical Elective **Min Credits: 3** + **

Total Credits: 14

Second Semester

- ENG 112 - Composition II **Min Credits: 3**
- IND 103 - Applied Geometry & Trigonometry **Min Credits: 3**
- ELECTIVE Technical Elective **Min Credits: 9** + **

Total Credits: 15

Third Semester

- ELECTIVE Humanities Elective **Min Credits: 3** *
- ELECTIVE Natural Science Elective **Min Credits: 3** + *
- ELECTIVE Technical Electives **Min Credits: 9** **

Total Credits: 15

Fourth Semester

- ELECTIVE Natural Science Elective (Including a Lab) **Min Credits: 4** *
- ELECTIVE Social/Behavioral Science Elective **Min Credits: 3** + *
- ELECTIVE Technical Electives **Min Credits: 10** **

Total Credits: 17

Total Program Hours 61

* See Northwest State Core Requirements for a list of Humanities, Social/Behavioral Science Electives, and Natural Science Electives.

^ Prior to taking IND 110, students should have basic computer literacy in Windows and at least one Windows application.

** See next page for listing of Technical Electives.

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

Technical Electives

CourseID	Title	Credit Hours
AET110	Energy Audit	3
IND100	Precision Measurement	3
IND120	Industrial Electricity I	3
IND121	Industrial Electricity II	3
IND122	Industrial Wiring (NEC)	3
IND130	Rigging and Erecting	3
IND131	Industrial Pipefitting	3
IND132	Bench Work	2
IND134	Industrial Fluid Power I	3
IND140	Principles of Machining	3
IND141	Metallurgy & Heat Treatment	2
IND220	Electrical Prints & Troubleshooting	3
IND221	Instrumentation & Controls I	3
IND223	Motors & Motor Controls	3
IND232	Machine Repair	3
IND234	Industrial Fluid Power II	3
IND240	Machining Processes II	3
IND241	Tooling & Fixtures Lubricants & Coolants	3
INT120	HVACR I	3
INT220	HVACR II	3
INT221	HVAC III Heating Systems	3
MET107	Engineering Graphics & Sketching	3
MET222	Program Computer Numerical Control	3
MET223	CAM I	4
PLC200	Programmable Controller I	3
PLC210	Programmable Controller II (AB)	3
PLC220	PLC III	3
PLC230	Servo/Robotic Systems	3
QCT100	Quality Concepts	3
WLD100	Blue Print & Weld Symbols	2
WLD110	Intro to Applied Welding Techniques	3
WLD120	Gas Metal Arc Welding	3
WLD130	Flat and Horizontal Shield Metal Arc	3
WLD140	Gas Tungsten Arc Welding	3
WLD150	Advanced Gas Metal Arc Welding	3
WLD210	Vertical & Overhead SMAW	3
WLD220	Advanced Gas Tungsten Arc Welding	3
WLD250	Pipe Welding	3
WLD260	Pre-Pipe Certification	3

Maintenance Technician/Mechatronics, AAS

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. Identify industrial symbols in schematics.
2. Construct a fluid power system.
3. Apply principles of electrical controls and fluid power applications to industrial situations.
4. Apply knowledge of installing/layout of machinery/industrial components safely.
5. Demonstrate proficiency in welding techniques.
6. Apply proper rigging techniques to move a load.

First Semester

- IND 120 - Industrial Electricity I **Min Credits: 3** +
- IND 132 - Bench Work **Min Credits: 2** +
- IND 121 - Industrial Electricity II **Min Credits: 3** +
- IND 105 - Industrial Safety **Min Credits: 2** +

Total Credits: 10

Second Semester

- IND 103 - Applied Geometry & Trigonometry **Min Credits: 3**
- IND 107 - Print Reading and Sketching **Min Credits: 3** +
- ENG 111 - Composition I **Min Credits: 3**
- IND 134 - Industrial Fluid Power I **Min Credits: 3** +
- IND 131 - Industrial Pipefitting **Min Credits: 3** +

Total Credits: 15

Third Semester

- PLC 200 - Programmable Controller I **Min Credits: 3** +
- MTH 109 - College Algebra **Min Credits: 3** +
- IND 223 - Motors & Motor Controls **Min Credits: 3**
- ELECTIVE Humanities Elective **Min Credits: 3**

Total Credits: 12

Fourth Semester

- ELECTIVE Natural Science Elective (Including a lab) **Min Credits: 4 ***
- IND 234 - Industrial Fluid Power II **Min Credits: 3** +
- WLD 110 - Introduction to Applied Welding Techniques **Min Credits: 3**
- IND 221 - Instrumentation & Controls I **Min Credits: 3** +

Total Credits: 13

Fifth Semester

- IND 130 - Rigging and Erecting **Min Credits: 3** +
- ELECTIVE Social/Behavioral Science Elective **Min Credits: 3 ***
- IND 232 - Machine Repair **Min Credits: 3** +
- PLC 230 - Servo/Robotic Systems **Min Credits: 3** +

Total Credits: 12

Total Program Hours 62

* See Northwest State Core Requirements for a list of Humanities and Social/Behavioral Science and Natural Science Electives.

* Prior to taking IND 110, 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.

HVAC-R (Climate Control), Certificate

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.

First Semester / 1st 8 weeks

- IND 120 - Industrial Electricity I **Min Credits: 3** +
- IND 105 - Industrial Safety **Min Credits: 2**
- AET 110 - Energy Audit **Min Credits: 3** +

Total Credits: 8

First Semester / 2nd 8 weeks

- INT 120 - HVACR I **Min Credits: 3** +
- IND 220 – Electrical Prints and Troubleshooting **Min Credits: 3** +
- IND 131 - Industrial Pipefitting **Min Credits: 3** +

Total Credits: 9

Second Semester / 1st 8 weeks

- IND 223 - Motors & Motor Controls **Min Credits: 3** +
- IND 121 - Industrial Electricity II **Min Credits: 3** +
- ELECTIVE Communications Elective **Min Credits: 3** ***

Total Credits: 9

Second Semester / 2nd 8 weeks

- INT 220 - HVACR II **Min Credits: 3** +
- INT 221 - HVAC III Heating Systems **Min Credits: 3** +

Total Credits: 6

Total Program Hours 32

* See Northwest State Core Requirements for a list of Communications Electives.

Must be proficient in MTH 080.

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

Industrial Electrical, Certificate

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.

First Semester

- IND 120 - Industrial Electricity I **Min Credits: 3** +
- IND 110 - Industrial Computing I **Min Credits: 3** ^
- IND 105 - Industrial Safety **Min Credits: 2**

Total Credits: 8

Second Semester

- IND 121 - Industrial Electricity II **Min Credits: 3** +
- IND 134 - Industrial Fluid Power I **Min Credits: 3** +
- IND 122 - Industrial Wiring (NEC) **Min Credits: 3** +

Total Credits: 9

Third Semester

- IND 220 - Electrical Prints & Troubleshooting **Min Credits: 3** +
- IND 223 - Motors & Motor Controls **Min Credits: 3** +
- PLC 200 - Programmable Controller I **Min Credits: 3** +

Total Credits: 9

Fourth Semester

- IND 221 - Instrumentation & Controls I **Min Credits: 3** +
- PLC 230 - Servo/Robotic Systems **Min Credits: 3** +
- ELECTIVE Communications Elective **Min Credits: 3** *

Total Credits: 9

Total Program Hours 35

* See Northwest State Core Requirements for a list of Communications Electives.

^ Prior to taking IND 110, 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

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

1. Assess basic electrical theory and use of electrical components.
2. Identify PLC control systems through lectures, readings, and lab exercises.
3. Construct a fluid power system.
4. Apply knowledge of installing/layout of machinery/industrial components safely.
5. Assess proper rigging techniques.
6. Demonstrate proficiency in welding techniques.

First Semester

- IND 120 - Industrial Electricity I **Min Credits: 3** +
- IND 132 - Bench Work **Min Credits: 2**
- IND 121 - Industrial Electricity II **Min Credits: 3** +
- IND 105 - Industrial Safety **Min Credits: 2**

Total Credits: 10

Second Semester

- PLC 200 - Programmable Controller I **Min Credits: 3** +
- IND 103 - Applied Geometry & Trigonometry **Min Credits: 3**
- IND 232 - Machine Repair **Min Credits: 3** +
- IND 134 - Industrial Fluid Power I **Min Credits: 3** +

Total Credits: 12

Third Semester

- WLD 110 - Introduction to Applied Welding Techniques **Min Credits: 3** +
- IND 130 - Rigging and Erecting **Min Credits: 3** +
- IND 131 - Industrial Pipefitting **Min Credits: 3** +
- IND 234 - Industrial Fluid Power II **Min Credits: 3** +

Total Credits: 12

Fourth Semester

- IND 223 - Motors & Motor Controls **Min Credits: 3** +

Total Credits: 3

Total Program Hours 37

* See Northwest State Core Requirements for a list of Communications Electives.

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

Industrial Mechanical/Millwright, Certificate

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 reconditioner.

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. Apply knowledge of basic print reading skills including dimensioning practices and calculations, sketching including orthographic, isometric, sectional and auxiliary views.
2. Produce machining and fabrication projects with an emphasis on safety, fixturing, feeds and speeds, tooling, precision, and accuracy.
3. Demonstrate proficiency in welding techniques.
4. Construct a fluid power system.
5. Apply proper rigging techniques to move a load.
6. Apply knowledge of installing/layout of machinery/industrial components safely.

First Semester / 1st 8 weeks

- IND 107 - Print Reading and Sketching **Min Credits: 3** +
- IND 132 - Bench Work **Min Credits: 2** +

Total Credits: 5

First Semester / 2nd 8 weeks

- IND 103 - Applied Geometry & Trigonometry **Min Credits: 3**
- IND 140 - Principles of Machining **Min Credits: 3** +

Total Credits: 6

Second Semester/ 1st 8 weeks

- WLD 110 - Introduction to Applied Welding Techniques **Min Credits: 3**
- IND 100 - Precision Measurement **Min Credits: 3**

Total Credits: 6

Second Semester / 2nd 8 weeks

- IND 232 - Machine Repair **Min Credits: 3** +
- IND 134 - Industrial Fluid Power I **Min Credits: 3** +

Total Credits: 6

Third Semester / 1st 8 weeks

- IND 130 - Rigging and Erecting **Min Credits: 3** +
- IND 105 - Industrial Safety **Min Credits: 2**

Total Credits: 5

Third Semester / 2nd 8 weeks

- IND 234 - Industrial Fluid Power II **Min Credits: 3** +
- IND 131 - Industrial Pipefitting **Min Credits: 3** +

Total Credits: 6

Total Program Hours 34

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

Machining, Certificate

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), exy-acetylene, gas metal (MIG) and gas tungsten (TIG), through assignments and projects.

First Semester

- IND 107 - Print Reading and Sketching **Min Credits: 3** +
- IND 110 - Industrial Computing I **Min Credits: 3** ^
- IND 105 - Industrial Safety **Min Credits: 2**
- IND 132 - Bench Work **Min Credits: 2** +

Total Credits: 10

Second Semester

- IND 103 - Applied Geometry & Trigonometry **Min Credits: 3**
- WLD 110 - Introduction to Applied Welding Techniques **Min Credits: 3** +
- IND 140 - Principles of Machining **Min Credits: 3** +

Total Credits: 9

Third Semester

- IND 100 - Precision Measurement **Min Credits: 3** +

- IND 240 - Machining Processes II **Min Credits: 3** +
- ELECTIVE Communications Elective **Min Credits: 3** *

Total Credits: 9

Fourth Semester

- IND 241 - Tooling & Fixtures - Lubricants/Coolants **Min Credits: 3** +
- IND 141 - Metallurgy & Heat Treatment **Min Credits: 2** +
- MET 222 - Programming Computer Numerical Control **Min Credits: 3** +

Total Credits: 8

Total Program Hours 36

* See Northwest State Core Requirements for a list of Communications Electives.

^ Prior to taking IND 110, 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.

Plastics Manufacturing, Certificate

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.

First Semester

- IND 105 - Industrial Safety **Min Credits: 2**
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**
- MET 107 - Engineering Graphics & Sketch **Min Credits: 3** +
- PET 110 - Principles of Plastics **Min Credits: 4** +
- PET 115 - Plastics Processes I **Min Credits: 4** +

Total Credits: 15

Second Semester

- ENG 111 - Composition I **Min Credits: 3**
- IND 103 - Applied Geometry & Trigonometry **Min Credits: 3**
- PET 215 - Plastics Processes II **Min Credits: 4** +
- PET 250 - Plastics Secondary Operations **Min Credits: 4** +
- QCT 100 - Quality Concepts **Min Credits: 3** +

Total Credits: 17

Total Program Hours 32

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

Programmable Controller, Certificate

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.

First Semester / 1st 8 weeks

- IND 120 - Industrial Electricity I **Min Credits: 3** +
- IND 110 - Industrial Computing I **Min Credits: 3** ^
- IND 105 - Industrial Safety **Min Credits: 2**

Total Credits: 8

First Semester / 2nd 8 weeks

- IND 121 - Industrial Electricity II **Min Credits: 3** +
- PLC 200 - Programmable Controller I **Min Credits: 3** +
- ELECTIVE Communications Elective **Min Credits: 3 ***

Total Credits: 9

Second Semester / 1st 8 weeks

- IND 223 - Motors & Motor Controls **Min Credits: 3** +
- IND 221 - Instrumentation & Controls I **Min Credits: 3** +

Total Credits: 6

Second Semester / 2nd 8 weeks

- PLC 210 - Programmable Controller II (AB) **Min Credits: 3** +
- PLC 220 - PLC III **Min Credits: 3** +
- PLC 230 - Servo/Robotic Systems **Min Credits: 3** +

Total Credits: 9

Total Program Hours 32

***** See Northwest State Core Requirements for a list of Communications Electives.

^ Prior to taking IND 110, 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.

Automation, Short-Term Certificate

The Automation Short-Term Certificate program will give students a strong fundamental background in electrical basics and the usage of programmable logic controller (PLCs) to control automated industrial processes. Students will get an introduction to FANUC robotics for industrial.

Program Learning Outcomes

1. Program Learning Outcomes
2. Demonstrate knowledge of electrical symbols and abbreviations.
3. Demonstrate basic ladder logic programming.
4. Implement basic processes employing Programmable Logic Controllers.
5. Demonstrate basic operations of robotics.

Shared Core: First Semester

- INT 110 - Safety Equipment & Procedures **Min Credits: 1** +
- INT 111 - Hazardous Materials **Min Credits: 1** +
- PLC 120 - Industrial Electricity IA **Min Credits: 1** +
- PLC 121 - Industrial Electricity IB **Min Credits: 1** +
- PLC 122 - Industrial Electricity IC **Min Credits: 1** +
- PLC 123 - Industrial Electricity IIA **Min Credits: 1** +
- PLC 124 - Industrial Electricity IIB **Min Credits: 1** +
- PLC 125 - Industrial Electricity IIC **Min Credits: 1** +
- PLC 126 - PLC IA **Min Credits: 1** +
- PLC 127 - PLC IB **Min Credits: 1** +
- PLC 128 - PLC IC **Min Credits: 1** +
- PLC 129 - PLC IIA **Min Credits: 1** +
- PLC 130 - PLC IIB **Min Credits: 1** +
- PLC 131 - PLC IIC **Min Credits: 1** +
- PLC 132 - PLC IIIA **Min Credits: 1** +
- PLC 133 - PLC IIIB **Min Credits: 1** +
- PLC 134 - PLC IIIC **Min Credits: 1** +
- PLC 135 - Servo/Robotics A **Min Credits: 1** +
- PLC 136 - Servo/Robotics B **Min Credits: 1** +
- PLC 137 - Servo/Robotics C **Min Credits: 1** +

Total program Credit Hours: 20

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

CAM, Short-Term Certificate

The CAM short-term certificate provides students with strong foundation in the reading and creating of blue prints for manufacturing. This includes developing a foundation in computer aided design using Solidworks and the programming of Computer Numeric Controlled (CNC) machines for the precision fabrication of parts.

Program Learning Outcomes

1. Create engineering drawings using orthographic projection, isometric views, and proper dimensioning.
2. Demonstrate machining projects with an emphasis on safety, fixturing, feeds and speeds, tooling, precision, and accuracy.
3. Demonstrate the use CAM software.

First Semester

- INT 110 - Safety Equipment & Procedures **Min Credits: 1** +
- INT 111 - Hazardous Materials **Min Credits: 1** +
- INT 107 - Print Reading & Sketching A **Min Credits: 1** +
- INT 108 - Print Reading & Sketching B **Min Credits: 1** +
- INT 109 - Print Reading & Sketching C **Min Credits: 1** +
- INT 112 - Principles of Machining A **Min Credits: 1**+
- INT 113 - Principles of Machining B **Min Credits: 1** +
- INT 114 - Principles of Machining C **Min Credits: 1** +
- INT 115 - Solidworks A **Min Credits: 1** +
- INT 116 - Solidworks B **Min Credits: 1** +
- INT 117 - Solidworks C **Min Credits: 1** +
- INT 118 - Solidworks D **Min Credits: 1** +
- INT 121 - Programming CNC A **Min Credits: 1** +
- INT 122 - Programming CNC B **Min Credits: 1** +
- INT 123 - Programming CNC C **Min Credits: 1** +
- INT 124 - CAM IA **Min Credits: 1** +
- INT 125 - CAM IB **Min Credits: 1** +
- INT 126 - CAM IC **Min Credits: 1** +
- INT 127 - CAM ID **Min Credits: 1** +

Total Credits: 19

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

CNC Operations, Short-Term 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

- IND 103 - Applied Geometry & Trigonometry **Min Credits: 3** +
- IND 132 - Bench Work **Min Credits: 2** +
- IND 107 - Print Reading and Sketching **Min Credits: 3** +
- IND 140 - Principles of Machining **Min Credits: 3** +
- IND 240 - Machining Processes II **Min Credits: 3** +

Total Credits: 14

Second Semester

- IND 241 - Tooling & Fixtures - Lubricants/Coolants **Min Credits: 3** +
- IND 100 - Precision Measurement **Min Credits: 3** +
- MET 222 - Programming Computer Numerical Control **Min Credits: 3** +
- WLD 110 - Introduction to Applied Welding Techniques **Min Credits: 3** +

Total Credits: 12

Total Program Hours 26

+ 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, Short-Term 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. Identify industrial symbols in schematics.
2. Construct a fluid power system.
3. Install, maintain and troubleshoot Programmable Logic Controller systems.
4. Troubleshoot servo and robotic systems.
5. Apply knowledge of installing/layout of machinery/industrial components safely.
6. Demonstrate proficiency in welding techniques.

First Semester

- IND 120 - Industrial Electricity I **Min Credits: 3** +
- WLD 110 - Introduction to Applied Welding Techniques **Min Credits: 3** +
- IND 131 - Industrial Pipefitting **Min Credits: 3** +
- IND 121 - Industrial Electricity II **Min Credits: 3** +
- IND 132 - Bench Work **Min Credits: 2** +

Total Credits: 14

Second Semester

- PLC 200 - Programmable Controller I **Min Credits: 3**
- IND 134 - Industrial Fluid Power I **Min Credits: 3**
- PLC 230 - Servo/Robotic Systems **Min Credits: 3**
- IND 223 - Motors & Motor Controls **Min Credits: 3**
- IND 232 - Machine Repair **Min Credits: 3**

Total Credits: 15

Total Program Hours 29

+ 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 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.

First Semester

- WLD 100 - Blue Print & Weld Symbols **Min Credits: 2** +
- WLD 110 - Introduction to Applied Welding Techniques **Min Credits: 3** +
- WLD 120 - Gas Metal Arc Welding **Min Credits: 3** +

Total Credits: 8

Second Semester

- WLD 130 - Flat/Horizontal Shield Metal Arc **Min Credits: 3** +
- WLD 140 - Gas Tungsten Arc Welding **Min Credits: 3** +
- WLD 150 - Advanced Gas Metal Arc Welding **Min Credits: 3** +

Total Credits: 9

Total Program Hours 17

+ Refers to technical course work. Students must maintain a minimum grade of "C" in these courses to progress in the program and graduate.

Plastics, AASMEC

Plastics is one of the fastest growing manufacturing Industries today. This program was developed 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

1. Interpolate engineered drawings using orthographic projection, isometric views, and proper dimensioning practices.
2. Complete engineered drawings using orthographic projection, isometric views, and proper dimensioning practices.
3. Employ the use of Computer Aided Design (CAD) software.
4. Describe different manufacturing processes.
5. Examine the physical and chemical properties of engineering materials.
6. Demonstrate proper use of precision measuring devises and instruments.
7. Analyze various polymeric structures and applications based on those structures.
8. Demonstrate each of the following: Set a mold, establish a production intent process, and troubleshoot the process considering major aspects such as material, tool design, and secondary operations.
9. Analyze the resolution of forces on rigid bodies; determine stress, stain, and deflection.

First Semester

- ENG 111 - Composition I **Min Credits: 3**
- MET 100 - Introduction to Engineering Technology **Min Credits: 2**+
- MET 107 - Engineering Graphics & Sketch **Min Credits: 3** +
- MET 121 - Manufacturing Processes **Min Credits: 3** +
- MTH 109 - College Algebra **Min Credits: 3**

Total Credits: 14

Second Semester

- CAD 213 – CAD 111 **Min Credits: 4** +
- ENG 210 - Technical Communications **Min Credits: 3**
- PET 115 – Plastics Processes **Min Credits: 4** +
- MTH 112 - Trigonometry **Min Credits: 3**
- PHY 251 - Physics: Mechanics & Heat **Min Credits: 4**

Total Credits: 18

Third Semester

- QCT 100 - Quality Concepts **Min Credits: 3** +
- MET 234 - Strength of Materials **Min Credits: 3** +
- MET 235 - Statics **Min Credits: 3** +
- CHM 101 – Principles of Chemistry **Min Credits: 4**
- PET 215 – Plastics Processes II **Min Credits: 4**+

Total Credits: 17

Fourth Semester

- MET 255 - Fluid Mechanics **Min Credits: 3** +
  or
- MET 290 – Internship **Min Credits: 3** +
- MET 134 – Engineering Materials **Min Credits: 3** +
- ELECTIVE Social/Behavioral Science Elective **Min Credits: 3** *
- ELECTIVE Humanities Elective **Min Credits: 3** *
- ENG 113 – Speech **Min Credits: 3**

Total Credits: 15

Total Program Hours 64

* See Northwest State Core Requirements for a list of Humanities and Social/Behavioral Science Electives.

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

Nursing and Allied Health

The Nursing and Allied Health Division offers various healthcare degree and certificate programs that prepare students to meet specific healthcare industry employment needs in northwest Ohio. There are Associate Degree programs and two certificate options.

All Nursing programs are fully approved by the Ohio Board of Nursing; the associate degree program is also accredited by the Accreditation Commission for Education in Nursing, 3390 Peachtree Road NE, Suite 1400, 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 and Allied Health for further information.

The Nursing & Allied Health Division offer the following degree and certificate programs:

Degree Program

Associate of Applied Science in Medical Assisting

Associate of Applied Science in Nursing

Certificate Program

Practical Nursing (PN)

Short-Term Technical Certificate Program

Phlebotomy Technician

Prerequisites

All students are required to demonstrate proficiencies in reading, writing, and mathematics based on scores on the placement test or ACT test or by satisfactorily completing recommended classes. Students who have not taken the placement test or ACT should stop by the Admissions Office or contact at (419) 267-1320 or admissions@NorthwestState.edu for testing information.

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

Northwest Ohio Allied Health Education Consortium

NSCC participates in the Northwest Ohio Allied Health Education Consortium, a collaboration among five Ohio community colleges. NSCC offers non-technical course in the following consortium programs.

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

Select technical courses in these programs are offered through distance learning on the NSCC campus.

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 and Allied Health 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

The nursing programs are rigorous. Full-time employment is not recommended during the clinical courses.

Clinical agencies require that students must be at least 18 years of age.

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

Helpful websites of licensing and certifying boards: Ohio Board of Nursing - www.nursing.ohio.gov/

Clinical Agencies
The Division uses a variety of ambulatory, acute-care, and long-term care agencies throughout Northwest Ohio and Northeast Indiana for student clinical experiences.

Course Sequencing
Students are expected to complete courses in the sequence specified for their individual curriculum. It is essential that students meet with their advisor to create a plan of study to attain program completion in a timely manner.

Criminal Background Checks and Drug Screening
A criminal background check will be mandatory prior to clinical experiences to meet the requirements of our clinical affiliates. Students with certain felony, misdemeanor, or drug-related convictions will be ineligible for admission into the nursing programs and/or clinical experiences in Medical Assisting and Phlebotomy. A criminal record may prevent a student from obtaining a license or certificate in his/her chosen healthcare profession or to obtain employment post-graduation.

Students are required to undergo a drug screen, and may need additional drug screening depending on clinical placement. Positive drug screenings may result in dismissal from all clinical courses and/or program. Any student who refuses/fails to cooperate or complete any required drug screening will be considered "positive" and dismissed from the clinical component of their program. All students requiring drug screening may be subject to random drug screens and for cause during the program.

A positive criminal background check or drug screen requires a conference with the Dean of Nursing & Allied Health to determine whether the student can be admitted and/or continue in the chosen program. Although reasonable efforts will be made to place students in clinical experiences, the host clinical affiliate will determine whether a student will be allowed to be placed in the facility

Program Approval
The Registered Nursing and Practical Nursing programs are approved by:

Ohio Board of Nursing
17 S. High Street, Suite 660
Columbus, OH 43215-3466
(614) 466-3947

Accreditation
The Associate Degree Nursing program is accredited by:

Accrediting Commission for Education in Nursing
3390 Peachtree Road NE, Suite 1400 Atlanta
GA 30326 (404) 975-5000
www.acenursing.org

The most recent accreditation decision made by the ACEN Board of Commissioners for the registered nursing program is Continuing Accreditation.

LPN to RN, AAS

This three semester option is designed to prepare the Licensed Practical Nurse for licensure as a Registered Nurse. The option 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.

Application to LPN to RN Advanced Standing Option

- 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 Option

Admission criteria must be met in order to obtain a seat in the nursing program. Once admitted through the nursing admission process, students are given the first available seat in the nursing program.

Admission criteria includes:

- LPN program certificate
- Practical Nursing License in the State of Ohio without restrictions
- College $\geq$ 2.50
- 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 RN Percentile Rank score $\geq$ 50 on each of 3 sections
- Completion of the following college courses or their equivalent, with a "C" grade or better
    - BIO 231 - Anatomy & Physiology I
    - BIO 232 - Anatomy & Physiology II
    - PSY 230 - Lifespan Development
    - PSY 110 - General Psychology
    - ENG 111 - Composition I
    - BIO 131 - Nutrition
- Work experience: six months continuous practical 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 nursing cohort.

Following acceptance into the program, and prior to beginning NRS231 clinical students must meet health and immunization requirements and obtain CPR by taking the American Heart Association professional level BLS. A

BCI/FBI criminal background check must be completed 6 to 8 weeks prior to beginning the program. A drug screen is prior to beginning the program. Students must submit all requirements by due dates to retain their seats in the nursing program.

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.

Pre-Requisite Courses

- ENG 111 - Composition I **Min Credits: 3**
- PSY 110 - General Psychology **Min Credits: 3**
- BIO 231 - Anatomy & Physiology I **Min Credits: 4**
- BIO 131 - Nutrition **Min Credits: 3**
- PSY 230 - Lifespan Development **Min Credits: 3**
- BIO 232 - Anatomy & Physiology II **Min Credits: 4**

Total Credits: 20

First Semester

- NRS 230 - Transition to Professional Concepts in Nursing **Min Credits: 2** +
- NRS 231 - Transition to Health/Illness Concepts II **Min Credits: 5** +
- BIO 234 - Human Disease **Min Credits: 3**
- Advance Placement Credit (Upon completion of NRS 230/NRS 231) **Min Credits: 10**

Total Credits: 20

Second Semester

- NRS 240 - Professional Concepts III **Min Credits: 1** +
- NRS 241 - Health/Illness Concepts III **Min Credits: 8** +
- BIO 257 - Microbiology **Min Credits: 4**

Total Credits: 13

Third Semester

- NRS 242 - Professional Concepts IV **Min Credits: 1**
- NRS 243 - Health/Illness Concepts IV **Min Credits: 8** +
- STA 120 - Introduction to Statistics **Min Credits: 3**

Total Credits: 12

Total Program Hours 65

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

Optional Nursing Courses:

- NRS 105 - Math for Nurses **Min Credits: 1**
- NRS 133 - Cardiopulmonary Resuscitation **Min Credits: 1**
- NRS 150 - Concepts in End of Life Care **Min Credits: 1**

Registered Nursing, AAS

The Registered Nursing Program prepares students to be lifelong learners who deliver holistic patient-centered care in a variety of healthcare settings. There are two options to obtain the degree: Traditional Option and LPN-to-RN Option.

The traditional option encompasses four semesters of nursing courses.

The LPN-to-RN Option has three semesters of nursing courses.

Admission to the RN program

Admission criteria must be met in order to obtain a seat in the nursing program. Once admitted through the nursing admission process, students are given the first available seat in the nursing program.

Courses required for admission to the Registered Nursing program, including developmental courses, cannot be repeated for a satisfactory grade more than one time.

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
- NLN Preadmission Exam (PAX) with a RN Percentile Rank score $\geq$ 50 on each of 3 sections
- Completion of the following college courses with a "C" grade or better:
    - ENG 111 - Composition I
    - PSY 110 - General Psychology
    - BIO 231 - Anatomy & Physiology I
- Age of 18 years or older when enrolled in clinical nursing courses

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 nursing cohort.

Following acceptance into the program and prior to starting the first clinical course, students must meet health and immunization requirements and obtain CPR by taking the American Heart Association professional level BLS and be a certified state tested nursing assistant- STNA. A criminal background check must be completed 6 to 8 weeks prior to beginning the program. A drug screen is required prior to beginning the nursing program. Students must submit all requirements by due dates to retain their seats in the nursing program.

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.

Career Outlook for RNs

Employment of registered nurses is projected to increase 9 percent from 2020 to 2030. Factors stimulating growth for registered nurses include (1) an increased emphasis on preventive care; (2) increased rates of chronic conditions, such as diabetes and obesity; and (3) demand for healthcare services for an aging population.

Fall Schedule

Pre-Requisite Courses

- ENG 111 - Composition I **Min Credits: 3**
- BIO 231 - Anatomy & Physiology I **Min Credits: 4**
- PSY 110 - General Psychology **Min Credits: 3**

Total Credits: 10

Fall Semester

- NRS 140 - Professional Concepts I **Min Credits: 1** +
- NRS 141 - Health and Illness Concepts I **Min Credits: 6** +
- NRS 144 - Pharmacology **Min Credits: 2** +
- BIO 232 - Anatomy & Physiology II **Min Credits: 4**

Total Credits: 13

Spring Semester

- NRS 142 - Professional Concepts II **Min Credits: 1** +
- NRS 143 - Health and Illness Concepts **Min Credits: 7** +
- BIO 234 - Human Disease **Min Credits: 3**
- BIO 131 - Nutrition **Min Credits: 3**

Total Credits: 14

Fall Semester

- NRS 240 - Professional Concepts III **Min Credits: 1** +
- NRS 241 - Health/Illness Concepts III **Min Credits: 8** +
- BIO 257 - Microbiology **Min Credits: 4**
- PSY 230 - Lifespan Development **Min Credits: 3**

Total Credits: 16

Spring Semester

- NRS 242 - Professional Concepts IV **Min Credits: 1** +
- NRS 243 - Health/Illness Concepts IV **Min Credits: 8** +
- STA 120 - Introduction to Statistics **Min Credits: 3**

Total Credits: 12

Total Program Hours 65

Spring Schedule

Pre-Requisite Courses

- ENG 111 - Composition I **Min Credits: 3**
- BIO 231 - Anatomy & Physiology I **Min Credits: 4**
- PSY 110 - General Psychology **Min Credits: 3**

Total Credits: 10

Spring Semester

- NRS 140 - Professional Concepts I **Min Credits: 1** +
- NRS 141 - Health and Illness Concepts I **Min Credits: 6** +
- NRS 144 - Pharmacology **Min Credits: 2** +
- BIO 232 - Anatomy & Physiology II **Min Credits: 4**

Total Credits: 13

Fall Semester

- NRS 142 - Professional Concepts II **Min Credits: 1** +
- NRS 143 - Health and Illness Concepts **Min Credits: 7** +
- BIO 234 - Human Disease **Min Credits: 3**
- BIO 131 - Nutrition **Min Credits: 3**

Total Credits: 14

Spring Semester

- NRS 240 - Professional Concepts III **Min Credits: 1** +
- NRS 241 - Health/Illness Concepts III **Min Credits: 8** +
- BIO 257 - Microbiology **Min Credits: 4**
- PSY 230 - Lifespan Development **Min Credits: 3**

Total Credits: 16

Fall Semester

- NRS 242 - Professional Concepts IV **Min Credits: 1** +
- NRS 243 - Health/Illness Concepts IV **Min Credits: 8** +
- STA 120 - Introduction to Statistics **Min Credits: 3**

Total Credits: 12

Total Program Hours 65

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.

The nursing core courses must be taken in sequence, a minimum of four semesters is required.

Optional Nursing Courses:

- NRS 100 - Nurse Aide Certificate **Min Credits: 4**
- NRS 105 - Math for Nurses **Min Credits: 1**
- NRS 133 - Cardiopulmonary Resuscitation **Min Credits: 1**
- NRS 150 - Concepts in End of Life Care **Min Credits: 1**

Practical Nursing, Certificate

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.

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. Once admitted through the nursing admission process, students are given the first available seat in the nursing program.

Admission criteria includes:

- High school graduate or GED
- College GPA $\geq$ 2.25
- Test into college level English, Math, and reading per ACT or ACCUPLACER or take recommended courses
- High school Biology and Chemistry with labs with a final grade of "C" or "C" from an unaccredited high school and an ACT science score $\geq$ 20, or BIO 101 or equivalent college course with "C" or better

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 nursing cohort.

Following acceptance into the program and prior to beginning PNE 120 clinical, students must meet health and immunization requirements and obtain CPR by taking the American Heart Association CPR Professional Level BLS and be a state tested certified nursing assistant- STNA. A BCI/FBI criminal background check must be completed 6 to 8 weeks prior to beginning the program. A drug screen is prior to beginning the program. Students must submit all requirements by due dates to retain their seats in the Nursing program.

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.

Career Outlook for LPNs

Employment of licensed practical nurses is projected to increase 9 percent from 2020 to 2030. Factors stimulating growth for licensed practical nurses include (1) an increased emphasis on healthcare delivery in the home; and (2) increased residential care for aging population.

Fall Start Course Sequence

Fall Semester

- BIO 150 - The Human Body **Min Credits: 4**
  or
- BIO 232 - Anatomy & Physiology II **Min Credits: 4** *
- ENG 111 - Composition I **Min Credits: 3**
- PNE 120 - Essentials Practical Nursing **Min Credits: 8** +
- PSY 110 - General Psychology **Min Credits: 3**

Total Credits: 18

Spring Semester

- PSY 230 - Lifespan Development **Min Credits: 3**
- PNE 119 - Pharmacology **Min Credits: 3** +
- PNE 121 - Nursing Care Mother/Newborn **Min Credits: 2.5** +
- PNE 122 - Nursing Care of the Child **Min Credits: 2.5** +
- PNE 123 - Nursing Care: Adults I **Min Credits: 4.5** +

Total Credits: 15.5

Summer Semester

- PNE 124 - Nursing Care: Adults II **Min Credits: 5.5** +
- BIO 131 - Nutrition **Min Credits: 3**

Total Credits: 8.5

Total Program Hours 42

Spring Start Course Sequence

Spring Semester

- BIO 150 - The Human Body **Min Credits: 4**
  or
- BIO 232 - Anatomy & Physiology II **Min Credits: 4** *
- ENG 111 - Composition I **Min Credits: 3**
- PNE 120 - Essentials Practical Nursing **Min Credits: 8** +
- PSY 110 - General Psychology **Min Credits: 3**

Total Credits: 18

Summer Semester

- PNE 117 - Pharmacology I **Min Credits: 1.5** +
- PNE 123 - Nursing Care: Adults I **Min Credits: 4.5** +

Total Credits: 6

Fall Semester

- BIO 131 - Nutrition **Min Credits: 3**
- PNE 118 - Pharmacology II **Min Credits: 1.5**
- PNE 121 - Nursing Care Mother/Newborn **Min Credits: 2.5** +
- PNE 122 - Nursing Care of the Child **Min Credits: 2.5** +
- PNE 124 - Nursing Care: Adults II **Min Credits: 5.5** +
- PSY 230 - Lifespan Development **Min Credits: 3**

Total Credits: 18

Total Program Hours 42

PNE 117, PNE 118 are the equivalent of PNE 119.

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 Option of the Associate Degree Program

Prerequisite for BIO 232 is BIO 231 in a preceding semester; equivalent of BIO 101 - Principles of Biology or high school Biology and Chemistry with a "C" or better is required, CHM 101 - Principles of Chemistry strongly recommended.

+ Refers to technical coursework

Optional Nursing Courses:

The PN program has been designed to facilitate articulation into the LPN to RN Advanced Standing Program. Instead of BIO 150 - The Human Body, students who are planning to articulate to the Advanced Standing Program may choose to take BIO 231 - Anatomy & Physiology I and BIO 232 - Anatomy & Physiology II. When the two semester sequence of A & P is chosen, BIO 231 must be taken prior to entrance into the PN clinical courses.

- NRS 100 - Nurse Aide Certificate **Min Credits: 4**
- NRS 105 - Math for Nurses **Min Credits: 1**
- NRS 133 - Cardiopulmonary Resuscitation **Min Credits: 1**
- NRS 150 - Concepts in End of Life Care **Min Credits: 1**
- PNE 105 - Effective Communication Skills **Min Credits: 1**

Medical Assisting, AAS

Medical assistants are multi-skilled allied health professionals specifically trained to work in hospitals and ambulatory care 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.

Career Outlook

Employment of medical assistants is projected to grow 18 percent from 2020 to 2031, much faster than the average for all occupations.

Performance Standards

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. Describe the structure and function of the human body and recognize common disorders associated with each body system.
2. Demonstrate competence in clinical duties associated with assisting healthcare providers 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 equipment and facility maintenance.
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 duties and maintaining accurate 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 MTH090 level or successful completion of MTH090.
- 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+ First Aid
BCI/FBI Background Check
Health Insurance Coverage
Medical/Immunization Form
Signed Confidentiality Statement
Clinical agencies may require a drug screen with negative results.

Note: Students shall not receive compensation or payment, monetary or otherwise, for the externship/practicum experience.

Accreditation

The Medical Assisting program is Accredited by the Commission on Accreditation of Allied Health Programs (CAAHEP), upon the recommendation of the Medical Assisting Review Board (MAERB).

Commission on Accreditation of Allied Health Education Programs (CAAHEP)
9355 - 113th St. N., #7709
Seminole, FL 33775
(727) 210- 2350
www.caahep.org

Fall Semester

- ENG 111 - Composition I **Min Credits: 3**
- BIO 150 - The Human Body **Min Credits: 4**
- OAS 180 - Medical Terminology **Min Credits: 3**
- MEA 105 - Laboratory Techniques **Min Credits: 3** +
- MTH 105 - Quantitative Reasoning **Min Credits: 4**
  or
- MTH 109 - College Algebra **Min Credits: 3**

Total Credits: 16-17

Spring Semester

- MEA 205 - Disease Conditions **Min Credits: 3** +

- MEA 110 - Pharmacology for a Allied Health Professional **Min Credits: 3** +
- MEA 283 - Computerized Medical Insurance **Min Credits: 3** +
- MEA 227 - Diagnostic Coding **Min Credits: 3** +
- MEA 101 - Medical Assisting Clinical I **Min Credits: 3** +

Total Credits: 15

Fall Semester

- OAS 111 - Electronic Health Records **Min Credits: 3**
- MEA 201 - Medical Assisting Clinical II **Min Credits: 3** +
- CIS 114 - Microsoft Applications **Min Credits: 3**
- MEA 108 - Administrative Medical Office **Min Credits: 3** +
- MEA 228 - Procedural Coding **Min Credits: 3** +

Total Credits: 15

Spring Semester

- MEA 203 - Medical Assisting Externship **Min Credits: 6**
- SSC 210 - Cultural Diversity **Min Credits: 3**
  or
- HST 105 - Cultural Competence w/Diverse Populations **Min Credits: 3**
- PSY 110 - General Psychology **Min Credits: 3**
  ELECTIVE Humanities Elective **Min Credits: 3**

Total Credits: 15

Total Program Hours 61-62

* See Northwest State Core Requirements for a list of Humanities Electives.

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

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."

Background Check

A positive criminal background check or drug screen requires a conference with the Dean of Nursing & Allied Health to determine whether the student can be admitted and/or continue in the Medical Assisting Program.

Phlebotomy Technician, Short-Term Certificate

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.

Career Outlook

Employment of phlebotomists is projected to grow 22 percent from 2020 to 2030, much faster than the average for all occupations. Hospitals, diagnostic laboratories, blood donor centers, and other locations will need phlebotomists to perform bloodwork.

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.

First Semester

- BIO 150 - The Human Body **Min Credits: 4** *
- OAS 180 - Medical Terminology **Min Credits: 3**
- MEA 105 - Laboratory Techniques **Min Credits: 3** +
- MEA 108 - Administrative Medical Office **Min Credits: 3** +

Total Credits: 13

Second Semester

- CIS 114 - Microsoft Applications **Min Credits: 3**
- ENG 111 - Composition I **Min Credits: 3**
- MEA 207 - Phlebotomy Externship **Min Credits: 6** +

Total Credits: 12

Total Program Hours 25

*Prerequisite requirement:

BIO 101 if no high school Biology & Chemistry with a grade of “C” or better.
Demonstrated proficiency at the level of MTH085 Math Literacy by placement test score or successful completion of the course.
Students must maintain a minimum grade of "C" in all courses to progress in the program and graduate.

Program Requirements Prior to Externship:

American Heart Association Healthcare Provider CPR + First Aid
BCI/FBI Background Check
Health Insurance Coverage
Health Physical & Immunization Form Confidentiality Statement
Clinical agencies may require a drug screen with negative results.

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

* Prerequisite requirement: BIO 101 or high school Biology and Chemistry with a grade of "C" or better.

Northwest Ohio Allied Health Education Consortium

This initiative brings five institutions of higher education in Northwest and West Central Ohio into partnership to share existing Allied Health programs. The partner schools are Northwest State Community College, Terra 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 teleconferencing, 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.

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.

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).

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

Skillful 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).

Course Descriptions

ACC 090 - Introduction to Accounting

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

ACC 111 - Financial Accounting

Min Credits: 3

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).

Lecture: 3 **Lab:** 0

ACC 112 - Managerial Accounting

Min Credits: 3

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).

Lecture: 3 **Lab:** 0
Prerequisite(s): ACC 111 with a "C" or better

ACC 120 - Payroll Accounting

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Co-requisite(s): ACC 090 or ACC 111, or ACC 102

ACC 140 - Individual Income Tax Accounting

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

ACC 211 - Intermediate Accounting I

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ACC 112 with a "C" or better

ACC 212 - Intermediate Accounting II

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ACC 211

ACC 221 - Cost Accounting I

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ACC 112 with a "C" or better

ACC 222 - Cost Accounting II

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ACC 221

ACC 230 - Auditing

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ACC 112 with a "C" or better

ACC 240 - Business Income Tax Accounting

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

ACC 260 - Accounting on Computers

Min Credits: 3

This course is a combination of ACC261 Quick Books, ACC271 Intermediate Quick Books, and ACC272 Advanced Quick Books and allows the student to extensively study the Quick Books 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.

Lecture: 2 **Lab:** 2
Prerequisite(s): ACC102 or ACC 111

ACC 291 - Accounting Internship

Min Credits: 3

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.

Lecture: 1 **Lab:** 20

AET 100 - Introduction to Alternative Energies

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 080

AET 110 - Energy Audit

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): AET 100 and IND 120 or EET 121

AET 120 - Wind Power

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Prerequisite(s): AET 100 and IND 120 or EET 121

AET 130 - Solar Thermal

Min Credits: 4

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. AET 110 - Energy Audit is recommended prior to or in addition to this class.

Lecture: 3 **Lab:** 2
Prerequisite(s): AET 100

AET 140 - Geothermal

Min Credits: 4

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. AET 110 - Energy Audit is recommended prior to or in addition to this class.

Lecture: 3 **Lab:** 2
Prerequisite(s): AET 100

AET 200 - Sustainable Building Design

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): AET 110

AET 220 - Solar Photovoltaics

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Prerequisite(s): AET 100 and IND 120 or EET 121

AET 230 - Hydrogen and Fuel Cell Technology

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Prerequisite(s): AET 100 and CHM 201

AET 240 - Biofuels

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Prerequisite(s): AET 100 and CHM 201

AET 290 - Alternative Energy Capstone

Min Credits: 4

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.

Lecture: 4 **Lab:** 0
Prerequisite(s): AET 110 and at least one other course with AET prefix

AGR 101 - Survey of Animal Agriculture

Min Credits: 3

Introductory course in the science and management of animal agriculture production systems and its products. Beef and dairy cattle, sheep, poultry, swine, and equine industries are primarily addressed. Students are introduced to the fundamentals of animal nutrition, reproduction, genetics, anatomy and physiology, and health topics. Management, industry practices, biotechnology and issues within the animal agriculture industry are emphasized.

Lecture: 3 **Lab:** 0

AGR 110 - Agronomy Principles

Min Credits: 3

An introduction to the principles of development, production, and management of field crops. The course provides basic concepts in soils, fertilizers, plant growth, plant diseases, insect and weed pests, production methods and management of agronomic systems. Emphasis is placed on developing soil health, nutrient management and conservation practices.

Lecture: 3 **Lab:** 0

AGR 120 - Introduction to Precision Agriculture

Min Credits: 3

Basic course in precision agriculture technology and applications with emphasis in agronomic systems. Provides an introduction to the field of precision agriculture, variability in agronomic conditions across space and time, global positioning systems, geographical information systems, unmanned aerial systems/vehicles, remote sensing, precision equipment, data management and use, and environmental applications.

Lecture: 3 **Lab:** 0

AGR 130 - Fundamentals of Soil Science

Min Credits: 4

An introduction to the principles of soil science that provides a study of the physical, chemical, and biological properties of soils and the how the interactions of these properties impact crop growth and development. Examination of the origin, classification and distribution of soils; conservation management; and environmental impact is covered with emphasis on agricultural production.

Lecture: 3 **Lab:** 2

AGR 140 - Introduction to Horticulture

Min Credits: 3

Introductory course in the science and management of horticulture production systems. Provides students basic concepts and skills utilized in horticulture disciplines including, ornamental horticulture, pomology, and olericulture and the associated technology and practices employed by the industry. Students are introduced to the scientific basis for horticultural practices, including morphology, anatomy, taxonomy, physiology, genetics, and propagation. Management, industry practices, biotechnology and issues within the horticultural industry are emphasized.

Lecture: 3 **Lab:** 0

AGR 210 - Sustainable Agronomy

Min Credits: 3

Fundamental course in crop production systems that explores the economic and environmental implications of sustainable agronomic systems. Covers topics in conservation practices, land use, nutrient management, water quality, agro-ecology, tillage systems in crop production, crop diversification, agronomic technology, economics and global food systems.

Lecture: 3 **Lab:** 0

AGR 215 - Introduction to Agricultural Economics & Agribusiness Management

Min Credits: 3

An introduction to the economics and business management practices of agricultural and food markets. This course will introduce students to important aspects of the agricultural economy, its structure and function, how agricultural markets work, the impact of public policy on agriculture economics, and the relationship between agribusiness and agriculture economics.

Lecture: 3 **Lab:** 0
Prerequisite(s): ECO 212

AGR 220 - Agricultural Meteorology & Climate

Min Credits: 3

Introductory course in meteorology that provides foundational knowledge of the structure of the atmosphere, meteorological measurements, air movement, air masses and fronts, severe weather, and climate. Application of meteorological principles to agriculture provide knowledge of the impact of weather and climate on agronomic systems.

Lecture: 3 **Lab:** 0

AGR 225 - Agricultural Analysis & Decision Making

Min Credits: 3

Applied course in agribusiness emphasizing analysis and decision making skills of existing agribusiness enterprises.

Using agricultural management software, students will apply management skills to actual agricultural businesses through analysis of real financial and production records. Students will determine a business's strengths and weaknesses and develop recommendations for improving the sustainability of the business. Through presentations from actual business owners, students will see the effect of implementing planned changes on a business. Students will participate in developing a business plan for an agricultural business.

Lecture: 3 **Lab:** 0
Prerequisite(s): AGR 215 and ACC 260

AGR 230 - Nutrient Management Principles

Min Credits: 3

Fundamental course in nutrient management practices in cropping systems that provides a study of plant macronutrient and micronutrient requirements; application and consideration of conventional, conservation, and organic systems; soil testing and fertilizer calculations; soil acidity and liming; environmental concerns and regulations, as well as basic nutrient management plan development.

Lecture: 3 **Lab:** 0

AGR 240 - Integrated Pest Management

Min Credits: 3

Introductory course in integrated pest management that provides foundational knowledge of the identification and management of insects, weeds and plant disease in agronomic systems. Application and consideration of biological, ecological and chemical control systems are covered, with topics including: insect, weed and disease identification; biologic controls and ecological principles in pest management; pesticide safety, regulations, pesticide modes of action, and application methods; pesticide equipment and calibration; and, basic integrated pest management strategies and management.

Lecture: 3 **Lab:** 0
Prerequisite(s): AGR 110

AGR 290 - Agriculture Practicum

Min Credits: 2 Max Credits: 4

Field-based learning experience combining the study, observation, and employment with an agricultural business, organization, or governmental agency. The practicum provides students the opportunity to apply skills, concepts and theories about agriculture in a practical context. The student, supervisor and college coordinator will develop an individualized practicum plan.

Lecture: 1 **Lab:** 7
Recommend: Coordinator permission

ART 103 - Beginning Drawing

Min Credits: 3

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).

Lecture: 0 **Lab:** 6

ART 210 - Oil/Acrylic Painting

Min Credits: 3

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).

Lecture: 0 **Lab:** 6

ART 220 - Beginning Sculpture

Min Credits: 3

A basic level studio sculpture course facilitating students' abilities to see and create three dimensional works of art. In this introductory class, clay, plasticine, 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.

Lecture: 0 **Lab:** 6

ATS 101 - Portfolio Development

Min Credits: 3

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. On demand with approval of the appropriate Dean.

Lecture: 3 **Lab:** 0

BAN 110 - Bank Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

BAN 210 - Credit Management

Min Credits: 3

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.

Lecture: 3

BAN 220 - Investment Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

BIO 100 - The World of Science

Min Credits: 3

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 CHM 100 and PHY 100). Course projects will be based on the course prefix chosen.

Lecture: 3 **Lab:** 0

BIO 101 - Principles of Biology

Min Credits: 4

An introduction to principles and concepts of life, including topics on cell biology, genetics, diversity of life, and ecology. Laboratory work reinforces lecture.

Lecture: 3 **Lab:** 2
Prerequisite(s): ENG 095 and MTH 080 or MTH 085

BIO 115 - Ecology

Min Credits: 4

An introduction to the field of ecology, including the organization, interrelationships and dynamitic 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.

Lecture: 3 **Lab:** 2
Prerequisite(s): High school biology or BIO 101 with a grade of "C" or better, and ENG 095, and MTH 080 or MTH 085

BIO 131 - Nutrition

Min Credits: 3

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).

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 095 and MTH 080 or MTH 085 or Course Placement Test Score

BIO 150 - The Human Body

Min Credits: 4

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.

Lecture: 4 **Lab:** 0
Prerequisite(s): BIO 101 or high school Biology with a grade of "C" or better, and ENG 095, and MTH 080 or MTH 085

BIO 175 - Review of Biology

Min Credits: 1

This course offers a review of college resources, a review of math, a review of scientific writing, and a review of cell biology. This course is specifically for those students who have had high school biology and chemistry with a "C" or better and are planning on taking a 200 level biology course but feel they need to review their skills. This course will not count towards graduation requirements or as an elective substitute.

Lecture: 1 **Lab:** 0
Prerequisite(s): High school biology and chemistry with a "C" or better and ENG 095 and MTH 080 or MTH 085

BIO 201 - General Biology I

Min Credits: 4

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).

Lecture: 3 **Lab:** 3
Prerequisite(s): BIO 101 or high school Biology with a grade of "C" or better, and ENG 095, and MTH 080 or MTH 085

BIO 202 - General Biology II

Min Credits: 4

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).

Lecture: 3 **Lab:** 3
Prerequisite(s): BIO 201 with a grade of "C" or better or instructors permission

BIO 231 - Anatomy & Physiology I

Min Credits: 4

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.

Lecture: 3 **Lab:** 3
Prerequisite(s): ENG 095 and MTH 080 or MTH 085; high school Biology and Chemistry with a "C" or better within the last five years, or BIO 175 with a "C" or better, or BIO 101 with a "C" or better, or BIO 201 with a "C" or better, or instructor permission

BIO 232 - Anatomy & Physiology II

Min Credits: 4

A continuation of BIO 231, 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.

Lecture: 3 **Lab:** 3
Prerequisite(s): BIO 231 with a "C" or better within the last five years or instructor permission

BIO 234 - Human Disease

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): BIO 232 with a "C" or better within the last five years or instructor permission

BIO 250 - Genetics

Min Credits: 4

This course is an introduction to genetics for natural science and lab science majors. It includes the nature of genetic

materials, transmission and patterns of inheritance, molecular biology of gene function, gene expression and regulation, genetic variation, evolution and population genetics, methods of comparative genetics and tools used by geneticists. The bioethical concerns surrounding modern DNA technology are discussed throughout the course.

Lecture: 3 **Lab:** 2
Prerequisite(s): BIO 201 with a grade of "C" or better

BIO 257 - Microbiology

Min Credits: 4

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.

Lecture: 3 **Lab:** 3
Prerequisite(s): BIO 234 with a "C" grade or better, or BIO 201 with a "C" grade or better within the last 5 years, or instructor permission

BUS 101 - Introduction to Business

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

BUS 211 - Business Communications

Min Credits: 3

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).

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111 and CIS 112 or CIS 114

BUS 221 - Business Law

Min Credits: 3

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).

Lecture: 3 **Lab:** 0

BUS 223 - Employment Law, Safety, & Security

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

BUS 250 - Labor Relations

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

CAD 112 - CAD II

Min Credits: 4

Students successfully completing this course will be proficient in basic Computer-Aided-Design through utilization of commercial CAD software. This course covers fundamental Window system commands, AutoCAD application commands, and utilizing printing equipment for finished projects. The goals are: 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 they come together in a final set of multiple part working drawings. Transfer Assurance Guide (TAG) approved effective summer 2008 (OET012 - CAD).

Lecture: 3 **Lab:** 3

CAD 213 - CAD III

Min Credits: 4

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 sold modeling design tool software. Transfer Assurance Guide (TAG) approved effective fall 2012 (OET021 - 3D Modeling).

Lecture: 3 **Lab:** 3
Recommend: MET 110

CET 100 - Construction Method/Materials

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

CET 115 - Project Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

CET 120 - Construction Material Testing

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Co-requisite(s): MTH 109

CET 200 - Surveying

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Co-requisite(s): MTH 112

CET 215 - Project Management II

Min Credits: 3

This course builds on the foundation of Project Management I within a context of ethics and professionalism. The

student will learn advanced project management (PM-3), leadership in teams (PM-4), and organization and behavior within projects (PM-5).

Lecture: 3 **Lab:** 0

CET 240 - Soils

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): MET 234 and MET 235

CHM 100 - The World of Science

Min Credits: 3

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 BIO 100 and PHY 100). Course projects will be based on the course prefix chosen.

Lecture: 3 **Lab:** 0

CHM 101 - Principles of Chemistry

Min Credits: 4

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.

Lecture: 3 **Lab:** 3

CHM 110 - Environmental Chemistry

Min Credits: 4

CHM110 is an introductory course covering the chemical basis for understanding our surroundings: Earth's environment. Environmental chemistry is the study of the distribution and interactions of matter (chemicals) in the environment. It deals with the reactions, fates, movements, and sources of chemicals in water, atmospheric, and soil systems. Basic chemistry principles, required to understand environmental chemical processes, will be the focus for this course. In addition, the environmental chemistry of water and wastewater treatment, and the impacts of human activity have on Earth's systems will be introduced. Laboratory exercises will be conducted weekly to reinforce the Environmental principles and develop analytical thinking and sound laboratory technique and practices.

Lecture: 3 **Lab:** 3

CHM 138 - Principles of Forensics

Min Credits: 4

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.

Lecture: 3 **Lab:** 2

CHM 201 - General Chemistry I

Min Credits: 5 Max Credits: 1 recitation

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).

Lecture: 3 **Lab:** 3
Prerequisite(s): MTH 090 or equivalent and CHM 101 or high school Chemistry in past 5 years

CHM 202 - General Chemistry II

Min Credits: 5 Max Credits: 1 recitation

A continuation of CHM 201, 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).

Lecture: 3 **Lab:** 3
Prerequisite(s): CHM 201 and MTH 109 with a grade of "C" or better or instructors permission

CHM 256 - Principles of Biochemistry

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): CHM 101 or equivalent

CIS 090 - Introduction to Computers

Min Credits: 1

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.

Lecture: 0 **Lab:** 2
Prerequisite(s): Course Placement Test available

CIS 104 - Desktop Management

Min Credits: 1

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.

Lecture: 0 **Lab:** 2
Prerequisite(s): CIS 090 and OAS 090 or Course Placement Test

CIS 112 - Microsoft Word

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): CIS 090 and OAS 090 or Course Placement Test

CIS 113 - Microsoft Excel

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): CIS 090 and OAS 090 or satisfactory score on Course Placement Test

CIS 114 - Microsoft Applications

Min Credits: 3

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).

Lecture: 2 **Lab:** 2
Prerequisite(s): CIS 090 and OAS 090 or satisfactory score on Course Placement Test

CIS 117 - Microsoft Publisher

Min Credits: 3

This course covers the concepts and applications of print and electronic publishing and website maintenance. Emphasis is placed on the creation of various types of high-quality documents. Upon completion, students should be able to design, produce, and maintain professional business publications.

Lecture: 3 **Lab:** 0
Prerequisite(s): CIS 112 or CIS 114

CIS 118 - Access

Min Credits: 1

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.

Lecture: 0 **Lab:** 2
Prerequisite(s): CIS 090

CIS 119 - Power Point

Min Credits: 1

This is a course designed for the beginner using PowerPoint, a presentation graphics program. Slide creation; use of graphics, charts, tables, and color to enhance slides; methods of automation, use of sound, and collaboration techniques will be areas of study. Hands on experience and the ability to demonstrate use of PowerPoint will be provided.

Lecture: 0 **Lab:** 1
Prerequisite(s): CIS 090

CIS 129 - Web Page Development

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): CIS 090 or equivalent

CIT 108 - Internet Scripting

Min Credits: 4

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.

Lecture: 3 **Lab:** 3

CIT 109 - Database Management

Min Credits: 4

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.

Lecture: 3 **Lab:** 3
Co-requisite(s): CIT 191

CIT 111 - Visual Basic Programming

Min Credits: 4

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.

Lecture: 3 **Lab:** 3

CIT 150 - Programming C++

Min Credits: 4

This is an introduction to structured programming using the ANSI 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.

Lecture: 3 **Lab:** 3

CIT 155 - Linux Networking I

Min Credits: 4

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.

Lecture: 3 **Lab:** 3
Co-requisite(s): CIT 191

CIT 161 - C#

Min Credits: 4

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.

Lecture: 3 **Lab:** 3

CIT 165 - Java Programming

Min Credits: 4

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.

Lecture: 3 **Lab:** 3

CIT 191 - Computer Operations

Min Credits: 3

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 Comp TIAA+ Certification Exams.

Lecture: 2 **Lab:** 3

CIT 192 - Microsoft Workstation Technology

Min Credits: 3

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.

Lecture: 2 **Lab:** 3
Co-requisite(s): CIT 191

CIT 193 - Microsoft Server Technology

Min Credits: 3

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.

Lecture: 2 **Lab:** 3
Co-requisite(s): CIT 191

CIT 194 - IT Security Fundamentals

Min Credits: 3

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 Comp TIA Security+ Certification Exams.

Lecture: 2 **Lab:** 3
Co-requisite(s): CIT 191

CIT 195 - Networking Essentials

Min Credits: 3

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 Comp TIA Network+ exam. This course includes hands on laboratory assignments.

Lecture: 2 **Lab:** 3

CIT 196 - Introduction to Cloud Computing

Min Credits: 3

This course will introduce students to the core concepts of cloud computing. Students will learn when to use different types of cloud computing models and cloud storage types. Students will learn about cloud networking concepts. Students will gain a basic understanding of cloud security. Students will be introduced to common public cloud pricing models. Students will complete multiple lab projects intended to reinforce the learning topics covered.

Lecture: 2 **Lab:** 3

CIT 202 - Mobile Application Programming

Min Credits: 3

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 creati

Lecture: 2 **Lab:** 3
Prerequisite(s): CIT 193

CIT 255 - Linux Networking II

Min Credits: 4

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.

Lecture: 3 **Lab:** 3
Prerequisite(s): CIT 155

CIT 265 - Java Programming II

Min Credits: 3

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.

Lecture: 2 **Lab:** 3
Prerequisite(s): CIT 165

CIT 284 - Microsoft Infrastructure Technology

Min Credits: 3

This course teaches the basic and advanced concepts needed to manage a Microsoft Infrastructure Services such as DNS, DHCP and emote Access Services. This course makes extensive use of lab projects to reinforce essential concepts.

Lecture: 2 **Lab:** 3
Co-requisite(s): CIT 193

CIT 285 - Microsoft Directory Services Technology

Min Credits: 3

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.

Lecture: 2 **Lab:** 3
Co-requisite(s): CIT 193

CIT 290 - Information Technology Internship

Min Credits: 1

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.

Lecture: 1 **Lab:** 20

CYB 190 - Introduction to Programming

Min Credits: 3

This course covers introductory topics to programming. This course will use Python. Introductory topics are Python installation, Python documentation, package management (pip) in Python, using variables, variable types, conditional operators (decision making), iteration, string formatting, proper handling of user input, functions, exceptions, and object oriented programming (OOP) including properties and methods.

Lecture: 3 **Lab:** 0

CYB 210 - Cybersecurity Programming

Min Credits: 3

This course will teach students how to apply programming principles learned in other classes to create functional solutions. These solutions might be used to automate security tasks, support a secure infrastructure, or perform other security functions. This course will teach students to apply SDL (Secure Development Lifecyle) principles to their programming projects. Students will complete multiple lab projects intended to reinforce the learning topics covered.

Lecture: 2 **Lab:** 3
Prerequisite(s): EET 107

CYB 220 - Security Auditing

Min Credits: 3

This course is NOT a hacker "how-to". This course covers the topics of penetration testing and vulnerability assessment. This course focuses on the appropriate tools and methodologies necessary to test and assess an organization's security posture. Topics will include historical security incidents, current security incidents, the responsibilities and ethics of performing penetration tests and vulnerability assessments, and techniques of the trade.

Lecture: 2 **Lab:** 3
Co-requisite(s): CIT 194

CYB 230 - Network Security

Min Credits: 3

This course will introduce students to the concepts of network security. Students will learn to install and configure Intrusion Prevention Systems (IPS), Intrusion Detection Systems (IDS), firewalls, log managers, and network monitoring software. Students will become familiar with network security design best practices. Students will complete multiple lab projects intended to reinforce the learning topics covered.

Lecture: 2 **Lab:** 2
Prerequisite(s): CIT 195
Co-requisite(s): CIT 194

CJT 130 - Principles of Criminal Justice

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

CJT 134 - Criminal Law

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

CJT 136 - Juvenile Delinquency Principle

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): CJT 130

CJT 140 - Constitutional Law

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

CJT 220 - Law Enforcement in American Society

Min Credits: 3

Overview of the police role in modern American society; emphasis on problems and issues confronting police and solutions within an organizational framework.

Lecture: 3 **Lab:** 0
Prerequisite(s): CJT 130

CJT 230 - Corrections

Min Credits: 3

A survey of the general field of corrections, including the institutions and resources which are used. A historical overview of corrections is explored.

Lecture: 3 **Lab:** 0
Co-requisite(s): CJT 130

CJT 240 - Criminal Evidence & Procedure

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): CJT 130

CJT 242 - Probation & Parole

Min Credits: 3

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 verses 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.

Lecture: 3 **Lab:** 0
Prerequisite(s): CJT 130

CJT 244 - Criminal Investigation

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Prerequisite(s): CJT 130 and CJT 134

CJT 246 - Technical Skills for Officers

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): Admission to Law Enforcement Academy

CJT 252 - Seminar in Criminal Justice

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): CJT 130

CJT 281 - Vehicle Patrol Traffic Enforcement

Min Credits: 4

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.

Lecture: 3 **Lab:** 3
Prerequisite(s): Admission to Law Enforcement Academy

CJT 282 - Firearms/Driving

Min Credits: 4

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.

Lecture: 2 **Lab:** 6
Prerequisite(s): Admission to Law Enforcement Academy

CJT 283 - Defensive Tactics/Physical Fit

Min Credits: 3

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.

Lecture: 1 **Lab:** 6
Prerequisite(s): Admission to Law Enforcement Academy

CJT 284 - Human Conditions

Min Credits: 4

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.

Lecture: 3 **Lab:** 3
Prerequisite(s): Admission to Law Enforcement Academy

CJT 289 - Special Topics CJ Professional

Min Credits: 1

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.

Lecture: 1 **Lab:** 0
Prerequisite(s): CJT 132, CJT 136, CJT 230, and CJT 240
Co-requisite(s): CJT 242, CJT 244, and HST 214

CJT 290 - Criminal Justice Practicum

Min Credits: 4

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.

Lecture: 3 **Lab:** 8
Prerequisite(s): CJT 136, CJT 230, and CJT 240

DBP 110 - ICDL Computer Technologies

Min Credits: 1

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 certificate.

Lecture: 0 **Lab:** 2

DBP 121 - Computer Systems II

Min Credits: 3

This course moves beyond the PC application environment and focuses on client-server systems and software development. The student will learn two models for the software development lifecycle as well as foundational programming concepts such as data types and variables. The student will also be exposed to a variety of client and server environments. Introduction to both cloud computing and open source applications are included in this program.

Lecture: 2 **Lab:** 2

DBP 130 - IT Customer Service & Communication

Min Credits: 3

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 e-mail 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.

Lecture: 2 **Lab:** 0

DBP 150 - Database Basics

Min Credits: 3

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).

Lecture: 2 **Lab:** 2

DBP 205 - Discrete Structures

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): DBP 110

DBP 210 - Computer Programming I

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): DBP 205

DBP 220 - Database Reporting

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): DBP 150

DBP 225 - Computer Programming II

Min Credits: 3

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 stand alone 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.

Lecture: 2 **Lab:** 2
Prerequisite(s): DBP 210

ECD 150 - Infant & Toddler Development

Min Credits: 3

This course engages participants in exploration and discussion about high-quality care giving and developmentally appropriate practices when engaging with infants and toddlers and their families. The importance of quality environments that support development, language and literacy, family engagement, advocacy, positive guidance, and professionalism are discussed as they relate to required standards and the care of infants and toddlers.

Lecture: 3 **Lab:** 0

ECD 190 - Fundamentals of Early Childhood

Min Credits: 3

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.

Lecture: 2 **Lab:** 3

ECD 201 - Pre K Curriculum & Methods

Min Credits: 3

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 six 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.

Lecture: 2 **Lab:** 6
Prerequisite(s): ECD100, EDU 150, ECD 190
Co-requisite(s): EDU 120

ECD 270 - Special Topics in ECD

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): Determined by ECD Coordinator's recommendation

ECD 280 - Child Care Field Experience

Min Credits: 3

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.

Lecture: 1 **Lab:** 4
Prerequisite(s): Determined by ECD Coordinator's recommendation

ECD 290 - Pre K Practicum

Min Credits: 3

This is the capstone field experience of the Pre-Kindergarten associate degree program referred to as student teaching. Planning and carrying out specific teaching experiences requires participation in an early childhood learning program. Principles are assimilated through practical experiences with an established group of 3-5 year old children and a mentor teacher. All students complete a 200 hour placement in a Pre-Kindergarten classroom for the semester. To be

recommended for the ODE Pre-Kindergarten Associate License, students must achieve a grade of B or higher, meet passing score of state of Ohio required assessment, and demonstrate that any remaining coursework in the degree program can be completed within 6 months of completing ECD 290.

Lecture: 1 **Lab:** 14
Prerequisite(s): ECD 190, EDU 100, EDU 150, EDU 220, EDU 230, ECD 201 with a grade of "B" or higher, EDU 120, EDU 180, EDU 140, EDU 240, EDU 210, EDU 270 with a grade of "B" or higher, Student must demonstrate that the PreK Associate Degree can be completed within 6 months of completing practicum
Co-requisite(s): EDU 250, EDU 260

ECO 211 - Macroeconomics

Min Credits: 3

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).

Lecture: 3 **Lab:** 0

ECO 212 - Microeconomics

Min Credits: 3

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).

Lecture: 3 **Lab:** 0

EDP 160 - Introduction to Paraprofessional Education

Min Credits: 3

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.

Lecture: 2 **Lab:** 3

EDP 202 - Supporting Children w Severe Disabilities

Min Credits: 3

This course focuses on the role of the paraprofessional learning how to work with, communicate, assist, and guide students with severe disabilities in a classroom setting (K-12). Participation in a special education classroom for students with severe disabilities (determined with the instructor) for 3 hours a week (45 hours total) will give students the opportunity to engage with students with severe disabilities as well as instructors and other paraprofessionals while acting as a paraprofessional throughout the lab experience.

Lecture: 2 **Lab:** 3
Prerequisite(s): EDP 160 with a grade of "B" or higher, EDU 100, EDU 150
Co-requisite(s): EDU 220

EDP 290 - Paraprofessional Internship

Min Credits: 2

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, who support the delivery of instruction for all children (preschool-grade 12) especially those students considered at risk. General duties include assisting teachers working one on one with students, and performing clerical work for teacher as needed.

Lecture: 0 **Lab:** 14
Prerequisite(s): EDP 160, EDU 100, EDU 150, EDP200 with a grade of "B" or higher, EDU 220, EDU 230, EDU 120, EDU 240, EDU 210, EDU 270 with a grade of "B" or higher, EDU 140, EDU 180, PSY 230
Co-requisite(s): EDU 250, EDU 260

EDU 100 - Introduction to Teaching

Min Credits: 3

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)

Lecture: 3 **Lab:** 0

EDU 120 - Guidance & Classroom Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): PSY 110

EDU 140 - Strategies/Teaching Reading

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): EDU 100

EDU 150 - Child Development I

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

EDU 180 - Health, Safety, and Nutrition

Min Credits: 2

In this course, students will examine and discuss content and issues related to the health, safety, and nutrition of young children birth through age 8. Students will explore information that relates to the development of safe learning environments, healthy nutrition, and other positive interactions that support optimal growth and development for young children. Ways to engage the family in supporting these practices as well as licensing rules and information about required training will be included.

Lecture: 2 **Lab:** 0

EDU 210 - Creative Arts Curriculum

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): EDU 100

EDU 220 - Special Education

Min Credits: 3

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).

Lecture: 3 **Lab:** 0
Co-requisite(s): EDU 100

EDU 230 - Family, School & Community

Min Credits: 3

This course explores educational considerations for teachers including the policies, theories, practices, skills, and knowledge of home, school, and community partnerships. Candidates 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. Transfer Assurance Guide (TAG) approved effective spring 2013 (OED006 - Families, Communities, Schools).

Lecture: 3 **Lab:** 0
Prerequisite(s): EDU 100

EDU 240 - Educational Psychology

Min Credits: 3

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).

Lecture: 3 **Lab:** 0
Prerequisite(s): PSY 110

EDU 250 - Education Seminar

Min Credits: 2

This end of program course meets once a week placing ECD 290 and EDP 290 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.

Lecture: 2 **Lab:** 0
Prerequisite(s): Permission by Education Department
Co-requisite(s): ECD 290 or EDP 290, EDU 260

EDU 260 - Instructional Technology

Min Credits: 3

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. Transfer Assurance Guide (TAG) approved effective fall 2005 (OED002 - Educational Technology).

Lecture: 2 **Lab:** 2
Prerequisite(s): EDU 100

EDU 270 - Cultural & Linguistic Diversity

Min Credits: 3

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 and culturally diverse learners. A field experience consisting of 45 hours will be tailored to the students' program of study.

Lecture: 2 **Lab:** 3
Prerequisite(s): ECD 190, EDP 160, EDU 150, EDU 120, EDU 230, PSY 110
Co-requisite(s): EDU 220, EDU 240

EET 107 - Python Programming

Min Credits: 3

This course teaches common programming topics using the Python programming language. Topics covered include programming technology, the proper use of variables, input/output techniques, basic decisions, loops, lists, objects, and more. Students will complete multiple lab projects intended to reinforce the learning topics covered.

Lecture: 2 **Lab:** 3

EET 121 - DC Circuits

Min Credits: 3

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).

Lecture: 2 **Lab:** 3
Prerequisite(s): MTH 090

EET 122 - AC Circuits

Min Credits: 3

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).

Lecture: 2 **Lab:** 3
Prerequisite(s): EET 121

EET 221 - Digital Circuits

Min Credits: 4

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).

Lecture: 3 **Lab:** 3
Prerequisite(s): MTH 090

EET 231 - Microprocessors

Min Credits: 4

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.

Lecture: 2 **Lab:** 3
Prerequisite(s): EET 221

EET 240 - Engineering Programming

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): MTH 090

EET 272 - Networking I

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): MTH 090

EET 277 - Industrial Electronics

Min Credits: 3

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).

Lecture: 2 **Lab:** 2
Prerequisite(s): IND 120

EET 282 - Networking II

Min Credits: 3

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 and network programming. The course is mix of classroom learning and hands-on laboratory using real networking equipment.

Lecture: 2 **Lab:** 2
Prerequisite(s): CIT 195

EET 289 - Systems Integration

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): PLC 200 and IND 134

EMS 102 - EMT Basic I

Min Credits: 4

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.

Lecture: 3 **Lab:** 2

EMS 103 - EMT Basic II

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): EMS 102

EMS 202 - EMT Advanced I

Min Credits: 5

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.

Lecture: 4 **Lab:** 2
Prerequisite(s): EMS 102, EMS 103, and Current Ohio EMT-Basic Certification

EMS 203 - EMT Advanced II

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): EMS 202

ENG 095 - Integrated College Reading & Writing

Min Credits: 4

This course 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.

Lecture: 4 **Lab:** 0

ENG 099 - Writing Skills Workshop

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

ENG 111 - Composition I

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 090, ENG 095 or satisfactory score on Course Placement Test

ENG 112 - Composition II

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111 with grade of "C" or better

ENG 113 - Speech

Min Credits: 3

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).

Lecture: 3 **Lab:** 0

ENG 210 - Technical Communications

Min Credits: 3

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 information.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111

ENG 214 - Discussion & Conference Method

Min Credits: 3

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).

Lecture: 3 **Lab:** 0

ENG 217 - Introduction to Creative Writing

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111 with "C" or better

ENG 223 - Interpretation of Literature

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111

ENG 230 - Children's Literature

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111

ENG 240 - Introduction to Poetry

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111

ENG 241 - Introduction to Fiction

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111

ENG 250 - American Literature I

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111

ENG 251 - American Literature II

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111

ENG 260 - British Literature I

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111

ENG 261 - British Literature II

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ENG 111

GSD 100 - Success Seminar

Min Credits: 1

This course is intended for college students of any age who want to create success both in college and life. Throughout this course, students learn essential academic and life skills as well as self-empowering techniques and strategies. Required course for students who test into either MTH 050 or MTH 080 and either ENG080 or ENG090; required for students on Academic Probation; required for students returning from Academic Suspension. This course is open to any student and could be used as 1 credit General Studies elective.

Lecture: 1 **Lab:** 0

GSD 120 - Career and Life Planning

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

HIS 101 - U.S. History Pre-1876

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

HIS 102 - U.S. History Post-1876

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

HIS 203 - U.S. Since 1945

Min Credits: 3

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 l945. Topics include the New Deal, the Cold War, confronting the Third World, struggles for equality, and mass media effects on popular culture. Writing Intensive.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

HIS 210 - The Modern World

Min Credits: 3

This course joins a study of the history of the modern world with students' understanding of their place is 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 thirteenth century to the present times. Writing Intensive.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

HPF 106 - Beginning Western/English Horsemanship

Min Credits: 1

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

Lecture: 1 **Lab:** 1

HPF 107 - Intermediate Rider

Min Credits: 1

This course is designed for Intermediate level riders who have mastered the HPF 106 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.

Lecture: 1 **Lab:** 0

HPF 108 - Advance Rider

Min Credits: 1

This course is designed for advanced level rider who has mastered the HPF 107 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.

Lecture: 1 **Lab:** 0

HST 101 - Principles of Human Services

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): EDU 100

HST 105 - Cultural Competence w/Diverse Populations

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): HST 101 and PSY 110

HST 112 - Group Work in Human Services

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

HST 208 - Interview Techniques

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): PSY 110, HST 101, and HST 105

HST 210 - Human Services Methods

Min Credits: 6

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.

Lecture: 4 **Lab:** 4
Prerequisite(s): HST 101, HST 105, PSY 210, and HST 112
Co-requisite(s): HST 208

HST 212 - Principles of Addiction

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): HST 101, HST 105, PSY 210, and HST 112
Co-requisite(s): HST 208

HST 222 - Ethics In the Helping Profession

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): HST 101

HST 230 - Introduction to Social Welfare

Min Credits: 3

This course surveys the history of social welfare policy, services, and the social work profession. It explores current social welfare issues in the context of their history and the underlying rational and values that support different approaches. Emphasis is placed on major fields of social work such as; income support, health care, child welfare, corrections, and services to the elderly. Analytic frameworks with regard to social welfare policies and services are presented. These frameworks identify strengths and weaknesses in the current social welfare system with respect to multiculturalism and diversity; social justice and social change; behavioral and social science theory and research; and social work relevant promotion, prevention, treatment, and rehabilitation programs and services related to diverse dimensions (including age, class, color, culture, ethnicity, family structure, gender(including gender identity and gender expression), marital status, national origin, race, religion or spiritually, sex and sexual orientation.)

Lecture: 3 **Lab:** 0

HST 240 - Social Problems

Min Credits: 3

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).

Lecture: 3 **Lab:** 0

HST 242 - Marriage & Family

Min Credits: 3

A comprehensive look at relationships in which the content includes: marriage, cohabitation, singles, family dynamics (parenting, adoption, ect), 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).

Lecture: 3 **Lab:** 0

HST 290 - Practicum I

Min Credits: 6

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.

Lecture: 2 **Lab:** 16
Prerequisite(s): HST 208 and HST 210
Co-requisite(s): HST214

HUM 209 - Humanities & Cultures: Ancient & Medieval Worlds

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

HUM 210 - Humanities & Cultures: Renaissance to Present

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

HUM 221 - Music Appreciation

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

HUM 230 - Art Appreciation

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

IND 100 - Precision Measurement

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

IND 103 - Applied Geometry & Trigonometry

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): MTH 080

IND 105 - Industrial Safety

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

IND 107 - Print Reading and Sketching

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

IND 110 - Industrial Computing I

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

IND 120 - Industrial Electricity I

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): MTH 050

IND 121 - Industrial Electricity II

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): IND 120 or instructor permission

IND 122 - Industrial Wiring (NEC)

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): IND 120

IND 130 - Rigging and Erecting

Min Credits: 3

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.

Lecture: 2 **Lab:** 4

IND 131 - Industrial Pipefitting

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): MTH 050

IND 132 - Bench Work

Min Credits: 2

This is the first basic machine shop course. Students learn the use of hand tools, hand work, and floor work. Students are required to read prints, layout, machine, and fabricate projects utilizing the lab environment with emphasis placed on safety, tooling, precision and accuracy. Topics include: materials, mechanical fasteners, measurement, tolerance, fit, layout, hand tools, power tools, drilling, grinding, sharpening, hardening, burring, filing, polishing, layout work on the bench, use of hand taps, and cutting threads with a die.

Lecture: 2 **Lab:** 0

IND 134 - Industrial Fluid Power I

Min Credits: 3

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.

Lecture: 2 **Lab:** 3

IND 140 - Principles of Machining

Min Credits: 3

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.

Lecture: 2 **Lab:** 3
Co-requisite(s): MET110

IND 141 - Metallurgy & Heat Treatment

Min Credits: 2

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.

Lecture: 2 **Lab:** 3
Prerequisite(s): MTH 080

IND 220 - Electrical Prints & Troubleshooting

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Co-requisite(s): IND 121

IND 221 - Instrumentation & Controls I

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): PLC 200

IND 223 - Motors & Motor Controls

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): IND 121

IND 232 - Machine Repair

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): IND 132

IND 234 - Industrial Fluid Power II

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): IND 134

IND 240 - Machining Processes II

Min Credits: 3

This class is intended to better the student's skills learned in IND 140. 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 IND 140. Students will be assessed by their accuracy, efficiency and finished product using their abilities.

Lecture: 2 **Lab:** 2
Prerequisite(s): IND 140

IND 241 - Tooling & Fixtures - Lubriciants/Coolants

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): IND 140

IND 250 - CNC Operations Capstone

Min Credits: 3

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.

Lecture: 2 **Lab:** 3

IND 290 - Industrial Technology Internship

Min Credits: 1 Max Credits: 4

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 with permission of instructor.

Lecture: 1 **Lab:** 0

INT 101 - Metrics for Welding

Min Credits: 1 Max Credits: 4

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.

Lecture: 1 **Lab:** 0

INT 102 - Welding Safety

Min Credits: 1 Max Credits: 4

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.

Lecture: 1 **Lab:** 0

INT 103 - Welding Processes I

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

INT 104 - Introduction to Ironworking

Min Credits: 1 Max Credits: 4

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.

Lecture: 1 **Lab:** 0

INT 105 - Pre-Casting Basics

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

INT 106 - Reinforcing Basics

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

INT 107 - Print Reading & Sketching A

Min Credits: 1

This is the first course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 107. Emphasis on PRINT READING including lines, abbreviations, terminology, view identification, dimensioning practices, dimensioning calculations, tolerancing calculations, and SKETCHING including orthographic, isometric, section, and auxiliary views. The course objective is for students to gain a basic proficiency for understanding and manipulating technical drawings and associated conventions. The course material for Print Reading and Sketching includes 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.

Lecture: 0.5 **Lab:** 0.9
Prerequisite(s): INT 111

INT 108 - Print Reading & Sketching B

Min Credits: 1

This is the second course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 107. Emphasis on PRINT READING including lines, abbreviations, terminology, view identification, dimensioning practices, dimensioning calculations, tolerancing calculations, and SKETCHING including orthographic, isometric, section, and auxiliary views. The course objective is for students to gain a basic proficiency for understanding and manipulating technical drawings and associated conventions. The course material for Print Reading and Sketching includes 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.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): INT 107

INT 109 - Print Reading & Sketching C

Min Credits: 1

This is the third course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 107. Emphasis on PRINT READING including lines, abbreviations, terminology, view identification, dimensioning practices, dimensioning calculations, tolerancing calculations, and SKETCHING including orthographic, isometric, section, and auxiliary views. The course objective is for students to gain a basic proficiency for understanding and manipulating technical drawings and associated conventions. The course material for Print Reading and Sketching includes 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.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): INT 108

INT 110 - Safety Equipment & Procedures

Min Credits: 1

This is an introductory course to cover the basics of safety equipment and safety procedures one will encounter in an industrial workplace. Topics covered will include Lock out/Tag out, Take two process, Personal Protective equipment, and First aid response in emergencies. Students will be required to attend one meeting on campus to facilitate hands on demonstration of some procedures.

Lecture: 1 **Lab:** 0

INT 111 - Hazardous Materials

Min Credits: 1

This is an introductory course to cover the basics of hazardous materials, Material Safety Data Sheets (MSDS), and the use of lifts and cranes.

Lecture: 1 **Lab:** 0
Prerequisite(s): INT 110

INT 112 - Principles of Machining A

Min Credits: 1

This is the first course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 140. 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 will be emphasized. Special emphasis is placed on safety, precision, accuracy, and teamwork in completion of assigned lab projects. The student will be required to interpret basic blueprints and operate the machinery safely.

Lecture: 0.9 **Lab:** 0.5
Prerequisite(s): INT 109

INT 113 - Principles of Machining B

Min Credits: 1

This is the second course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 140. 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 will be emphasized. Special emphasis is placed on safety, precision, accuracy, and teamwork in completion of assigned lab projects. The student will be required to interpret basic blueprints and operate the machinery safely.

Lecture: 0.8 **Lab:** 0.5
Prerequisite(s): INT 112

INT 114 - Principles of Machining C

Min Credits: 1

This is the third course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 140. 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 will be emphasized. Special emphasis is placed on safety, precision, accuracy, and teamwork in completion of assigned lab projects. The student will be required to interpret basic blueprints and operate the machinery safely.

Lecture: 0.8 **Lab:** 0.5
Prerequisite(s): INT 113

INT 115 - Solidworks A

Min Credits: 1

This is the first course in a sequence of 4 one credit hour courses. These four courses together are equivalent to CAD 213 - CAD III. 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.

Lecture: 0.25 **Lab:** 0.75
Prerequisite(s): INT 114

INT 116 - Solidworks B

Min Credits: 1

This is the second course in a sequence of 4 one credit hour courses. These four courses together are equivalent to CAD

213 - CAD III. 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.

Lecture: 0.25 **Lab:** 0.75
Prerequisite(s): INT 115

INT 117 - Solidworks C

Min Credits: 1

This is the third course in a sequence of 4 one credit hour courses. These four courses together are equivalent to CAD 213 - CAD III. 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.

Lecture: 0.25 **Lab:** 0.75
Prerequisite(s): INT 116

INT 118 - Solidworks D

Min Credits: 1

This is the fourth course in a sequence of 4 one credit hour courses. These four courses together are equivalent to CAD 213 - CAD III. 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.

Lecture: 0.25 **Lab:** 0.75
Prerequisite(s): INT 117

INT 120 - HVACR 1

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): IND 120 or EET 121

INT 121 - Programming CNC A

Min Credits: 1

This is the first course in a sequence of 3 one credit hour courses. These three courses together are equivalent to MET

222 - Programming Computer Numerical Control. In this course 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.

Lecture: 0.5 **Lab:** 0.9
Prerequisite(s): INT 118

INT 122 - Programming CNC B

Min Credits: 1

This is the second course in a sequence of 3 one credit hour courses. These three courses together are equivalent to MET 222 - Programming Computer Numerical Control. In this course 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.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): INT 121

INT 123 - Programming CNC C

Min Credits: 1

This is the third course in a sequence of 3 one credit hour courses. These three courses together are equivalent to MET 222 - Programming Computer Numerical Control. In this course 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.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): INT 122

INT 124 - CAM IA

Min Credits: 1

This is the first course in a sequence of 4 one credit hour courses. These four courses together are equivalent to MET 223 - CAM I.This course is a study in the basic fundamentals of Computer-Aided-Manufacturing (CAM). The student will become proficient in the use of manipulating CAM software in the hands-on environment. The goal is to generate and import CAD geometry, develop correct tool paths to the geometry, generate (post process) NC files, understand tooling and create the part on a CNC machining center. Datums, tool selection, speeds and feeds, and part identification will be emphasized.

Lecture: 0.25 **Lab:** 0.75
Prerequisite(s): INT 123

INT 125 - CAM IB

Min Credits: 1

This is the second course in a sequence of 4 one credit hour courses. These four courses together are equivalent to MET 223 - CAM I.This course is a study in the basic fundamentals of Computer-Aided-Manufacturing (CAM). The student will become proficient in the use of manipulating CAM software in the hands-on environment. The goal is to generate and import CAD geometry, develop correct tool paths to the geometry, generate (post process) NC files, understand tooling and create the part on a CNC machining center. Datums, tool selection, speeds and feeds, and part identification will be emphasized.

Lecture: 0.25 **Lab:** 0.75
Prerequisite(s): INT 124

INT 126 - CAM IC

Min Credits: 1

This is the third course in a sequence of 4 one credit hour courses. These four courses together are equivalent to MET 223 - CAM I.This course is a study in the basic fundamentals of Computer-Aided-Manufacturing (CAM). The student will become proficient in the use of manipulating CAM software in the hands-on environment. The goal is to generate and import CAD geometry, develop correct tool paths to the geometry, generate (post process) NC files, understand tooling and create the part on a CNC machining center. Datums, tool selection, speeds and feeds, and part identification will be emphasized.

Lecture: 0.25 **Lab:** 0.75
Prerequisite(s): INT 125

INT 127 - CAM ID

Min Credits: 1

This is the fourth course in a sequence of 4 one credit hour courses. These four courses together are equivalent to MET 223 - CAM I.This course is a study in the basic fundamentals of Computer-Aided-Manufacturing (CAM). The student will become proficient in the use of manipulating CAM software in the hands-on environment. The goal is to generate and import CAD geometry, develop correct tool paths to the geometry, generate (post process) NC files, understand tooling and create the part on a CNC machining center. Datums, tool selection, speeds and feeds, and part identification will be emphasized.

Lecture: 0.25 **Lab:** 0.75
Prerequisite(s): INT 126

INT 200 - Welding Processes II

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

INT 201 - Rigging

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

INT 202 - Shielded Metal Arc Welding

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

INT 203 - Shielded Metal Arc Welding II

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

INT 204 - Structural Welding

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

INT 210 - FCAW & GMAW Welding

Min Credits: 5

This course is an advanced study of gas metal arc welding, and flux core arc welding practices and procedures. The focus will be on advanced topics in GMAW and FCAW and weld quality.

Lecture: 4 **Lab:** 2

INT 212 - Welding Fabrication

Min Credits: 6

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.

Lecture: 5 **Lab:** 2

INT 213 - Ornamental Welding I

Min Credits: 5

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.

Lecture: 4 **Lab:** 2

INT 214 - Ornamental Welding II

Min Credits: 4

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.

Lecture: 3 **Lab:** 2

INT 215 - Welding Certification

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

INT 220 - HVACR II

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): INT 120

INT 221 - HVAC III Heating Systems

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): INT 220

INT 222 - HVACR IV Advanced HVAC Control

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): INT 221

INT 223 - HVACR V Advanced Topics

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): INT 222

ITR 118 - SPC Basics

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

ITR 119 - Introduction to GIBBS CAM

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

ITR 121 - GIBBS CAM - Intermediate

Min Credits: 1

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).

Lecture: 1 **Lab:** 0

ITR 132 - Electrical Safe Work Practices

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

ITR 135 - Principles & Theory of Mathematics

Min Credits: 4

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 thin wall conduit installations. Iron workers will demonstrate simulated angular displacement of the welding head for overhead and underwater welds.

Lecture: 3 **Lab:** 2

ITR 146 - Industrial Hydraulics

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

ITR 147 - FANUC Vision System

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

ITR 148 - FANUC RJ3iB Elec Service

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

JAT 100 - Electrical Career Orientation

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

JAT 102 - National Electrial Code

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

JAT 103 - Orientation Level II

Min Credits: 1

This course is a continuation of orientation to requirements of the electrical career. Emphasis is on avoiding hazards including drug abuse. American labor organization history is stressed with focus on parliamentary procedure, union by-

laws, and union constitution. The COMET program is also introduced.

Lecture: 1 **Lab:** 0

JAT 104 - Conduit Fabrication

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 106 - Conduit Fabrication II

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 108 - DC Theory I

Min Credits: 4

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.

Lecture: 3 **Lab:** 2

JAT 110 - AC Theory I

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

JAT 112 - Test Instruments

Min Credits: 1

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.

Lecture: 1 **Lab:** 1

JAT 114 - Transformers I

Min Credits: 1

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.

Lecture: 1 **Lab:** 1

JAT 116 - Electrical Safety I

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

JAT 118 - Blueprints I

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 120 - Codeology - NEC

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

JAT 122 - National Electrial Code II

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

JAT 124 - AC Theory II

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

JAT 126 - National Electrical Code III

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 127 - Lightning Protection I

Min Credits: 1

This course focuses on lightning protection for electrical systems. Topics covered include ground work, down conductors, and bonding with a focus on roof tops. Emphasis is on types of protection for metal buildings and wood structures. Surge protection devices are also included.

Lecture: 1 **Lab:** 0

JAT 128 - Fire Alarms

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 129 - Lighting Essentials 1

Min Credits: 1

This course focuses on light sources and various luminaires. Topics covered include switching and dimming, lighting

calculations, and lighting documentation. Emphasis is on types of ballasts, including fluorescent and high intensity. LED lighting applications are also included.

Lecture: 1 **Lab:** 0

JAT 130 - Fiber Optics

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 131 - Electrical Safety II

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 170 - DC Theory II

Min Credits: 3

This course is a continuation of DC Theory I. There is a focus on the Principle of Superposition to circuit calculations and Kirchhoff'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.

Lecture: 2 **Lab:** 2

JAT 172 - Distributed Generation

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 174 - Health Care Systems I

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 175 - Health Care Systems II

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 176 - Photovoltaics I

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 178 - Hazardous Locations

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 180 - Motors II

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 182 - Structured Cabling

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 183 - Building Automation CDA

Min Credits: 1

This course introduces automated controls for building systems. The focus is on electrical systems, lighting sources and controls, and HVAC systems. There is also emphasis on plumbing systems, fire protection, security systems, voice-data-video (VDV) systems, and elevator systems.

Lecture: 1 **Lab:** 0

JAT 184 - Installer/Tech CCTV I

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 185 - Installer/Tech CCTV II

Min Credits: 1

This course expands on applications of surveillance video technology. Emphasis is on low lighting challenges of video imaging of residential settings. There is also a focus on design, testing, and application solutions.

Lecture: 1 **Lab:** 0

JAT 186 - Installer/Tech LAN I

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 188 - Installer/Tech Sound Reinforce

Min Credits: 1

This is a study of sound reinforcement using indoor and outdoor sound systems. Drawing, reading, and interpreting specifications for sound diagrams will be a focus. A variety of sound equipment is covered, including microphones, speakers, amplifiers, mixers, and cabling. Installation and troubleshooting are emphasized.

Lecture: 1 **Lab:** 0

JAT 189 - Installer/Tech RF Comm

Min Credits: 1

This course includes the basics of signal technology using radio frequency communication. Basic operations are emphasized, including signal characteristics and signal power. Topics include frequency, filters, harmonics, and antennas for communication systems.

Lecture: 1 **Lab:** 0

JAT 190 - Installer/Tech Telephony

Min Credits: 1

This course includes the basics of telephone technology and principles of a telephone system. Basic operations are emphasized, including wiring and signal transmission. Topics include analog versus digital systems, electronic components, and PBX systems.

Lecture: 1 **Lab:** 0

JAT 200 - Grounding and Bonding I

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 201 - AC Theory III

Min Credits: 1

This course is an extension of the focus on AC Theory with emphasis on circuit filters. Topics include filter design, filter analysis, and power factors. Low-pass filter design, high-pass filter design, band-pass filter analysis, and band-reject filter analysis are emphasized. A study of AC generators is included, as well as three-phase systems.

Lecture: 1 **Lab:** 0

JAT 202 - Blueprints II

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 203 - Electrical Safety III

Min Credits: 1

This course is a review of electrical safety principles and focuses on updated safety issues. Emphasis is on the control of hazardous energy inherent in new technology applications in household and commercial applications. Precautions are emphasized to identify proactive measures to prevent safety hazards and methods to upgrade systems to provide increased safety.

Lecture: 1 **Lab:** 0

JAT 204 - Electrical Safety II

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 206 - Transformers II

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 208 - Blueprints III

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 210 - Code Calculations I

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 212 - Motor Control I

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

JAT 214 - Motors I

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 216 - Grounding and Bonding II

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 218 - National Electrical Code IV

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 219 - National Electric Code V

Min Credits: 1

This course is a continuation of the focus on the National Electrical Code for special applications of multi-outlet assemblies. Topics include wire mesh cable trays, surface raceways, and in floor installations. Code rules for solar voltaic systems are also covered.

Lecture: 1 **Lab:** 0

JAT 220 - Motor Control II

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 221 - National Electrical Code VI

Min Credits: 1

This course is a continuation of the focus on the National Electrical Code for special applications of overcurrent protective devices (OCPD). Emphasis is on protection of branch circuit devices and specialized components such as air conditioning and refrigeration devices, as well as alternative power systems.

Lecture: 1 **Lab:** 0

JAT 222 - Rigging, Hoisting, & Signaling

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 224 - Code Calculations II

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 270 - Transformers III

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 272 - Motor Control III

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

JAT 274 - Instrumentation

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 275 - Instrumentation II

Min Credits: 2

This course is a study of analytical instruments and their maintenance, including control valves. Process control systems are emphasized through the use of loop-checking systems, process control systems, and start-up systems. Topics include project management and distributed control systems.

Lecture: 1 **Lab:** 2

JAT 276 - Programmable Logic Controllers

Min Credits: 2

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.

Lecture: 1 **Lab:** 2

JAT 278 - Electrical Project Supervision

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

MEA 101 - Medical Assisting Clinical I

Min Credits: 3

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

Lecture: 1 **Lab:** 4
Co-requisite(s): BIO 150

MEA 105 - Laboratory Techniques

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Co-requisite(s): BIO 150

MEA 108 - Administrative Medical Office

Min Credits: 3

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 is placed upon the professional role and communication with patients and members of the health care team in an ambulatory setting.

Lecture: 3 **Lab:** 0

MEA 110 - Pharmacology for a Allied Health Professional

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH079 or MTH 080
Co-requisite(s): BIO 150

MEA 201 - Medical Assisting Clinical II

Min Credits: 3

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.

Lecture: 1 **Lab:** 4
Prerequisite(s): MEA 101 and MEA 105
Co-requisite(s): MEA 110 and MEA 205

MEA 203 - Medical Assisting Externship

Min Credits: 6

This course provides opportunities for the student to observe, assist, and demonstrate various clinical, general, and administrative medical assisting duties in an ambulatory healthcare setting. In a 160-hour non-reimbursed supervised clinical practicum, the student will apply classroom training to an actual work situation. Practicum experiences and topics relative to the medical assisting profession will be discussed. In addition, this course addresses the preparation for the Certified Medical Assisting (CMA) exam including a review of all three components (administrative, general and clinical) of the exam. All technical courses must have been successfully completed with a "C" or better.
(2+4)
Prerequisites: MEA201, MEA108

Lecture: 2 **Lab:** 4
Prerequisite(s): MEA 108 MEA 201

MEA 205 - Disease Conditions

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): BIO 150

MEA 207 - Phlebotomy Externship

Min Credits: 6

This course provides the opportunity to discuss and perform phlebotomy procedures under supervision. Healthcare ethical issues will be explored and discussed. The learning experiences will be obtained in selected laboratories,

physician offices, clinics or hospitals.

Lecture: 3 **Lab:** 9
Prerequisite(s): MEA 105, MEA 108, and BIO 150 or BIO 232

MEA 227 - Diagnostic Coding

Min Credits: 3

This is a course in the coding of diseases and operations using International Classification of Disease - 9th Revision - Clinical Modification (ICD-9-CM), and coding for reimbursement of procedures using Current Procedural Terminology-4 (CPT-4). Information will be covered regarding basic rules, sequencing, and coding principles. The use of a computerized encoding system will be demonstrated and used by the student to properly code examples from the clinical setting.
(3+0)
Prerequisite: OAS180, BIO150 or BIO 232
Co-requisite: MEA 228 or OAS 228

Lecture: 3 **Lab:** 0
Prerequisite(s): OAS 180 ,BIO 150 or BIO 232
Co-requisite(s): MEA 228 or

MEA 228 - Procedural Coding

Min Credits: 3

This course gives the student an introduction of the process of procedural coding for health insurance reimbursement purposes using the CPT system developed and updated yearly by the American Medical Association. Students explore the history of and uses for procedural coding. They develop an understanding of the organization of the CPT manual and the conventions that guide its use. They then use their understanding of CPT along with knowledge of medical terminology, pharmacology, disease conditions, anatomy and physiology to correctly assign procedural codes that document and justify charges for procedures and treatments performed.
(3+0)
Prerequisite: OAS180, BIO 150 or BIO 232
Co-requisites: MEA227 or OAS 227

Prerequisite(s): OAS 180 , BIO 150 or BIO 232
Co-requisite(s): MEA 227 or OAS 227

MEA 283 - Computerized Medical Insurance

Min Credits: 3

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 medial software in the health environment. Transfer Assurance Guide (TAG) approved, effective spring 2017 (OHL022 - Health Information Technology).

Lecture: 3 **Lab:** 0
Prerequisite(s): MEA227 or OAS227
Co-requisite(s): OAS228 or MEA 229 or OAS 229

MET 099 - Engineering Math

Min Credits: 3.5

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.

Lecture: 3 **Lab:** 1
Prerequisite(s): MTH 080 or Highschool Algebra II with a "C" or better

MET 100 - Introduction to Engineering Technology

Min Credits: 2 Max Credits: 3

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.

Lecture: 2 **Lab:** 0
Prerequisite(s): MTH 050

MET 107 - Engineering Graphics & Sketch

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

MET 121 - Manufacturing Processes

Min Credits: 3

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 spring 2008 (OET010 - Manufacturing Processes).

Lecture: 3 **Lab:** 0

MET 134 - Engineering Materials

Min Credits: 3

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 2008 (OET013 - Engineering Materials).

Lecture: 3 **Lab:** 0

MET 222 - Programming Computer Numerical Control

Min Credits: 3

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.

Lecture: 2 **Lab:** 3
Prerequisite(s): IND 140, IND 105, IND 110 or instructor permission (MET 122 or IND 140 or RTI 151)

MET 223 - CAM I

Min Credits: 4

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.

Lecture: 3 **Lab:** 3
Prerequisite(s): IND 140 and MET 222 or instructor permission

MET 234 - Strength of Materials

Min Credits: 3

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).

Lecture: 3 **Lab:** 0
Prerequisite(s): MET 235 and PHY 251

MET 235 - Statics

Min Credits: 3

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).

Lecture: 2 **Lab:** 2
Prerequisite(s): PHY 251

MET 255 - Fluid Mechanics

Min Credits: 3

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).

Lecture: 2 **Lab:** 2
Prerequisite(s): PHY 251

MET 260 - CAM II

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): MET 223

MET 262 - CAD/CAM Project

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Prerequisite(s): CAD 213, MET 223, and QCT141

MET 265 - Machine Design

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): PHY 251

MET 290 - Engineering Technology Co-op/Internship

Min Credits: 1 Max Credits: 4

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.

Lecture: 0 **Lab:** 10

MGT 110 - Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

MGT 120 - Supervision

Min Credits: 3

This course focuses on the supervisor/employee relationship. Primary topics include motivation, goal setting, performance appraisal, and management of a team of employees.

Lecture: 3 **Lab:** 0

MGT 121 - Entrepreneurship I & Small Business Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

MGT 210 - Human Resource Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

MGT 221 - Entrepreneurship II

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

MGT 230 - Retail Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

MGT 280 - Business Climate Analysis

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): ACC 111, ECO 212, ENG 112, MKT 110, and MGT 110 or BAN 110
Co-requisite(s): MGT 230

MGT 290 - Business Management Internship

Min Credits: 1 Max Credits: 3

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.

Lecture: 1 **Lab:** 1
Prerequisite(s): instructor permission

MKT 110 - Marketing

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ECO 212

MKT 115 - Digital Marketing

Min Credits: 3

The internet is a dynamic marketplace if there ever was one. This class will give you a theoretical understanding of the internet marketplace that is necessary to adapt to its many changes, while also equipping you with the skills you'll need to perform vital daily functions. By the end of the course, you will be able to walk into any company with an online presence and improve its digital marketing performance.

Lecture: 3 **Lab:** 0

MKT 210 - Advertising

Min Credits: 3

This is a study of sales promotion. Major topics include audience identification, ad preparation, media selection, budgeting, and research. Emphasis is placed upon coordination of advertising efforts and sales promotion.

Lecture: 3 **Lab:** 0

MKT 225 - Marketing Research

Min Credits: 3

This course provides an understanding to the marketing student of how to answer marketing problems with marketing research. Understanding basic statistical methods including hypothesis testing, cross-tabulation, measures of central tendency and dispersion, Chi-square, and t-test are addressed. Emphasis will be on a marketing research project: questionnaire design, tabulation, research reporting and presentation.

Lecture: 3 **Lab:** 0
Prerequisite(s): MKT 110, CIS 113, STA 120

MKT 230 - Professional Selling

Min Credits: 3

This course focuses on many aspects of personal selling including both customer and buyer relationships, communication skills, prospecting, sales presentations, and sales management.

Lecture: 3 **Lab:** 0

MTH 050 - Basic Mathematics

Min Credits: 4

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.

Lecture: 4 **Lab:** 0

MTH 080 - Review of Beginning Algebra

Min Credits: 3

This is an intensive first course in algebra. This course introduces geometric solids and triangle classifications, the properties, rules, and basic techniques of algebra. Topics include area and volume, formulae, triangle proportionality and computations, linear equations, graphing, systems of equations, properties of exponents, and translating between English and the language of algebra.

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 050 or satisfactory score on Course Placement Test

MTH 085 - Math Literacy

Min Credits: 3

Math Literacy is a one-semester course for non-calculus students bridging the gap between basic arithmetic and college-level statistics and quantitative reasoning courses. Students develop conceptual and procedural tools that support mathematical concepts in a variety of contexts. In this course, the relevancy of math is emphasized by analyzing and solving real-life problems before looking at the math tools beneath the surface. Topics include numeracy, proportional reasoning, algebraic reasoning, functions, and graphing. Successful completion of this course will prepare students for MTH 105 (Quantitative Reasoning) or STA 120 (Beginning Statistics). Students may also take MTH 090 (Intermediate Algebra) upon completion if they wish to prepare for MTH 109 (College Algebra).

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 050 or satisfactory score on Course Placement Test

MTH 090 - Intermediate Algebra

Min Credits: 3

This is a second course in algebra. This course introduces topics including operations with polynomials, factoring ploynomials, solving quadratic equations, operations with rational expressions, solving rational equations, operations with radicals, and solving equations with radicals.

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 080 or satisfactory score on Course Placement Test

MTH 099 - Engineering Math

Min Credits: 3.5

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.

Lecture: 3 **Lab:** 1
Prerequisite(s): MTH 080 or Highschool Algebra II with a "C" or higher

MTH 105 - Quantitative Reasoning

Min Credits: 4

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. (Ohio Transfer Module TMM011 approved)

Lecture: 3 **Lab:** 2
Prerequisite(s): MTH 050, Highschool equivalent, or satisfactory Accuplacer or ACT score

MTH 109 - College Algebra

Min Credits: 3

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).

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 090 or satisfactory score on the Course Placement Test

MTH 112 - Trigonometry

Min Credits: 3

This course focuses on the mathematical functions derived from relationships between sides and angles of triangles. Topics include both right triangle and circle definitions, solving all types of triangles, trigonometric identities and equations, vectors and vector applications, complex number problems, and the polar coordinate system. The course also includes material on sequences and series that, along with MTH 109 - College Algebra, completes a pre-calculus sequence (Ohio Transfer Module TMM003 approved).

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 109 or satisfactory score on the Course Placement Test

MTH 132 - Discrete Structures

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 090

MTH 151 - Mathematics Review for Calculus

Min Credits: 1

This course is a review of algebra, trigonometry, and graphing calculator skills necessary for success in the Calculus sequence. Students completed MTH 109 and MTH 112 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.

Lecture: 1 **Lab:** 0
Prerequisite(s): MTH 109 and MTH 112, Highschool equivalent pre-Calculus preparation, or permission of the instructor

MTH 170 - Survey of Mathematics

Min Credits: 3

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 manipulational techniques will be reviewed, this course in 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.

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 080, Highschool equivalent, or satisfactory score on Course Placement Test

MTH 213 - Calculus I

Min Credits: 5

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)

Lecture: 5 **Lab:** 0
Prerequisite(s): MTH 112 or MTH122, or satisfactory score on the Course Placemnet Test

MTH 214 - Calculus II

Min Credits: 5

This course is designed for those students who have completed MTH 213. 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)

Lecture: 5 **Lab:** 0
Prerequisite(s): MTH 213

MTH 216 - Differential Equations

Min Credits: 4

This course is designed for students that have successfully completed the calculus I & II sequence. Topics in this course include methods on how to solve first and higher-order differential equations, methods to solve homogeneous and nonhomogeneous equations, use linear and nonlinear differential equations to solve application problems, analyze slope fields, solve systems of differential equations, and perform operations Laplace and inverse Laplace transformations.

Lecture: 4 **Lab:** 0
Prerequisite(s): MTH 214

NRS 100 - Nurse Aide Certificate

Min Credits: 4

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 and Vantage Career Center and includes 24 clinical hours held at a local long term healthcare facility.

Lecture: 3.5 **Lab:** 0.5

NRS 105 - Math for Nurses

Min Credits: 1

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.

Lecture: 1 **Lab:** 0
Prerequisite(s): MTH 080

NRS 133 - Cardiopulmonary Resuscitation

Min Credits: 1

A basic course in cardiopulmonary resuscitation for cardiac arrest and respiratory emergencies. Includes infant, child, adult, and two-man CPR. Certificate issued upon completion.

Lecture: 1 **Lab:** 0

NRS 140 - Professional Concepts I

Min Credits: 1

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.

Lecture: 1 **Lab:** 0
Prerequisite(s): ENG 111, PSY 110, BIO 231
Co-requisite(s): NRS 141, NRS 144, BIO 232

NRS 141 - Health and Illness Concepts I

Min Credits: 6

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.

Lecture: 3 **Lab:** 9
Prerequisite(s): ENG 111, PSY 110, BIO 231
Co-requisite(s): NRS 140, NRS 144, BIO 232

NRS 142 - Professional Concepts II

Min Credits: 1

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.

Lecture: 1 **Lab:** 0
Prerequisite(s): NRS 140, NRS 141, BIO 232
Co-requisite(s): NRS 143, BIO 234, BIO 131

NRS 143 - Health and Illness Concepts

Min Credits: 7

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.

Lecture: 3 **Lab:** 12
Prerequisite(s): NRS 140, NRS 141, NRS 144, BIO 232
Co-requisite(s): NRS 142, BIO 234, BIO 131

NRS 144 - Pharmacology

Min Credits: 2

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.

Lecture: 2 **Lab:** 0
Prerequisite(s): Admission to the nursing program
Co-requisite(s): NRS 140, NRS 141, BIO 232

NRS 150 - Concepts in End of Life Care

Min Credits: 1

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.

Lecture: 1 **Lab:** 0
Prerequisite(s): NRS107 or PNE 120, also open to all licensed nurses

NRS 160 - Forensic Nursing

Min Credits: 3

This course provides the student with an overview of forensic nursing science focusing on the nurse's role, inter-professional collaboration, and patient-centered care for victims and families of physical, psychological, and social abuse. Content includes epidemiology of violence, injury identification, techniques in evidence collection, types of violence, and legal/ethical issues.

Lecture: 3 **Lab:** 0
Prerequisite(s): PNE 123 or NRS 143/NRS 231 or special permission from the Dean of Nursing & Allied Health

NRS 220 - Special Problems in Nursing I

Min Credits: 1 Max Credits: 4

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.

Lecture: 1 **Lab:** 0
Prerequisite(s): Permission of the Dean of Nursing

NRS 221 - Special Problems in Nursing II

Min Credits: 1 Max Credits: 4

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.

Lecture: 1 **Lab:** 0
Prerequisite(s): Permission of Dean of Nursing

NRS 230 - Transition to Professional Concepts in Nursing

Min Credits: 2

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.

Lecture: 2 **Lab:** 0
Prerequisite(s): Admission to the LPN to RN Program
Co-requisite(s): NRS 231, BIO 234

NRS 231 - Transition to Health/Illness Concepts II

Min Credits: 5

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.

Lecture: 3 **Lab:** 6
Prerequisite(s): Admission to the LPN to RN Program
Co-requisite(s): NRS 230, BIO 234

NRS 240 - Professional Concepts III

Min Credits: 1

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.

Lecture: 1 **Lab:** 0
Prerequisite(s): NRS 142, NRS 143 or NRS 230, NRS 231 and BIO 234, BIO 131
Co-requisite(s): NRS 241, BIO 257, PSY 230

NRS 241 - Health/Illness Concepts III

Min Credits: 8

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.

Lecture: 4 **Lab:** 12
Prerequisite(s): NRS 142, NRS 143, or NRS 230, NRS 231 and BIO 131, BIO 234
Co-requisite(s): NRS 240, BIO 257, PSY 230

NRS 242 - Professional Concepts IV

Min Credits: 1

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.

Lecture: 1 **Lab:** 0
Prerequisite(s): NRS 240, NRS 241, BIO 257, PSY 230
Co-requisite(s): NRS 243, STA 120

NRS 243 - Health/Illness Concepts IV

Min Credits: 8

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.

Lecture: 4 **Lab:** 12
Prerequisite(s): NRS 240, BIO 257, PSY 230
Co-requisite(s): NRS 242, STA 120

NRS 298 - Special Topics

Min Credits: 1

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.

Lecture: 1 **Lab:** 0 (F,S)
Prerequisite(s): Enrollment in Nursing Clinical Course

OAS 090 - Keyboarding Basics

Min Credits: 1

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. Course Placement Testing available.

Lecture: 0 **Lab:** 2

OAS 101 - Business Document Formatting/Skillbuilding

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): CIS 090 and OAS 090 or satisfactory score on Course Placement Tests

32OAS 102 - Advanced Business Document Formatting/Skillbuilding

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): OAS 101

OAS 103 - Office Accounting

Min Credits: 3

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 business transaction and ending with the preparation of financial statements including end of the period adjusting and closing procedures. Other topics include bank reconciliation and cash control. The course includes an introduction to payroll processing. Students will be able to calculate payrolls and be familiar with payroll forms.

Lecture: 3 **Lab:** 0

OAS 105 - Document Editing & Proofreading

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

OAS 111 - Electronic Health Records

Min Credits: 3

This course will give students an understanding of practical knowledge of managing Electronic Health Records (EHR). It will give student's 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.

Lecture: 3 **Lab:** 0

OAS 160 - Administrative Technology & Procedures

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

OAS 180 - Medical Terminology

Min Credits: 3

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).

Lecture: 3 **Lab:** 0

OAS 200 - Speedbuilding

Min Credits: 1

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 skill building. Students will also learn speed and accuracy development techniques and strategies.

Lecture: 0 **Lab:** 2
Prerequisite(s): OAS 102

OAS 223 - CCA Coding Exam Review

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): OAS 180 and OAS 229 /MEA 229
Co-requisite(s): OAS 283/MEA 283

OAS 224 - CCS Hospital Coding Exam Revie

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): OAS 180 and OAS 229 /MEA 229
Co-requisite(s): OAS 283/MEA 283

OAS 225 - CCS-P Physician Off Code Exam

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): OAS 180 and OAS 229 /MEA 229
Co-requisite(s): OAS 283/MEA 283

OAS 226 - Home-Based Independent Medical Coder

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): OAS 180 and OAS 229 /MEA 229
Co-requisite(s): OAS 283/MEA 283
Recommend: Certification as CCA, CCS, CCS-P

OAS 227 - Diagnostic Coding

Min Credits: 3

This is a course in the coding of diseases and operations using International Classification of Disease - 9th Revision - Clinical Modification (ICD-9-CM), and coding for reimbursement of procedures using Current Procedural Terminology-4 (CPT-4). Information will be covered regarding basic rules, sequencing, and coding principles. The use of a computerized encoding system will be demonstrated and used by the student to properly code examples from the clinical setting.
(3+0)
Prerequisite: OAS180, BIO150 or BIO 232
Co-requisite: MEA 228 or OAS 228

Lecture: 3 **Lab:** 0
Prerequisite(s): OAS 180 , BIO 150 or BIO 232
Co-requisite(s): MEA 228 or OAS 228

OAS 228 - Procedural Coding

Min Credits: 3

This course gives the student an introduction of the process of procedural coding for health insurance reimbursement

purposes using the CPT system developed and updated yearly by the American Medical Association. Students explore the history of and uses for procedural coding. They develop an understanding of the organization of the CPT manual and the conventions that guide its use. They then use their understanding of CPT along with knowledge of medical terminology, pharmacology, disease conditions, anatomy and physiology to correctly assign procedural codes that document and justify charges for procedures and treatments performed.
(3+0)
Prerequisite: OAS 180, BIO 150 or BIO 232
Co-requisites: MEA 227 or OAS 227

Prerequisite(s): OAS 180 , BIO 150 or BIO 232
Co-requisite(s): MEA 227 or OAS 227

OAS 249 - Advanced Microsoft Suite

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): CIS 112 and CIS 113

OAS 283 - Computerized Medical Insurance

Min Credits: 3

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 medial software in the health environment. Transfer Assurance Guide (TAG) approved, effective spring 2017 (OHL022 - Health Information Technology).

Lecture: 3 **Lab:** 0
Co-requisite(s): MEA 229 or OAS 229

OAS 291 - Internship I

Min Credits: 1

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.

Lecture: 0 **Lab:** 10
Prerequisite(s): ENG 111

OAS 292 - Internship II

Min Credits: 1

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.

Lecture: 0 **Lab:** 10
Prerequisite(s): ENG 111

PET 110 - Principles of Plastics

Min Credits: 4

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.

Lecture: 3 **Lab:** 2

PET 115 - Plastics Processes I

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Co-requisite(s): PET 110

PET 215 - Plastics Processes II

Min Credits: 4

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.

Lecture: 2 **Lab:** 4
Prerequisite(s): PET 115

PET 231 - Plastic Materials Testing

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Prerequisite(s): PET 110 and MTH 090

PET 240 - Injection Mold Tooling

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Prerequisite(s): PET210 and IND 103 with a "C" or better

PET 250 - Plastics Secondary Operations

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Prerequisite(s): PET 110
Co-requisite(s): MTH 090

PHI 110 - Critical Thinking & Logic

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

PHI 201 - Introduction to Philosophy

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

PHI 210 - Ethics

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

PHY 100 - The World of Science

Min Credits: 3

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 BIO 100 and PHY 100). Course projects will be based on the course prefix chosen.

Lecture: 3 **Lab:** 0

PHY 101 - Principles of Physical Science

Min Credits: 4

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.

Lecture: 3 **Lab:** 2
Prerequisite(s): MTH 080 or satisfactory score on Course Placement Test

PHY 140 - Astronomy

Min Credits: 4

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.

Lecture: 3 **Lab:** 2

PHY 150 - Principles of Geology

Min Credits: 4

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.

Lecture: 3 **Lab:** 2

PHY 251 - Physics: Mechanics & Heat

Min Credits: 4

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).

Lecture: 3 **Lab:** 3
Prerequisite(s): MTH 109 and MTH 112

PHY 252 - Physics: Electricity & Magnetism

Min Credits: 4

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).

Lecture: 3 **Lab:** 3
Prerequisite(s): MTH 109 and MTH 112

PLC 120 - Industrial Electricity IA

Min Credits: 1

This is the first course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 120 - Industrial Electricity I. This is an introductory course on the study of basic electrical concepts and circuits. The course will be based on Direct Current (DC) and Alternating Current (AC) concepts, terminology, components, and basic series/parallel circuits. Students will learn how to calculate and measure voltage, current, and resistance in basic series and parallel circuits. Students will learn how to utilize a Digital Multi-meter (DMM) to troubleshoot components in an electrical circuit, and test stand-alone components. The students will be introduced to DC and AC relay circuits, as well as electrical symbols that will be used on electrical prints. The course will have a heavy focus on troubleshooting concepts and techniques when working with electrical circuits.

Lecture: 1 **Lab:** 2
Prerequisite(s): INT 112

PLC 121 - Industrial Electricity IB

Min Credits: 1

This is the second course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 120 - Industrial Electricity I. This is an introductory course on the study of basic electrical concepts and circuits. The course will be based on Direct Current (DC) and Alternating Current (AC) concepts, terminology, components, and

basic series/parallel circuits. Students will learn how to calculate and measure voltage, current, and resistance in basic series and parallel circuits. Students will learn how to utilize a Digital Multi-meter (DMM) to troubleshoot components in an electrical circuit, and test stand-alone components. The students will be introduced to DC and AC relay circuits, as well as electrical symbols that will be used on electrical prints. The course will have a heavy focus on troubleshooting concepts and techniques when working with electrical circuits.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 120

PLC 122 - Industrial Electricity IC

Min Credits: 1

This is the third course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 120 - Industrial Electricity I. This is an introductory course on the study of basic electrical concepts and circuits. The course will be based on Direct Current (DC) and Alternating Current (AC) concepts, terminology, components, and basic series/parallel circuits. Students will learn how to calculate and measure voltage, current, and resistance in basic series and parallel circuits. Students will learn how to utilize a Digital Multi-meter (DMM) to troubleshoot components in an electrical circuit, and test stand-alone components. The students will be introduced to DC and AC relay circuits, as well as electrical symbols that will be used on electrical prints. The course will have a heavy focus on troubleshooting concepts and techniques when working with electrical circuits.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 121

PLC 123 - Industrial Electricity IIA

Min Credits: 1

This is the first course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 121 - Industrial Electricity II. The purpose of PLC 123 is to develop the student's knowledge and skills in the area of electrical safety, DC/AC machines, and basic control circuits. The electrical safety module will focus on lockout/tagout, arc-flash standards, PPE, electrical panels, and overcurrent protection. The DC/AC machines will focus on the wiring and troubleshooting of DC shunt motors, single phase motors (split-phase, capacitor-start, and permanent capacitor), dual voltage transformers, and three phase motors. The basic control circuits will consist of start/stop/jog, dual start/stop, sequence circuits, and reversing circuits. There will also be a module focused on the installation of a PLC system (based on the Micrologix 1200 PLC). Students will learn how to utilize test equipment and electrical prints to troubleshoot electrical systems.

Lecture: 0.5 **Lab:** 0.9
Prerequisite(s): PLC 122

PLC 124 - Industrial Electricity IIB

Min Credits: 1

This is the second course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 121 - Industrial Electricity II. The purpose of PLC 124 is to develop the student's knowledge and skills in the area of electrical safety, DC/AC machines, and basic control circuits. The electrical safety module will focus on lockout/tagout, arc-flash standards, PPE, electrical panels, and overcurrent protection. The DC/AC machines will focus on the wiring and troubleshooting of DC shunt motors, single phase motors (split-phase, capacitor-start, and permanent capacitor), dual voltage transformers, and three phase motors. The basic control circuits will consist of start/stop/jog,

dual start/stop, sequence circuits, and reversing circuits. There will also be a module focused on the installation of a PLC system (based on the Micrologix 1200 PLC). Students will learn how to utilize test equipment and electrical prints to troubleshoot electrical systems.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 123

PLC 125 - Industrial Electricity IIC

Min Credits: 1

This is the third course in a sequence of 3 one credit hour courses. These three courses together are equivalent to IND 121 - Industrial Electricity II. The purpose of PLC 125 is to develop the student's knowledge and skills in the area of electrical safety, DC/AC machines, and basic control circuits. The electrical safety module will focus on lockout/tagout, arc-flash standards, PPE, electrical panels, and overcurrent protection. The DC/AC machines will focus on the wiring and troubleshooting of DC shunt motors, single phase motors (split-phase, capacitor-start, and permanent capacitor), dual voltage transformers, and three phase motors. The basic control circuits will consist of start/stop/jog, dual start/stop, sequence circuits, and reversing circuits. There will also be a module focused on the installation of a PLC system (based on the Micrologix 1200 PLC). Students will learn how to utilize a test equipment and electrical prints to troubleshoot electrical systems.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 124

PLC 126 - PLC IA

Min Credits: 1

This is the first course in a sequence of 3 one credit hour courses. These three courses together are equivalent to PLC 200 - Programmable Controller I. 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 and CompactLogix, using RSLogix 500, RSLogix5000 and RSLinx software. The topics presented will be learned through online instructional material and hands-on labs

Lecture: 0.5 **Lab:** 0.9
Prerequisite(s): PLC 125

PLC 127 - PLC IB

Min Credits: 1

This is the second course in a sequence of 3 one credit hour courses. These three courses together are equivalent to PLC 200 - Programmable Controller I. 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 and CompactLogix, using RSLogix 500, RSLogix5000, and RSLinx software. The topics presented will be learned through online instructional material and hands-on labs.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 126

PLC 128 - PLC IC

Min Credits: 1

This is the third course in a sequence of 3 one credit hour courses. These three courses together are equivalent to PLC 200 - Programmable Controller I. 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 and CompactLogix, using RSLogix 500, RSLogix5000, and RSLinx software. The topics presented will be learned through online instructional material and hands-on labs.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 127

PLC 129 - PLC IIA

Min Credits: 1

This is the first course in a sequence of 3 one credit hour courses. This course is an in depth study of the Allen Bradley CompactLogix system, and how to use RSLogix5000 programming software to program, monitor, and troubleshoot a system. The primary focus will be on the processor memory structure, the intermediate instruction set, analog I/O modules, and using the RSLogix5000 software. Students will learn all the data structures used across most industrial PLCs, as well as a tag-based system versus an address-based system (SLC-500). Learning how the instructions work within a program will be an essential part of skills development for troubleshooting. A critical part of this course is learning how to search for objects in the L5000 project with RSLogix5000 as a method of increasing troubleshooting efficiency. Students will also learn of the different programming languages used for the ControlLogix platform (Ladder Logic, Structured Text, Sequential Function Charts).

Lecture: 0.5 **Lab:** 0.9
Prerequisite(s): PLC 128

PLC 130 - PLC IIB

Min Credits: 1

This is the second course in a sequence of 3 one credit hour courses. This course is an in depth study of the Allen Bradley CompactLogix system, and how to use RSLogix5000 programming software to program, monitor, and troubleshoot a system. The primary focus will be on the processor memory structure, the intermediate instruction set, analog I/O modules, and using the RSLogix5000 software. Students will learn all the data structures used across most industrial PLCs, as well as a tag-based system versus an address-based system (SLC-500). Learning how the instructions work within a program will be a critical part of skills development for troubleshooting. A critical part of this course is learning how to search for objects in the L5000 project with RSLogix5000, as a method of increasing troubleshooting efficiency. Students will also learn of the different programming languages used for the ControlLogix platform (Ladder Logic, Structured Text, Sequential Function Charts).

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 129

PLC 131 - PLC IIC

Min Credits: 1

This is the third course in a sequence of 3 one credit hour courses. This course is an in depth study of the Allen Bradley CompactLogix system, and how to use RSLogix5000 programming software to program, monitor, and troubleshoot a system. The primary focus will be on the processor memory structure, the intermediate instruction set, analog I/O modules, and using the RSLogix5000 software. Students will learn all the data structures used across most industrial PLCs, as well as a tag-based system versus an address-based system (SLC-500). Learning how the instructions work within a program will be an essential part of skills development for troubleshooting. A critical part of this course is learning how to search for objects in the L5000 project with RSLogix5000 as a method of increasing troubleshooting efficiency. Students will also learn of the different programming languages used for the ControlLogix platform (Ladder Logic, Structured Text, Sequential Function Charts).

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 130

PLC 132 - PLC IIIA

Min Credits: 1

This is the first course in a sequence of 3 one credit hour courses. This is an advanced PLC course based on the Allen Bradley ControlLogix platform. The course consists of 3 sections: Ethernet communications and networking, DeviceNet networking, and Wonderware InTouch HMI development and communications. Students will use the Rockwell Automation Studio 5000 programming software, with RSLinx Gateway, to communicate with primarily ControlLogix L71 type processors. RSNetWorx for DeviceNet will also be used to configure a DeviceNet network. Students will focus on learning these advanced technologies as well as how to troubleshoot these networks and systems when communication fails. Students will also have access to their own Virtual Machine that will have all of the software available 24/7 that they can create and modify their projects from home. This will also include the Emulate 5000 software, which will allow students to run their programs in a processor outside of the on-campus PLC lab.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 131

PLC 133 - PLC IIIB

Min Credits: 1

This is the second course in a sequence of 3 one credit hour courses. This is an advanced PLC course based on the Allen Bradley ControlLogix platform. The course consists of 3 sections: Ethernet communications and networking, DeviceNet networking, and Wonderware InTouch HMI development and communications. Students will use the Rockwell Automation Studio 5000 programming software, with RSLinx Gateway, to communicate with primarily ControlLogix L71 type processors. RSNetWorx for DeviceNet will also be used to configure a DeviceNet network. Students will focus on learning these advanced technologies as well as how to troubleshoot these networks and systems when communication fails. Students will also have access to their own Virtual Machine that will have all of the software available 24/7, that they can create and modify their projects from home. This will also include the Emulate 5000 software, which will allow students to run their programs in a processor outside of the on-campus PLC lab.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 132

PLC 134 - PLC IIIC

Min Credits: 1

This is the third course in a sequence of 3 one credit hour courses. This is an advanced PLC course based on the Allen

Bradley ControlLogix platform. The course consists of 3 sections: Ethernet communications and networking, DeviceNet networking, and Wonderware InTouch HMI development and communications. Students will use the Rockwell Automation Studio 5000 programming software, with RSLinx Gateway, to communicate with primarily ControlLogix L71 type processors. RSNetWorx for DeviceNet will also be used to configure a DeviceNet network. Students will focus on learning these advanced technologies as well as how to troubleshoot these networks and systems when communication fails. Students will also have access to their own Virtual Machine that will have all of the software available 24/7 that they can create and modify their projects from home. This will also include the Emulate 5000 software, which will allow students to run their programs in a processor outside of the on-campus PLC lab.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 133

PLC 135 - Servo/Robotics A

Min Credits: 1

This is the first course in a sequence of 3 one credit hour courses. Students will use the Rockwell Automation Studio 5000 programming software, with RSLinx Gateway, to communicate with primarily ControlLogix L71 type processors. RSNetWorx for DeviceNet will also be used to configure a DeviceNet network. Students will focus on learning these advanced technologies as well as how to troubleshoot these networks and systems when communication fails. Students will also have access to their own Virtual Machine that will have all of the software available 24/7 that they can create and modify their projects from home. This will also include the Emulate 5000 software, which will allow students to run their programs in a processor outside of the on-campus PLC lab.

Lecture: 0.5 **Lab:** 0.9
Prerequisite(s): PLC 134

PLC 136 - Servo/Robotics B

Min Credits: 1

This is the second course in a sequence of 3 one credit hour courses. Students will use the Rockwell Automation Studio 5000 programming software, with RSLinx Gateway, to communicate with primarily ControlLogix L71 type processors. RSNetWorx for DeviceNet will also be used to configure a DeviceNet network. Students will focus on learning these advanced technologies as well as how to troubleshoot these networks and systems when communication fails. Students will also have access to their own Virtual Machine that will have all of the software available 24/7 that they can create and modify their projects from home. This will also include the Emulate 5000 software, which will allow students to run their programs in a processor outside of the on-campus PLC lab.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 135

PLC 137 - Servo/Robotics C

Min Credits: 1

This is the third course in a sequence of 3 one credit hour courses. Students will use the Rockwell Automation Studio 5000 programming software, with RSLinx Gateway, to communicate with primarily ControlLogix L71 type processors. RSNetWorx for DeviceNet will also be used to configure a DeviceNet network. Students will focus on learning these advanced technologies as well as how to troubleshoot these networks and systems when communication fails. Students will also have access to their own Virtual Machine that will have all of the software available 24/7 that they can create and modify their projects from home. This will also include the Emulate 5000 software, which will allow students to

run their programs in a processor outside of the on-campus PLC lab.

Lecture: 0.5 **Lab:** 0.8
Prerequisite(s): PLC 136

PLC 200 - Programmable Controller I

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): IND 120

PLC 210 - Programmable Controller II (AB)

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): PLC 200

PLC 220 - PLC III

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): PLC 210

PLC 230 - Servo/Robotic Systems

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

PNE 105 - Effective Communication Skills

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

PNE 110 - Special Topics in PN

Min Credits: 1 Max Credits: 4

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.

Lecture: 1 **Lab:** 0
Prerequisite(s): Permission of the Dean of Nursing

PNE 117 - Pharmacology I

Min Credits: 1.5

Pharmacological theory of broad classifications of common medications in current use with application to nursing. Includes federal drug legisla¬tion and the responsibility of drug administration. This is the first part of a 2-course sequence equating to PNE 119.

Lecture: 1.5 **Lab:** 0
Prerequisite(s): PNE 120, BIO 150 or BIO 232

PNE 118 - Pharmacology II

Min Credits: 1.5

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 PNE 119.

Lecture: 1.5 **Lab:** 0
Prerequisite(s): PNE 117

PNE 119 - Pharmacology

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): PNE 120 or Permission of Nursing Department

PNE 120 - Essentials Practical Nursing

Min Credits: 8

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.

Lecture: 4 **Lab:** 12
Prerequisite(s): Admission to the Practical Nursing Program
Co-requisite(s): BIO 150 or BIO 232, ENG 111, and PSY 110

PNE 121 - Nursing Care Mother/Newborn

Min Credits: 2.5

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.

Lecture: 3 **Lab:** 6
Prerequisite(s): PNE 120 and BIO 150 or BIO 232
Co-requisite(s): PSY 230, NRS110 or NRS111, and PNE 122

PNE 122 - Nursing Care of the Child

Min Credits: 2.5

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.

Lecture: 1.5 **Lab:** 3
Prerequisite(s): PNE 120
Co-requisite(s): PSY 230, NRS110 or NRS111, and PNE 121

PNE 123 - Nursing Care: Adults I

Min Credits: 4.5

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.

Lecture: 3 **Lab:** 4.5
Prerequisite(s): PNE 120 and BIO 150 or BIO 232
Co-requisite(s): NRS110 or NRS111

PNE 124 - Nursing Care: Adults II

Min Credits: 5.5

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.

Lecture: 3 **Lab:** 7.5
Prerequisite(s): NRS110 or NRS112, PNE 121, PNE 122, PNE 123
Co-requisite(s): BIO 131

PSY 110 - General Psychology

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

PSY 210 - Abnormal Psychology

Min Credits: 3

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 - Social Psychology). Writing Intensive.

Lecture: 3 **Lab:** 0
Prerequisite(s): PSY 110, ENG 111

PSY 220 - Social Psychology

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): PSY 110, ENG 111

PSY 230 - Lifespan Development

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): PSY 110, ENG 111

PSY 250 - Personality Psychology

Min Credits: 3

This course examines the major perspectives of personality. Students discuss empirical investigation and learn how to use these methods as tools in the discovery of personality description, development, and assessment.

Lecture: 3 **Lab:** 0
Prerequisite(s): PSY 110, ENG 111

QCT 100 - Quality Concepts

Min Credits: 3

This class examines reasons for and philosophies leading to quality. We will look at quality from management, practitioner, and customer perspectives. Students concentrate on quality problem solving and process control tools. Course work includes measurement system analysis and control charting principles. In addition, the student is introduced to probability and studies philosophies espoused by Deming, Crosby, and Juran.

Lecture: 2 **Lab:** 2
Prerequisite(s): MTH079 or MTH 080

QCT 131 - Quality for Lean Manufacturing

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): QCT 100 and ability to access web courses

QCT 142 - Advanced Concepts of GD & T

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): MET110 or QCT141

QCT 243 - Advanced Quality Improvement

Min Credits: 3

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.

Lecture: 2 **Lab:** 3
Prerequisite(s): QCT 100 and ability to access web courses

QCT 250 - Certified Quality Technician

Min Credits: 3

Review of the requirements and topics to become certified as an American Society for Quality Control Technician or Mechanical Inspector.

Lecture: 3 **Lab:** 0
Prerequisite(s): QCT 100 and QCT141

REA 210 - Real Estate Principles

Min Credits: 3

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. This is a required course to prepare students for sales license testing in Ohio.

Lecture: 3 **Lab:** 0

REA 220 - Real Estate Law

Min Credits: 3

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 is a required course to prepare students for sales license testing in Ohio.

Lecture: 3 **Lab:** 0

REA 230 - Real Estate Finance

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

REA 240 - Real Estate Appraisal

Min Credits: 3

This course focuses on the theory and principles of appraising real property using the three basic techniques of appraising. A term project is assigned to give the students practical experiences in applying these techniques. This is a required course to prepare students for sales license testing in Ohio.

Lecture: 3 **Lab:** 0

RTI 102 - Shop Algebra

Min Credits: 2

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.

Lecture: 2 **Lab:** 0
Co-requisite(s): MTH 050 or instructor permission

RTI 103 - Shop Geometry & Trigonometry

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): RTI 102 or MTH 080

RTI 121 - Shop Graphic-Blueprint Reading

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

RTI 123 - Electrical Print Reading

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 131 - Industrial Safety

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 135 - Construction Safety

Min Credits: 1

Business and Industry training course.

Lecture: 1 **Lab:** 0

RTI 141 - Precision Measurement

Min Credits: 2

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 micrometers, vernier devices, dial indicators and a review of tables and formulas.

Lecture: 2 **Lab:** 0

RTI 142 - Applied Statistical Methods

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 143 - Benchwork

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 144 - Machine Repair

Min Credits: 2

Basic fundamentals of methods and means to rebuild a production machine such as realignment of colums of tables, scraping of ways, replacing of spindles, gears, bearings, gibs, etc.

Lecture: 2 **Lab:** 0
Prerequisite(s): RTI 143

RTI 146 - BICSI Apprentice Training I

Min Credits: 1 Max Credits: 4

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.

Lecture: 1 **Lab:** 0

RTI 152 - Programming of Numerically Controlled Machines

Min Credits: 3

This course introduces the advantages 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.

Lecture: 2 **Lab:** 2

RTI 153 - Residential Wiring I

Min Credits: 4

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.

Lecture: 4 **Lab:** 0

RTI 154 - Construction Electricity I

Min Credits: 4

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.

Lecture: 4 **Lab:** 0

RTI 155 - Residential Wiring II

Min Credits: 4

This course is a continuation of the basics of residential wi ring. 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.

Lecture: 3 **Lab:** 2

RTI 156 - Construction Electricity II

Min Credits: 4

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.

Lecture: 4 **Lab:** 0

RTI 157 - NEC Fundamentals

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 166 - National Electric Code I

Min Credits: 1

This course is a breakdown of the three credit hour course RTI 172, 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.

Lecture: 1 **Lab:** 0

RTI 169 - Transformer Connections

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

RTI 171 - Industrial Electricity I

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): MTH 050 or satisfactory score on Course Placement Test

RTI 172 - Industrial Wiring (NEC)

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): RTI 171 or instructor permission

RTI 174 - Electrical Prints & Troubleshooting

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): RTI 194 or instructor permission

RTI 178 - Industrial Electricity C

Min Credits: 1

This course is part of a breakdown of the three credit hour course RTI 171, 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.

Lecture: 1 **Lab:** 0

RTI 179 - Close Circuit TV

Min Credits: 1

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.

Lecture: 1 **Lab:** 0

RTI 181 - Applied Welding Techniques

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): RTI 121 or instructor permission

RTI 182 - Maintenance Electricity

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

RTI 183 - Alarm Signaling Low Voltage Circuits I

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 184 - Alarm Signaling Low Voltage Circuits II

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 185 - Premises Cabling

Min Credits: 3

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.

Lecture: 2 **Lab:** 1

RTI 188 - Fire Alarms

Min Credits: 2

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.

Lecture: 1 **Lab:** 1

RTI 191 - Electrical Principles & Applications

Min Credits: 3

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.

Lecture: 2 **Lab:** 3

RTI 194 - Industrial Electricity II

Min Credits: 3

An advanced study of lndustrial Electricity, focusing on electro-magnetic 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.

Lecture: 2 **Lab:** 2
Prerequisite(s): RTI 171

RTI 201 - Industrial Applied Physics

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): RTI 103 or instructor permission

RTI 210 - Residential Security/Communications

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 211 - Residential: Installation/Code

Min Credits: 4

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.

Lecture: 2 **Lab:** 2

RTI 212 - Installer: Telephone & Security Systems

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

RTI 213 - Residential & Commercial Electronics

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

RTI 214 - Commercial Wiring/ Print Reading

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 215 - National Electrical Code II

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

RTI 216 - National Electrical Code III

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 217 - National Electrical Code IV

Min Credits: 3

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.

Lecture: 3 **Lab:** 0

RTI 218 - Residential: Distribution/Troubleshooting

Min Credits: 4

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.

Lecture: 3 **Lab:** 2

RTI 220 - Electrical Test Equipment

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 223 - Rigging & Erecting

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 224 - Descriptive Geometry

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 225 - Geometric Dimensioning & Tolerancing

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 226 - Jig & Fixture Design

Min Credits: 2

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.

Lecture: 2 **Lab:** 0
Prerequisite(s): RTI 121, RTI 103 or instructor permission

RTI 227 - Die Thoery & Design Fundamentals

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): RTI 121, RTI 103 or instructor permission

RTI 228 - Patternmaking Fundamentals

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): RTI 226, course should be taken near end of apprentices program

RTI 231 - Metallurgy & Heat Treatment

Min Credits: 2

A basic course covering the nature and behavior of metals, crystal structure, theory of alloys, principles of heat treatment, properties of met and alloys and testing applications. The Rockwell and Brinell testers will be used.

Lecture: 2 **Lab:** 0
Prerequisite(s): MTH 080 or RTI 102

RTI 232 - Lubricants & Coolanats

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 233 - Industrial Pipefitting

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 234 - Hydraulics & Pneumatics

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

RTI 246 - BICSI Installer Trainer II

Min Credits: 4

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.

Lecture: 4 **Lab:** 0

RTI 265 - Instrumentation & Controls

Min Credits: 3

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.

Lecture: 2 **Lab:** 1
Prerequisite(s): RTI 171, PLC 200

RTI 276 - Motors & Motor Controls

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): RTI 194

RTI 277 - Industrial Electronics

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): RTI 171

RTI 282 - Motor Control Systems: INT

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

SPN 111 - Spanish I

Min Credits: 4

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.

Lecture: 4 **Lab:** 0

SPN 112 - Spanish II

Min Credits: 4

Continuation of Introduction to Spanish with practice in speaking, reading, writing, and listening comprehension conducted within a culturally significant framework.

Lecture: 4 **Lab:** 0
Prerequisite(s): SPN 111 or instructor permission

SCM 200 - Supply Chain Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): SCM 220 or instructor permission

SCM 210 - Purchasing & Materials Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): SCM 220 or instructor permission

SCM 220 - Operations Management

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 080

SCM 230 - Physical Distribution & Logistics

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Prerequisite(s): SCM 220 or instructor permission

SSC 101 - Sociology

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

SSC 120 - American Government

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

SSC 130 - Comparative Government

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

SSC 210 - Cultural Diversity

Min Credits: 3

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.

Lecture: 3 **Lab:** 0
Co-requisite(s): ENG 111

STA 120 - Introduction to Statistics

Min Credits: 3

This course introduces the student to the collection, analysis, and presentation of data. Major topics include graphic, tabular, and numeric summaries of data; measures of center, disersion, and position; probability; the normal distribution; the Central Limit Theorem; hypothesis testing; correlation and regression; Analysis of Variance (ANOVA); and CHI Square analysis.

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 090; MTH 105

STA 222 - Business Statistics

Min Credits: 3

A course introducing the student to the collection, analysis, and presentation of data. Major topics include: Descriptive and Inferential Parameters, Probability, Binomial, and Hypergeometric Distributions, Confidence Intervals, Hypothesis Testing, CHI-Squared analysis, and Linear Correlation and Regression.

Lecture: 3 **Lab:** 0
Prerequisite(s): MTH 109

VCT 103 - Introduction to Visual Communication

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

VCT 111 - Layout & Design

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

VCT 120 - Vector Graphics

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

VCT 182 - Photography

Min Credits: 3

An introductory course teaching basic photographic and digital editing techniques. Focus is 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).

Lecture: 1 **Lab:** 4

VCT 204 - Concepts of Visual Communication

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

VCT 210 - Essentials of Social Media

Min Credits: 3

This course is designed to help the learner understand how communication has (and has not) changed due to the rise of social media and changes in various underlying contextual factors, such as dramatically increased speed of information dissemination across consumers and brands. It will equip the learner with the relevant knowledge, perspectives, and practical skills required to develop strategies and content that leverage the opportunities inherent in social media and consumer-to-consumer social interactions for achieving business and communication goals.

Lecture: 3 **Lab:** 0

VCT 261 - 3D Computer Modeling

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

VCT 266 - Multimedia Production

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): CIS 129

VCT 268 - Video Production

Min Credits: 3

The study of video production is to provide a basic knowledge of the process used in pre-production, production, and post-production phases. 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).

Lecture: 2 **Lab:** 2

VCT 289 - VCT Co-Op Experience

Min Credits: 3

This is a work experience in visual communication. The student is accepted on the basis of academic progress and available work site at the College or an outside organization. Freelance work will also be accepted due to the nature of the visual communication field. Enrollment with instructor permission.

Lecture: 1 **Lab:** 20
Prerequisite(s): VCT108, VCT 111, VCT 120, VCT 182
Co-requisite(s): CIS 129, VCT 268

WLD 100 - Blue Print & Weld Symbols

Min Credits: 2

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.

Lecture: 2 **Lab:** 0

WLD 110 - Introduction to Applied Welding Techniques

Min Credits: 3

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

Lecture: 2 **Lab:** 2

WLD 120 - Gas Metal Arc Welding

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Co-requisite(s): WLD 100 and WLD 110

WLD 130 - Flat/Horizontal Shield Metal Arc

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): WLD 100 and WLD 110

WLD 140 - Gas Tungsten Arc Welding

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): WLD 100 and WLD 110

WLD 150 - Advanced Gas Metal Arc Welding

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): WLD 120

WLD 210 - Vertical & Overhead SMAW

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): WLD 130

WLD 220 - Advanced Gas Tungsten Arc Welding

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): WLD 140

WLD 230 - Welding Fabrications & Layout

Min Credits: 3

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.

Lecture: 2 **Lab:** 2

WLD 240 - SMAW Plate Certification Procedures & Testing

Min Credits: 3

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.

Lecture: 1 **Lab:** 3

WLD 250 - Pipe Welding

Min Credits: 3

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.

Lecture: 1 **Lab:** 3

WLD 260 - Pre-Pipe Certification

Min Credits: 3

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.

Lecture: 2 **Lab:** 2
Prerequisite(s): WLD 250

Glossary

Academic Advisor - Students are assigned an academic advisor who can provide guidance regarding class scheduling and program requirements.

Academic Divisions - There are four divisions at NSCC - Business and Public Services; Science, Technology, Engineering Tech, and Math; Nursing and Allied Health; Arts and Sciences; STEM and Industrial Technology.

Academic Fresh Start Policy - A student may apply to change a D, F, U or WF grade to a maximum of two courses which are not program requirements. Specific requirements apply.

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 and Allied Health") 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. MTH0S0, 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.

Financial Aid - A combination of scholarships, awards, loans, grants, and work study programs to help students meet education costs.

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.