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Northeast Wisconsin Technical College

Visit our website at www.nwtc.tec.wi.us
Who to Contact at Northeast Wisconsin Technical College

GENERAL INFORMATION
Green Bay Campus ................................................................. (920)498-5400 or toll-free (800)422-NWTC
Marinette Campus ........................................................................ (715)735-9361
Sturgeon Bay Campus ................................................................. (920)743-2207

REGISTRATION
Financial Aid .............................................................................. (920)498-5436
Registration Information ............................................................. (920)498-5444
Transcripts .................................................................................... (920)498-5579
Veteran Services ........................................................................... (920)498-5445

STUDENT SERVICES
Admissions and General Program Information ............... daytime (920)498-5600
Employment Assistance .............................................................. (920)498-5528
Multi-Cultural Services ............................................................... (920)498-6385
Returning Adult Services ........................................................... (920)498-5691
Special Student Needs and TDD Access .................................. (920)498-5470

CAREER CENTER........................................................................ (920)498-5422
SKILLS CENTER ......................................................................... Reading Lab - (920)498-5686
................................................................................................. Math Lab - (920)498-5427

DISTRICT OFFICES ..................................................................... (920)498-5426
CENTER FOR BUSINESS AND INDUSTRY ............................... (920)498-6373

PUBLIC RELATIONS
Tours ......................................................................................... (920)498-6855
Brochures, timetables, scholarship information .................... (920)498-5426

TECHNICAL COLLEGE OF THE AIR - TV Courses .................. (920)498-5571

PROGRAM INFORMATION ................................................................. Admissions & Counseling ................................................................. Curriculum & Administration
Agriculture ................................................................................. (920)498-5498................................................................................. (920)498-5457
Allied Health Office ................................................................. (920)498-5530................................................................................. (920)498-5543
Apprenticeship .......................................................................... (920)498-6823................................................................................. (920)498-5682
General Studies ......................................................................... (920)498-6865................................................................................. (920)498-5421
Business Occupations .............................................................. (920)498-5440................................................................................. (920)498-5435
Data Processing/Microcomputers .......................................... (920)498-5479................................................................................. (920)498-5435
Dental ......................................................................................... (920)498-5530................................................................................. (920)498-5450
Emergency Medical Services .................................................. (920)498-6806 ................................................................................. (920)498-6240
Family & Service Occupations ............................................... (920)498-5498................................................................................. (920)498-5442
Finance/Accounting ................................................................. (920)498-5440................................................................................. (920)498-5435
Laboratory Science ..................................................................... (920)498-5439................................................................................. Food (920)498-5457
................................................................................................. Medical (920)498-5543
Marketing .................................................................................... (920)498-5440................................................................................. (920)498-5435
Nursing ....................................................................................... (920)498-5530................................................................................. (920)498-5543
Supervisory Management ......................................................... (920)498-5616................................................................................. (920)498-5603
Police Science/Corrections Science ......................................... (920)498-6806................................................................................. (920)498-5423
Trades and Industry ..................................................................... (see individual program pages)........................................................................... (920)498-5461

or toll-free (800)422-NWTC
(Wisconsin Only)

Visit our website at www.nwtc.tec.wi.us

NORTHEAST WISCONSIN 2 TECHNICAL COLLEGE
President's Message: Let us meet your needs

Some colleges behave as though they don’t want you around. Huge lecture classes taught by graduate students ensure that the faculty will never know who you are. Rigid entrance requirements mean that they may never see you in the first place. Inflexible course schedules often don’t allow you to have a meaningful job or family life while you study.

NWTC is not that kind of place.

NWTC will prepare you for the high-skill, high-pay jobs of tomorrow through cutting-edge technology, flexible class schedules, innovative digital classrooms, worksite learning, and an array of support services that can help you overcome any obstacle in your path.

The staff and faculty at NWTC believe that we are only successful when you are successful. If you need help preparing for a class or keeping up with a subject, we’re here for you. If you need financial assistance because of an unexpected family hardship, we can help. If you need information about the local or national job market, we have it. NWTC students have been able to tailor their degree programs to fit their job needs, change the meeting schedule of their courses, take advantage of distance learning or video classes, and more, because we are committed to making NWTC work for our students.

We also believe that training for work is not a one-time event, but a lifetime process. We want to meet and exceed your expectations so that you will come back again and again. Your career will involve repeated demands for more education. So if we do our job right, we should see you many times over the course of your life. And we look forward to that.

Our purpose is to help you get the educational experiences you need to enjoy a higher quality of life. It is our vision to provide the highest quality courses you want, when you want them, where you want them, and how you want them. So as you check out our degree and diploma offerings (which are only part of the College’s many services) please let us know how we can make them meet your needs.

Thank you for checking out NWTC.
We would love to have you here.

Sincerely,

Dr. Jeff Rafn

NWTC Vision Statement

We will provide all learners the highest quality, life-long learning opportunities that are
• what they want
• when they want
• where they want, and
• how they want them
so they may continue their learning and successfully engage in a career that enhances their quality of life in a global community.

NWTC District Board
Laurene DeWitt Davidson, Chairperson
Cherie A. Buhr
Gerald Gerard
Herbert Grover
Carla J. Hedtke
Lawry S. Larson
Gerald L. Nichols
Raymond A. Thillman
Tony Vanderbloemen
District History

Northeast Wisconsin Technical College works closely with businesses and residents of Northeast Wisconsin to meet workforce training needs in traditional, new, and emerging technologies. The College serves part or all of nine counties through the three campuses and 30 outreach centers.

NWTC began as a set of city vocational schools in Green Bay, Marinette, and Sturgeon Bay. In 1968, they joined to form one college in what is now the Wisconsin Technical College System. The College offers Associate Degrees and Technical Diplomas in over 65 programs, customized on-site training and services to business, adult skill enhancement certificates and continuing education courses, and special interest classes.

In an average year, that wide range of programs serves over 40,000 people—one out of every eight Northeast Wisconsin residents. During the 1996-97 school year, NWTC served 41,719 people in nine counties. That included:
- 12,416 students taking courses which lead to degrees, either full-time or part-time
- 26,880 students taking individualized continuing education or corporate skill training
- 2,243 students taking community services classes, which help provide skills for living and enjoying life.

Several specialized service delivery programs have evolved during NWTC's 88-year history.

- The Center for Business and Industry was created in 1990 to provide customized courses and technical assistance to business and industry.
- Students and the community have access to Returning Adult Services, Special Needs Services, the Skills Center, the Career Center, and other services to help them achieve academic and personal goals.
- NWTC installed a fiber-optic link and joined the Triton network in 1995-96, through which we can deliver live, interactive, credit courses to more communities than ever before. NWTC can also deliver college courses to high schools, enabling students to take more advanced courses without leaving their schools.

In addition to specific job-related training, NWTC has identified a set of core abilities which are transferable and go beyond the context of a specific course. The College supports the following skills for all graduates of NWTC.

- Communicate effectively
- Understand and appreciate diversity
- Demonstrate global awareness and sensitivity
- Work cooperatively
- Set and achieve goals
- Value themselves
- Model responsible behavior
- Learn effectively
- Apply relevant technologies
- Think critically and creatively
- Access and use appropriate information resources

CAMPUS INFORMATION
GREEN BAY CAMPUS
2740 West Mason Street
Green Bay, WI 54307-9042
(920)498-5400

NWTC-Green Bay, founded in 1913, is the largest of the three campuses. The ten-building complex includes a District office, a police and fire-fighter training center, and eight education buildings.

Each building houses small, intimate classrooms, state-of-the-art laboratories, and hands-on shops. Building 3 also contains the Learning Resource Center (library), vocational guidance, and academic support offices.

The Center for Business and Industry building, completed in 1992, serves as the headquarters for NWTC's business and industry contracting services. It provides classrooms for business-related instruction, meeting space, and multi-purpose rooms.

The Protective Services Lab includes a Cinetronic Firing Range, used by police and corrections officers to keep their skills sharp. It is one of a handful of ranges in the world which incorporate cinetronic technology, and it has attracted attention from Canada, Great Britain, Russia, China, and the entire United States. The center also includes a three-story burn tower in which firefighters can practice firefighting and lifesaving techniques in a realistic, yet structurally safe environment.

A prominent feature of the Green Bay site is its 193-acre campus, which features 38 acres of orchard, the 30-acre Green Bay Botanical Gardens and other greenspace used for both education and recreation.

STURGEON BAY CAMPUS
229 North 14th Avenue
Sturgeon Bay, WI 54235-1317
(920)743-2207

NWTC-Sturgeon Bay, built in 1941, is the site of one of NWTC's newest degree programs. The Hospitality and Tourism Management Associate Degree is designed to make the most of its location in Door County, the Midwest's number one tourist destination. Students learn technical, management, financial, and other skills necessary to run a successful lodging, convention, or food service business. In addition, it is the site of NWTC's first dormitories.

It is also home to the Diesel and Heavy Equipment Technician program that is supported by one of the College's strongest business/academic partnerships. FABCO Equipment Inc. and Caterpillar have provided scholarships, field trips, guest lecturers, faculty professional development, equipment loans, and other academic support to the Diesel program.

Thanks to FABCO, Caterpillar and other industry partners, more than half of NWTC's Diesel students are attending college on scholarship.

MARINETTE CAMPUS
101 University Drive
Marinette, WI 54143
(715)375-9361

NWTC-Marinette, founded in 1913, offers a variety of full- and part-time programs. It is the only college in the United States to offer an Associate Degree program in Fire Protection Engineering Technology, which was developed as a result of the unique industrial base in the Marinette area.

The campus has found various innovative ways to meet community needs, including a unique facility-sharing partnership with the University of Wisconsin-Marinette; special programming to meet the job-training needs created by massive layoffs in the area; and an international exchange (co-hosted with the UW System) for Central American students.

The Marinette campus includes a Career Center and a Learning Resource Center, and offers courses which can lead to degrees from the Green Bay Campus.
District Description

A Leader in the Wisconsin Technical College System

District Boundaries: Northeast Wisconsin Technical College District is officially described as follows: Brown County less the portions of the Brillion Public School Districts and the Kaukauna Area School District; Door, Kewaunee, Oconto, Florence, and Marinette Counties; plus the portion of the School District of Denmark in Manitowoc County, and the portion of the School District of West De Pere in Outagamie County; the Gillett School District, the School District of Bonduel, and the Shawano-Gresham School District in Shawano County; and the Pulaski Community School District in Outagamie and Shawano Counties.

This catalog is not to be considered in any way a contractual document between Northeast Wisconsin Technical College and the student. But rather as a tool to give a potential student information on degree and diploma programs available at the College.

The District administration reserves the right to change curricula, regulations, and course offerings as published in this catalog during the period of any student’s attendance. Any changes made will be in accordance with the policies, rules, and regulations established by the Wisconsin Technical College System Board and will be based upon the changing needs of the occupational areas involved.

This catalog was designed for individuals interested in enrolling in post-secondary Associate Degree and Technical Diploma programs (or individual post-secondary courses) at Northeast Wisconsin Technical College during the 1999-2000 school year. Students who are already enrolled should obtain a copy of the NWTC Student Handbook.

NWTC offers programs in higher education at three campuses—Green Bay, Marinette, and Sturgeon Bay—plus some services through a network of 30 Adult Continuing Education Centers and customized training through the Center for Business and Industry.

District policy changes after January 1, 1999 could affect portions of this catalog.

ACCREDITATION OF PROGRAMS

Northeast Wisconsin Technical College is recognized as an institution of higher education by the United States Department of Education. It is recognized as a comprehensive technical college by the Wisconsin Technical College System Board.

In 1960, the State of Wisconsin empowered the NWTC District Board to grant the Associate Degree in Applied Science in two-year programs and Technical Diplomas in one- and two-year programs. Acceptance of courses for transfer credit at the baccalaureate level is at the discretion of the receiving institution.

Northeast Wisconsin Technical College is fully accredited by the Commission on Institutions of Higher Education, North Central Association of Colleges and Schools.
Admission

APPLICATIONS
Applications to enter an Associate Degree or Technical Diploma program will be accepted from students who have, at least, entered their senior year in high school. Application forms are available through local high school counselors, any Admission office on NWTC's three campuses, the NWTC District Public Relations office, and NWTC Student Services.

NWTC begins accepting applications the day after Labor Day. Completed applications will be processed on a first-come, first-served basis. When a program receives enough applications to fill the next entry date and establish an adequate waiting list, the program is closed and applications are no longer accepted. The time element varies from program to program and may be as short as a few days; in some cases a program may not be closed at all.

Students are encouraged to submit applications early. Applications are received and processed until the number is sufficient to fill the program. This varies by specific program and is not entirely predictable. Consult with an NWTC Admission Office for more specific information. Students whose applications are received and processed less than one month before the start of the intended semester of enrollment may not be able to take full advantage of all available services.

APPLICATION PROCEDURE
Steps in the Application Process
1. PROVIDE a valid Social Security number. Prospective students who do not have a Social Security number should contact the local Social Security office to obtain one.

2. CHECK the program description for the chosen field to find out:
   a) whether ACT scores are needed (the only programs requiring ACT scores are Associate Degree Health Occupations Programs), and
   b) whether any prerequisites are needed. (See admissions counselor for help in this area.)

3. COMPLETE the application form.

4. SEND the following to NWTC Student Services-Admissions:
   a) Completed application form, and
   b) $25 nonrefundable application fee.

5. REQUEST:
   a) that the high school send an official transcript of the applicant's current educational records to Student Services-Admissions now, and a completed transcript upon graduation;
   OR
   b) that GED/HSED scores be sent to NWTC Student Services-Admissions from the institution that administered the tests.

6. LIST the courses in which applicant is currently enrolled as well as any courses previously completed, particularly if the applicant is currently enrolled in a course that is a prerequisite for admission.

7. EXPECT to hear from Student Services-Admissions within five working days that the application has been received.

8. EXPECT a written notice indicating that the application has been accepted or listing the reasons for denial.

9. CONFIRM acceptance by sending the advance reservation fee WITHIN 15 DAYS after being notified of acceptance. Students will receive instructions about registration at a later date.

10. ARRANGE for a pre-admission counseling interview/orientation.

11. COMPLETE the registration process.

ADMISSION QUESTIONS
For all questions regarding admission, contact the Admission Counselor for the appropriate campus and the desired program. (See "Student Services" page for a list.)

STUDENT CLASSIFICATION SYSTEM
There are two classifications of students at Northeast Wisconsin Technical College.
- Classified or "Program" students (Associate Degree and Technical Diploma)
- Unclassified students

Classified Students (Associate Degree and Technical Diploma Students)
- Apply and are admitted to a degree or diploma program
- Successfully complete all required course work

• Have at least a 2.0 (C) cumulative grade point average (GPA)
• Fulfill other student requirements (see Student Handbook)
• Complete both program and registration orientations
• Register prior to unclassified students

Unclassified Students (Students not in an Associate Degree or Technical Diploma Program)
- Have not applied for admission to any program
- Have not been accepted into a program
- Take available classes that meet their personal objectives and for which they have completed the prerequisites

NEW STUDENTS
An applicant should be a high school graduate, or equivalent, to be eligible for admission to most programs. Upon application, NWTC counseling staff will evaluate a student's experience, transcripts, and/or examinations to determine that entrance requirements have been met. All records which have been submitted, including high school records, other transcripts, and test results: plus ability, attitude, and motivation are considered by the admissions counselor when granting acceptance to a program. The admission procedure often includes a testing program.

High school graduation or high school graduation equivalence is required to be eligible for federal financial aid.

TRANSFER STUDENTS
Students who transfer to NWTC from another institution of higher education will be considered for admission based on all submitted records. If an applicant is on scholastic probation or scholastic suspension at another institution, he or she will be considered for admission on a conditional basis.

READMISSION
If a student's attendance was interrupted for more than one year, the student must reapply and see a counselor before re-enrolling.

FOREIGN, NONIMMIGRANT STUDENT ADMISSION
The United States Department of Justice, Immigration and Naturalization Service has approved Northeast Wisconsin Technical
College for acceptance of foreign, nonimmigrant students. Contact Student Services for information.

TUITION RECIPROCITY AGREEMENTS

Michigan-Wisconsin Post-High School WTCS Reciprocity Agreement Any Wisconsin student who is a resident of the Northeast Wisconsin Technical College District may attend any of the following schools in Michigan: Bay DeNoc and Gogebic Community Colleges, and educational institutions in the counties of Gogebic, Iron, Dickinson, Menominee, and Delta. The student will pay the standard out-of-district, in-state resident tuition rate charged by that institution under this agreement.

Any Michigan student who is a resident of Bay DeNoc and Gogebic Community College Districts and the counties of Gogebic, Iron, Dickinson, Menominee, and Delta may attend NWTC campuses at Green Bay, Marinette, and Sturgeon Bay. The student will pay the out-of-district, in-state resident tuition rate charged by NWTC under this agreement.

Students from both states shall be charged the same standard out-of-district, in-state resident tuition rate. The tuition rate is established annually by mutual agreement of representatives of each state and the educational districts involved.

Minnesota-Wisconsin Interstate Compact
A Wisconsin resident enrolled in a full-time program in a Minnesota Vocational-Technical Institute is considered a Minnesota resident for tuition purposes. A Minnesota resident enrolled in a full-time program at NWTC is considered a Wisconsin resident for tuition purposes.

AGENCIES WHICH PAY STUDENT EXPENSES
The District cooperates with agencies and employers who intend to pay the expenses of a student. The agency or employer must submit a written agreement stating which expenses will be paid for the student. Upon enrollment, the student’s sponsor/employer will be billed for actual expenses. For specific details, contact the sponsoring agency or the Registration Office.
Advanced Standing

POLICY ON ADVANCED STANDING
The College recognizes that skills and knowledge may be gained in ways other than through formal classroom or laboratory learning. Student Services is responsible for granting advanced standing to students requesting such action. Student Services counselors may, at their discretion, call upon Deans, Associate Deans, and instructional staff to aid in any decision to grant advanced standing.

Students must officially be admitted to a program before requesting advanced standing. Request forms are available in Student Services, Building Four, Lower Level. In keeping with the Wisconsin Technical College System policies, students cannot obtain advanced standing credit for more than 75 percent of the credits required for graduation. A minimum of 25 percent of course requirements must be taken at NWTC and must include advanced core courses of the program.

CREDIT BY SECONDARY SCHOOL WRITTEN AGREEMENT
Students may request advanced standing in Associate Degree or Technical Diploma programs by written agreement between Northeast Wisconsin Technical College and accredited high schools in the District. No more than one-third of the total credits required toward program completion may be awarded through this method.

Advanced standing credits gained through this method will be recognized as WTCS credits toward approved Associate Degree or Technical Diploma programs. No fees will be assessed and no competency examination will be required.

ASSOCIATE DEGREE ADVANCED STANDING FOR APPRENTICESHIP TRAINING
Apprentices who have completed their training and obtained journey level status are eligible for advanced standing toward an Associate Degree in Technical Studies. Depending on the length of the apprenticeship, 32-38 credits may be applied toward an Associate Degree in Technical Studies by apprentices who can verify that they have completed their apprenticeship program. For information, contact the Trades and Industry office at NWTC, (920)498-5682, or the State Apprenticeship coordinator for NWTC’s District, (920)492-5618.

CREDIT BY EXAMINATION
Students may attempt to achieve advanced standing through credit by examination by demonstrating ability and knowledge in a particular subject.

Request forms for credit by examination are available from counselors and at the Registration Office.

A per credit, non-refundable fee is charged for each examination attempted. The fee will not apply to the course fee if the examination is not passed. Students may be eligible for a refund of course fees if they have enrolled in a course and then successfully complete the credit by exam and request a refund in writing. Refunds will be processed according to the WTCS refund policy if request is made within the first 14 calendar days of the semester.

WORK OR LIFE EXPERIENCE CREDIT
Students may request advanced standing in Associate Degree or Technical Diploma programs by written agreement between Northeast Wisconsin Technical College and the employer certifies that they lack job competencies specified in their degree or diploma program.

Former students are eligible if they meet three requirements.

1. The NWTC student has graduated from a one-year or two-year Technical Diploma or Associate Degree program.
2. The job concerned is the student’s first job after graduating.
3. Within 90 days of hiring the graduate, the employer certifies in writing that the employee lacks entry-level job skills and specifies the areas in which the graduate is deficient.

When those conditions are met, an NWTC team will be assembled to help the student with retraining courses and services. Participants may take up to six credits in their occupational program, and all program and material fees will be covered by the College.

Retraining Guarantee
NWTC offers free retraining for employed graduates whose employer certifies that they lack job competencies specified in their degree or diploma program.

Former students are eligible if they meet three requirements.

1. The NWTC student has graduated from a one-year or two-year Technical Diploma or Associate Degree program.
2. The job concerned is the student’s first job after graduating.
3. Within 90 days of hiring the graduate, the employer certifies in writing that the employee lacks entry-level job skills and specifies the areas in which the graduate is deficient.

When those conditions are met, an NWTC team will be assembled to help the student with retraining courses and services. Participants may take up to six credits in their occupational program, and all program and material fees will be covered by the College.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Transfer of Credit

TRANSFER STUDENTS FROM OTHER COLLEGES

When students transfer from another institution of higher education, they will be considered for admission based on their record. Students may request to have their records evaluated by a Student Services Counselor.

To transfer credits, a student must take two steps:
1. Submit a transfer request form (available from the Counselor or the Student Services Office).
2. Have an official transcript of requested credits sent to NWTC.

Students on scholastic probation or scholastic suspension at another institution of higher education will be considered for admission on a conditional basis.

Transfer of credit may be granted if the courses being transferred are equivalent, and satisfactory grades (C or better) were received.

TRANSFER OF CREDIT TO OTHER COLLEGES

Many two-year and four-year colleges throughout Wisconsin accept some or all NWTC credits. Some colleges actively recruit NWTC students and provide generous transfer arrangements.

Receiving institutions will determine acceptable credit transfers. Students enrolled at NWTC who wish to continue their education at another institution should contact the admissions counselor at the college to which they wish to transfer.

TRANSFER OF CREDIT TO UW SYSTEM SCHOOLS

Students enrolled at NWTC who wish to continue their education in the University of Wisconsin System may be eligible to transfer credits toward their bachelor's degree in several ways:
1. Students may be eligible to transfer up to 15 credits of General Education course work.
2. Students who have successfully completed an Associate Degree may be eligible to transfer certain technical support and/or occupational credits when there is a direct relationship between the Associate Degree program and a program offered at a UW System institution.
3. Students transferring from NWTC may be eligible for credit by earning appropriate scores on national standardized examinations (e.g., College Level Examination Program) or examinations developed by the UW System transfer institution.
4. Students can take advantage of articulation agreements between NWTC and specific UW institutions for some programs.
5. Students can have individual courses evaluated for transferability by UW System staff.

Transfer Information System (TIS)
The Transfer Information System is an information and transfer guide for students and staff in the University of Wisconsin and the Wisconsin Technical College System. It is a computer program designed to provide potential transfer students with current and accurate information to help them make more informed transfer decisions. TIS is divided into four major sections:
1. Transfer of Courses: Contains information on how courses offered at UW System Institutions and WTCS Institutions transfer between and among institutions within these two systems. This section includes transfer equivalencies to any UWS institution from (1) any of the 13 UW Centers; (2) Any of the 13 UW Baccalaureate institutions; (3) UW Extension's Independent Study Curriculum; (4) College parallel programs offered at 3 Wisconsin Technical Colleges; and (5) Associate Degree programs offered at the 16 Wisconsin Technical Colleges.
2. Institutional Information: Includes information about any UWS or WTCS institution such as its size and location, admission requirements and other details important to potential transfer students.
3. Academic Programs and Requirements: Contains listings and requirements for programs offered at UWS institutions and Associate Degree programs at WTCS institutions. You can also obtain a program guide to help you determine appropriate courses to take before you transfer.
4. Transfer Progress Reviews: Allows you to obtain an individualized evaluation of how your courses will apply toward completion of the requirements of programs at any UWS institution as well as determine what the transfer implications would be if you decide to change majors, compare your progress toward similar programs at different UWS institutions and determine if certain courses can be used to satisfy more than one requirement.

The information in the Transfer Information System is provided by the institutions and represents official institutional information. Although the information is intended to be current and accurate, it should NOT be considered a substitute for formal admission procedures. Since Course Transfer Information may vary based upon specific majors or programs, you are encouraged to contact your counselor before using the information for official purposes. You should also get in the habit of printing any important transfer information and keeping a copy for your records. An official evaluation of your transfer work will be sent to you after you have formally applied and been admitted to the UWS or WTCS Institution of your choice. For more information call the Distance Learning Coordinator at (920) 498-5424.

For more information about transfer opportunities, students should consult with the admissions office at the institution of higher education of their choice.
VIDEO COURSES
AND TECHNICAL
COLLEGE OF THE AIR

Video courses allow students to learn at home and earn College credit. Register and start on the semester start date or any time thereafter. The lessons can be viewed on public broadcast, some cable systems, or video tape at the three campuses and many libraries throughout the District. They can also be checked out like books at local libraries, or mailed to students who call the Green Bay Campus Technical College of the Air (TCA) Office.

The following 3-credit video/TCA courses are available.

- Contemporary American Society
- Business Law
- Economics
- Oral/Interpersonal Communication
- Introduction to Business
- Personal Finance and Money Management
- Principles of Marketing
- Principles of Supervision
- Introduction to Psychology
- Business Mathematics
- Nutrition Pathways (New in 1998)
- Small Business Management
- Medical Terminology
- Logistics Management
- Selling Principles
- Written Communications
- International Economics (New in 1998)

For information, call Sherry Olive at (920) 498-5571 or toll-free (800) 422-NWTC, ext. 571.

INTERACTIVE TELEVISION

Live Interactive Television (ITV) enables students in distant communities to gather in small groups and participate in classes being taught elsewhere. Through ITV, NWTC can offer courses in blueprint-reading, banking, marketing, law enforcement, safety, medical terminology, and other work skills in many communities for the first time.

In the past, the College couldn’t deliver many courses to rural areas because of low enrollment. ITV allows NWTC to come to those areas, combining enrollment at two or three sites, which makes it cost-effective to offer a class. ITV also makes courses more convenient for students, because it can considerably cut their commuting time.

ITV became possible with a fiber-optic link between the Green Bay, Marinette, and Sturgeon Bay campuses. With that link established, the College can reach area high schools through the Triton Distance Learning network, which covers five of the six main counties in NWTC’s district. It can also connect with other K-12 and business computer networks in the area. Those networks enable NWTC to provide advanced standing courses to high school juniors and seniors; adult continuing education courses at distant sites in the evenings; and services to business and industry.

The Green Bay campus will add a second ITV classroom in fall, 1998. This will allow NWTC to originate two ITV classes simultaneously from the Green Bay campus. Another enhancement to the ITV system: in the new ITV classroom in Green Bay plus the ITV classrooms in Marinette and Sturgeon Bay, NWTC will add a computer lab combining television and computer technologies. This feature will allow students at all three campuses to take computer courses via the ITV network.

For more information, call Sharon VandenHeuvel at (920) 498-5424 or toll-free (800) 422-NWTC, ext. 424.
Financial Aid

The Financial Aid Office helps students whose personal and family funds do not cover the expenses involved in attending the College, so that no students are denied an education because they can't afford to attend.

Financial Aid is available to students through grants, scholarships, work study employment, and loans.

The Free Application for Federal Student Aid (FAFSA) is available in mid-January for the next school year. Students should apply for financial aid in the January before they will start school, or as soon after January as possible. They may apply for aid before they are accepted into a degree or diploma program. However, a financial aid award letter is not sent to students until they have been accepted into a program.

Students who complete the FAFSA are considered for grants, work-study and loans.

GRANTS

The Federal Pell Grant Program gives a base of aid to which all other types of aid are added. Pell Grants are based on financial need and are pro-rated according to the student's enrollment status.

The Federal Supplemental Educational Opportunity Grant Program (FSEOG) is for students who have a large financial need. The student must be eligible for the Federal Pell Grant Program in order to receive FSEOG.

To receive a grant through the Wisconsin Higher Education Grant Program (WHEG), the student must be a Wisconsin resident attending a Wisconsin college at least half-time.

The Talent Incentive Program (TIP) grant is run by the Wisconsin Higher Educational Aids Board. To be eligible, the student must be a resident of Wisconsin, be enrolled at least half-time and show financial need. All TIP recipients must be eligible for WHEG grants.

The Wisconsin Minority Grant program is run by the Wisconsin Higher Educational Aids Board. To be eligible, the student must be a Wisconsin resident, be enrolled at least half-time, demonstrate financial need, and be in the second year of a two-year program.

Native American students (with at least 1/4 Indian lineage) enrolled full-time may receive aid from the Bureau of Indian Affairs. To be considered for this grant, students must contact their Tribal Education Office for an Indian Scholarship Application.

The Wisconsin Indian Assistance Grant Program (WIAG) is for Native American students who are Wisconsin residents attending a Wisconsin college. To be considered for this grant, students must complete an Indian Scholarship Application with their Tribal Education Office.

Through the Wisconsin Deaf/Blind Handicapped Program, visually handicapped or hearing impaired Wisconsin residents may qualify for a Grant for Handicapped Persons. These grants are run by the Wisconsin Higher Educational Aids Board and are based on financial need. To be considered for this grant, the student must contact the Wisconsin Higher Educational Aids Board in Madison, WI at (608) 266-0888.

FEDERAL FAMILY EDUCATION LOAN PROGRAMS

The Federal Stafford Loan Program (FSL) makes low-interest loans available through local lenders to students who have financial need and who are enrolled at least half-time. Loans will be made only for the amount of educational expenses not paid through other types of financial aid. The Financial Aid Office will send a loan application to each student who qualifies. The student does not need to get an application from a lender.

The Federal Unsubsidized Stafford Loan (FUSL) Program makes low-interest loans available to students who may not have the financial need necessary for the FSL. The government does not subsidize this program, so the student is responsible for the interest on the FUSL. Applications are available from the Financial Aid Office.

The Federal Parent Loans for Undergraduate Students (FPLUS) program makes loans available to parents of dependent students. Applications are available from lenders.

WORK-STUDY

The Federal Work-Study Program (FWS) provides employment to students attending school on at least a half-time basis, who have financial need. Work-study students are paid $6.00 per hour. The typical work-study job is 10 to 15 hours per week. Jobs are available for off-campus as well as on-campus positions.

SCHOLARSHIPS

Scholarships are available through the NWTC Educational Foundation Office and from private sources. (See facing page.) For information on scholarships contact the Financial Aid Office or the NWTC Foundation Office for a copy of the College’s scholarship booklet.

VETERAN INFORMATION

Students who want to use Veterans Educational Benefits must complete the required forms each semester and submit the necessary paperwork to the Veterans Services Office (3332) at the same time they apply for admission to a program.

Assistance is available for federal benefits, the State of Wisconsin Part-time study and Vietnam Era Grants, and Chapter 1606 for reservists. Benefits may also be available for other wartime periods. A Handbook for veterans is available in the Veteran Services Office, or by calling (920) 498-5443.

HOPE “Scholarship”: For program students who take 6 credits or more.

The HOPE “Scholarship” tax credit allows students in the first two years of college (or their parents) to receive a federal income tax credit of up to $1,500 per year—100 percent of the first $1,000 of tuition and required fees, and 50% of the next $1,000.

Students must be enrolled in an Associate Degree or Technical Diploma program (not a certificate program) at least half-time (6 credits). Eligibility is reduced by the amount of any grants, scholarships and other tax-free educational aid which a student receives.

Lifetime Learning: For all other students

The Lifetime Learning tax credit allows up to $1,000 per year for post-high school education. There is no credit minimum. It is worth 20% off the first $5,000 of tuition and fees.

The credit will be reduced by the amount of any grants, scholarships and other tax-free educational assistance which a student receives. The $1,000 maximum credit is determined on a per-taxpayer (family) basis, regardless of the number of post-secondary students in the family.

How do I apply?

Eligible individuals will claim the credit(s) when they file their tax forms in April.

How do I learn more?

The NWTC Financial Aid Office has an introductory handout. For details, contact your tax advisor.
Many scholarships are available to NWTC students. In fact, most of the scholarships available to four-year college students also apply at two-year colleges.

Scholarships can come from many sources. Some employers sponsor scholarships for employees and their families, some community groups support promising students, and many organizations that focus on special demographic groups give scholarships. Any local financial aid office or public library can be a good starting point for scholarship funds. NWTC also has a list of some community scholarships. Call (920) 498-5426 or (800) 422-NWTC, ext. 426, for the Community and Organizational Scholarship Booklet.

Once you have enrolled at NWTC, you may also qualify for a number of targeted scholarships donated by the community solely to support NWTC education. These scholarships, generally administered by the NWTC Educational Foundation, Inc., can be given based on need, merit, program of study, and similar criteria. Most are ONLY available to currently-enrolled NWTC students. Every January, the Foundation publishes a list of many available scholarships. Call (920) 498-5426 or (800) 422-NWTC, ext. 426, for a copy of the Foundation Scholarship Booklet.

The primary mission of the NWTC Educational Foundation, Inc. is to develop scholarship support for both current and prospective students. Donated funds have produced new educational opportunities and rewarded academic excellence. The Foundation also serves NWTC by acquiring equipment to supplement our programs and promoting staff development activities. To make a tax-deductible financial or in-kind contribution, contact the Foundation.

NWTC Educational Foundation, Inc.
2740 W. Mason Street
P.O. Box 19042
Green Bay, WI 54307-9042
# Tuition and Fees 1998-99

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These fees are provided for your reference only. Discuss current fees with your program counselor.
### Tuition and Fees 1998-99

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</table>

These fees are provided for your reference only. Discuss current fees with your program counselor.
Student Life

STUDENT LIFE
Student Life at Northeast Wisconsin Technical College includes many activities outside of normal classroom studies. Co-curricular and extra-curricular events are designed to provide a wide base of experience paralleling professional, technical, civic, and social activities.

All student life events at the Green Bay, Marinette, and Sturgeon Bay campuses are conducted under the auspices of the Northeast Wisconsin Technical College District Board. All funds for these events are subject to the rules and regulations established by the Board. The allocation of student activity fees is the joint responsibility of Student Senate, Student Life Office, and Student Services.

STUDENT SENATE
Student Senate representatives from each officially-recognized school club and/or program are named at the beginning of each school year. They meet twice each month to promote the welfare of the student body. The Student Senate Board, made up of officers elected from the representatives, outlines plans and policies for the Student Senate members.

STUDENT CLUBS
There are many student clubs active on the Green Bay, Marinette, and Sturgeon Bay campuses. The main purpose of each club is to provide the opportunity to gain educational experience in working toward desired club goals.

- Architectural
- Associate Degree Nursing
- Auto Body
- Auto Technicians
- Business Professionals of America
- Criminal Justice Association
- Dental Assisting
- Diesel Club
- Food and Environmental Lab Technicians
- Health Care Business Services
- Health Information Technology
- Jewelry Repair & Fabrication Students
- Mechanical Design Technicians
- Medical Assisting
- Medical Lab Technicians
- Model Builders
- Multicultural Student Alliance
- Native American Student Association
- Physical Therapist Assistants
- Postsecondary Agricultural Students
- Respiratory Care
- SADHA (Student American Dental Hygiene Association)
- Student Practical Nurse
- Surgical Technicians
- Transportation and Logistics
- VICA (Vocational Industrial Clubs of America)
- WMMA (Wisconsin Marketing and Management Association)

COLLEGE EVENTS
Students are encouraged to join in the fun of special events and activities on campus.

- Campus Entertainment
- Campus Voice Student Newsletter
- Children’s Christmas Party
- District Ambassador Competition
- Drug & Alcohol Awareness Week
- Evening Orientation Refreshments
- Gameroom Tournaments
- Graduation Ceremonies
- Health Week
- Intramural Sports
- National Association for Campus Activities
- Student-Faculty Bowling League
- Student Senate
- Student Socials
- Villa Hope On-Campus Ministry
- YMCA Student Discounted Memberships

GAMEROOM TOURNAMENTS
Tournaments are held each semester that enable participation on a one-to-one or team basis. These tournaments may include darts, foosball, pinball, ping pong, and pool. Other tournaments may be planned in special situations.

INTRAMURAL SPORTS
All sports leagues are supervised by the Student Life Office. The intramural program currently includes basketball, bowling, and volleyball.

ON-CAMPUS MINISTRY
A campus ministry program of presence, Villa Hope, is active on the Green Bay campus. The objective of this program is to provide, in an informal way, information of a spiritual nature designed to meet student and staff needs. The office, located in Room 3117, is staffed by members of area church denominations from 10:30 a.m. to 2:30 p.m. Monday through Friday when day classes are in session.
Student Services

Student Services offers service and assistance to students so that they can achieve their objectives at NWTC and be better prepared to find employment and take their place in society.

STUDENT SERVICES DEPARTMENT
• Admission
• Orientation
• Counseling
• Referral Services
• Follow-up
• Student Life
• Student Employment Services
• Student Health Services
• Alcohol & Other Drug Prevention/Intervention Services
• Minority Student Assistance

CAREER CENTER
• Counseling Services
• Standardized Testing
• Career Planning and Assessments
• Occupational Information
• Tutoring Information

SKILLS CENTER
• Math Skills Lab
• Reading Skills Lab
• Writing Skills Lab
• Study Skills Lab

COUNSELING SERVICES
Counseling services are available for personal, educational, and vocational needs. All students should see a counselor before entering a program. Counselors have national certification through the National Board for Certified Counselors. Selected staff also have National Certification as Career Counselors.

Green Bay Campus
Jim Clark ............................................(920)498-5530
Health Occupations Programs
Dan Goron ............................................(920)498-5691
Business & Marketing Programs
Mary Lynn Hall ....................................(920)498-5440
Returning Adult Services
Lynn Herold .......................................(920)498-5616
ABE/ESL/GED/HSED/Career Assessment
Charlie Hornet ...................................(920)498-6385
Multi-Cultural Services
Annie Jones .......................................(920)498-3479
Computer Program
Jerry Miller .......................................(920)498-5470
Special Needs
Bob Shepherd .....................................(920)498-56023
Trades & Industry Programs and Lab Sciences
Mary VanHaute .................................(920)498-6806
Protective Services Programs
Liz Whalen .......................................(920)498-5498
Trades & Industry Programs and Agriculture

Marinette Campus
James Rafferty .................................(715)735-9361
Admissions Counselor

Sturgeon Bay Campus
Robyn Anderson ...............................(920)743-2207
Admissions Counselor

COUNSELING OFFICE HOURS AT THE THREE CAMPUS
Green Bay Campus
Monday through Thursday 8:00 a.m. - 8:00 p.m.
Friday 8:00 a.m. - 4:00 p.m.
Marinette Campus
Monday through Friday 8:00 a.m. - 4:00 p.m.
Evening hours available—call (715) 735-9361 for details
Sturgeon Bay Campus
Monday through Friday 8:00 a.m. - 4:00 p.m.
Evening hours available—call (920) 743-2207 for details

SERVICES FOR STUDENTS WITH DISABILITIES
The College maintains a Special Needs/Services Office. To request special accommodations, contact appropriate staff. For Green Bay courses, call (920) 498-5470 for voice and (TDD) Telephone Device for the Deaf. For Sturgeon Bay and Marinette campuses and Community Centers, contact the Dean or coordinator, who will then make the necessary arrangements with the Special Needs/Services Office.

EQUAL OPPORTUNITY
Northeast Wisconsin Technical College complies with all state and federal laws regarding equal rights in education and employment. The College has established the Affirmative Action and Special Needs offices to assure that equal opportunity is available without regard to race, color, national origin, creed, gender, sexual orientation, age, handicap, marital status, ancestry, arrest/conviction record, or other protected status in employment of staff and in admission to educational programs and activities sponsored by the College.

Questions concerning discrimination, harassment, and/or equal opportunity may be directed to the Green Bay campus Affirmative Action Office in Room 2315A at (920) 498-6826 or the Special Needs Office in Room 3334 at (920) 498-5700. To file a complaint, provide a detailed description of the time, place, and circumstances to the appropriate personnel according to the grievance procedure outlined in the Student Handbook.

For information or copies of the grievance procedure, call the number above or write to:
Affirmative Action Officer
Northeast Wisconsin Technical College
2740 West Mason Street
P.O. Box 19042
Green Bay, Wisconsin

Upcoming events: 1998
Aug. 20 Fall semester begins.
Sept. 8 Accept 1999 applications
NOTE: High-demand programs only accept applications for a few days; call a guidance counselor to find out whether your program has restricted application dates!
Oct. 12-16 Alcohol and Drug Awareness Week
Nov. 4 32nd Annual Guidance Clinic
Nov. 26-27 Thanksgiving Recess
Dec. 18 December Graduation
Dec. 21 End of fall semester

Upcoming events: 1999
Jan. 1 Financial Aid forms may be filed
Jan. 14 Winter/Spring Semester begins
March 15-19 Spring Break
May 19 Last Day of Classes
Shared Programs

A shared program is an associate degree or technical diploma offered jointly by two or more technical colleges. NWTC shares the following programs:

**Radiography**
Assoc. Degree
Lakeshore Technical College

Radiographers position patients to acquire needed films, selecting appropriate X-ray exposure factors, aligning X-ray equipment, processing images (photographically or electronically), and storing and retrieving images. They are employed in radiology and imaging departments of hospitals, clinics, and diagnostic imaging centers.

**Optician Manager**
Assoc. Degree
Lakeshore Technical College

Opticianry is the branch of eyecare that deals with the fabrication and fitting of corrective eyewear. Opticians are employed in various locations such as wholesale optical labs, private optical stores, retail chain optics, private ophthalmic and optometric clinics, and the optical dispensaries of large medical clinics. Some opticians work as sales representatives for frame, lens, and optical equipment suppliers and manufacturers.

**Pharmacy Technician**
Tech. Diploma
Lakeshore Technical College

Pharmacy technicians are trained for the roles of supportive personnel for hospital and community pharmacies.

The pharmacy technician provides assistance to the pharmacist in a variety of technical tasks involving the packaging, distribution, compounding, labeling, and recording of drugs.

Introductive TV is used to broadcast to distant sites where the students also have lab instruction and clinical experience.

Some of the classes in these program can be taken at NWTC via the ITV network (see page 11 of this catalog.) All other courses will be held at Lakeshore Technical College. Clinicals are arranged in the Green Bay area whenever possible for the convenience of our District residents. You must apply, be accepted and will graduate from Lakeshore Technical College.

For more information on Radiography, Pharmacy Technician, Eyecare Technician or Optical Manager programs, or to apply, call Lakeshore Technical College at (920) 458-4183.

**Eye Care Technician**
Tech. Diploma
Lakeshore Technical College

Eyecare Technicians assist an optometrist and/or ophthalmologist in a clinic. The graduate will be involved in evaluating the health of the eye and the patient’s visual skills by conducting and recording the results of various screening and measuring procedures. They will also be capable of providing assistance in the optical dispensary by verification of spectacle prescriptions, frame assembly and repair, cosmetic frame selection, patient measurement, frame adjustment, and also the ordering of spectacles.
Basic Education

Basic Education is designed to help people succeed in college, on the job, and in daily living. Individualized education and group courses are offered at Green Bay, Marinette and Sturgeon Bay campuses and at community outreach sites. These classes can help students develop skills to achieve specific goals.

- Prepare to enter college
- Succeed in courses
- Keep a job or prepare for a new job
- Earn a High School Equivalency Diploma (HSED) or General Education Development (GED) certificate
- Learn English as a Second Language (ESL)
- Reach personal goals

All members of the public are welcome to use any of the services which meet their needs. There are no admissions requirements for Basic Education services, and they are not required for degree or diploma programs.

GETTING STARTED

Individuals will be evaluated to determine their strengths and areas for improvement.

The student and a counselor or instructor will develop a Personal Education Plan (PEP) based on the student's assessment results, goals, learning style, and abilities.

SKILLS HELP AVAILABLE THROUGH NWTC

MATH SKILLS
- Basic Math (Arithmetic)
- Whole Numbers
- Fractions
- Algebra

READING SKILLS
- Vocabulary
- Reading Rate
- Comprehension
- Speed Reading

COMMUNICATION (ENGLISH) SKILLS
- Writing
- Punctuation
- Grammar
- Capitalization
- Spelling

Please refer to pages 162-171 for course descriptions.

ORIENTATION TO COLLEGE LEARNING

Individualized programs assist you in achieving academic success in areas such as:
- Note taking
- Concentration
- Listening
- Outlining
- Test taking
- Summarizing
- Textbook study
- Reference skills
- Time management
- Memory techniques

STUDY SKILLS SEMINARS
- Strategies for Textbook Study and Concentration
- Using Your Notes and Your Time to Your Advantage
- Preparing for Tests and Easing Anxiety
- Strategies for Studying Math

OTHER COURSE AREAS

If you need help in a course, NWTC has FREE individual tutoring and/or group study to assist you. You may arrange for a tutor if you and your instructor agree that tutoring is needed, if you are attending class regularly, and if a tutor is available. To start the tutoring process, contact your program counselor or a Career Center (Room 3334) counselor. Class study is available in math, reading and English skills.

CHOOSE THE FORMAT THAT MEETS YOUR NEEDS

The student can choose to study in one of the following formats.

A. Individual learning on an NWTC campus
   - Open lab setting - students set their own schedule and work through required text at their own pace.
   - Instructors are available
   - Three sites

   Green Bay Campus, Room 3314
   Monday - Thursday, 8 a.m. to 8 p.m.
   Friday, 8 a.m. to 4 p.m. (920) 498-5427

   Marinette Campus
   Day and evening hours available
   For information, call (715) 735-9361

   Sturgeon Bay Campus
   Day and evening hours available
   For information, call (920) 743-2207

B. Classroom learning
   - Students meet in a group
   - 17 sessions, two hours per day, two days per week
   - Green Bay Campus
   - For more information, call (920) 498-5421

C. Individual learning in the community
   - Students can study at any of the Green Bay sites, or in any of 16 communities in the NWTC District
   - For information on Basic Education opportunities at the following Green Bay sites call:

     Brown Co. Job Center (920) 448-4540
     Room at the Inn Shelter (920) 448-4540
     St. Vincent De Paul (920) 435-4040
     8:30 a.m. - 11:00 a.m.

   - For information on Green Bay English as a Second Language (ESL) at the following sites call:

     Howe School (920) 498-6887
     First Presbyterian Church (920) 498-6878
     Fort Howard School (920) 498-6878

   - For (ESL) information in Spanish call: (920) 498-6894
   - For (ESL) information in Hmong call: (920) 498-6895

   - For information on Basic Education classes in local communities, call the following NWTC Centers.

     Algoma (920) 487-7299
     Coleman (920) 897-4135
     Crivitz (715) 854-2761
     Florence County (715) 528-4473
     Gillett (920) 855-6406
     Goodman (715) 336-2752
     Kewaunee/Luxemburg (920) 845-5489
     Lakewood/Suring (715) 276-6238
     Marinette/Peshitgo (715) 735-9361
     Niagara/Pembine (715) 251-4161
     Oconto (920) 834-3646
     Oconto Falls (920) 846-2370
     Pulaski (920) 822-4247
     Shawano (715) 524-8406
     Sturgeon Bay (920) 743-2207
     Wausaukee (715) 856-6836

The Basic Education courses are not eligible for financial aid.
General Education courses provide work-oriented training in Communications, Mathematics, Science, and Social Science. They are designed to help you succeed in college, on the job, and in daily living. All Associate Degree and most Technical Diploma programs require courses in General Education. In addition to supporting NWTC programs, many General Education courses can be transferred to other Wisconsin Technical Colleges and to four-year colleges and universities.

These courses are offered throughout the District. For more information, call the Green Bay Campus at (920) 498-5600 or (800) 422-NWTC, the Marinette Campus at (715) 735-9361, or the Sturgeon Bay Campus at (920) 743-2207. Ask to speak with a counselor.

Before taking General Education courses, you should meet high school exit competencies in English, Mathematics, Science, and Social Science.

**WHAT STUDENTS WILL LEARN:**

**Communication**

Based on a program’s required Communication courses, an NWTC graduate should be able to do the following.

- Use verbal, nonverbal, and listening skills to improve communication
- Present information before a group
- Prepare job-seeking documents
- Compose business and technical documents using a computer
- Use design techniques to help readers better understand a document
- Follow the rules of standard English grammar, usage, and punctuation

Please refer to pages 162-171 for course descriptions.

**Mathematics**

Based on a program’s required Math courses, an NWTC graduate should be able to do the following.

- Perform arithmetic operations on whole numbers, fractions, and decimals
- Use percents, ratios, and proportions
- Use geometric formulas, principles, properties, and conversions
- Use trigonometry
- Generate linear, systems of linear, and quadratic equations
- Derive the equations of straight line, circle, parabola, ellipse, and hyperbola
- Use complex numbers
- Use exponential and logarithmic functions
- Relate trigonometric functions as graphs
- Apply probability and statistics
- Apply differential and integral calculus
- Develop algorithms
- Use set theory and logic
- Use binary/hexadecimal number systems
- Use linear programming

Please refer to pages 162-171 for course descriptions.

**Science**

Based on a program’s required Science courses, an NWTC graduate should be able to do the following.

- Identify chemical pathways relating to cellular metabolism
- Analyze chemical lab measurements
- Define scientific terms relating to chemical processes and nomenclature
- Use both English and metric systems
- Apply stepwise scientific method/problem solving approaches
- Apply the principles of linear and rotational forces with respect to motion
- Apply concepts for various forms of energy: thermal, mechanical, electrical, sound, and light
- Relate work and power to different forms of energy
- Characterize the properties of matter: solids, liquids, and gases
- Explain the anatomy of the body systems
- Explain the physiology of the body systems
- Analyze physiological exercises
- Correlate anatomy and physiology with medical problems
- Work as a laboratory team member
- Explain basic microbiological concepts
- Describe etiology of bacterial, viral, fungal, and parasitic diseases
- Apply methods of control and prevention of infectious diseases
- Apply microbiological knowledge to current and future medical development

Please refer to pages 162-171 for course descriptions.

**Social Science**

Based on a program’s required Social Science courses, an NWTC graduate should be able to do the following.

- Apply psychological principles to life and work
- Appraise interaction between social influences and individual behavior
- Apply individual and/or team decision-making processes to life and work situations
- Analyze life experiences as they relate to the development of values, ethics, and self-esteem
- Develop sensitivity to issues of diversity
- Apply the cost versus benefits analysis to scarcity issues
- Demonstrate an awareness of global diversity in economic situations
- Evaluate the role of government in an economic system
- Analyze the impact of family on social issues
- Assess the value of participating in the democratic political process
- Evaluate the effect of attitudes about cultures

Please refer to pages 162-171 for course descriptions.

The General Education courses are not eligible for financial aid unless taken with an associate degree or technical diploma program.
GENERAL STUDIES

DESCRIPTION OF GENERAL STUDIES

The General Studies Certificate is designed for students who would like to take introductory courses before deciding on a Technical Diploma or Associate Degree program.

It allows time to develop critical decision making and career selection skills while earning credits that may be applied to a full time NWTC program.

Some credits earned may also be transferable to other technical colleges, the University of Wisconsin System or private four-year colleges. Check with the College you are interested in transferring to for more information.

PROFILE OF PROSPECTIVE STUDENT

• Interested in further education
• Unsure of career options
• Wanting to develop learning skills

HOW TO REGISTER/APPLY

1. Complete a Wisconsin Technical College System (WTCS) application form available on all technical college campuses and in high school guidance offices or write to the address below.

2. Send completed application to: Northeast Wisconsin Technical College, Attn: Student Services-General Studies, P.O. Box 19042, Green Bay, WI 54307-9042 or call (414) 498-6868 or (800) 422-NWTC, ext. 868 for more information.

The General Studies Certificate courses are not eligible for financial aid unless taken with an associate degree or technical diploma program.

CURRICULUM

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<th>Course No.</th>
<th>Description</th>
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<td>REQUIRED:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>862-110</td>
<td>EXPLORE CAREER OPTIONS</td>
<td>2</td>
</tr>
<tr>
<td>890-110</td>
<td>THINKING STRATEGIES</td>
<td>2</td>
</tr>
<tr>
<td>890-111</td>
<td>ORIENTATION TO COLLEGE LEARNING</td>
<td>2</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Select an additional six credits from A-B-C below with a maximum of three credits per category.

CATEGOTY A:

801-196 COMMUNICATION ORAL/ INTERPERSONAL 3
801-195 COMMUNICATION-WRITTEN 3
801-198 SPEECH 3

CATEGOTY B:

809-195 ECONOMICS 3
809-196 INTRODUCTION TO SOCIOLOGY 3
809-197 SOCIETY-AMERICAN CONTEMPORARY 3
809-198 INTRODUCTION TO PSYCHOLOGY 3
809-199 PSYCH HUMAN RELATIONS 3

CATEGOTY C:

804-120 TECH ALGEBRA 3
804-130 ALGEBRA/TRIGONOMETRY 3
105-101 BUSINESS MATH 3
102-101 MATH-FINANCE 3
Total Credits from A-B-C 6

TOTAL CREDITS FOR THE GENERAL STUDIES CERTIFICATE = 12 CREDITS
Associate Degree and Technical Diploma Programs
Accounting Program Code 101011

ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5440 or (800)422-NWTC Ext. 440.

PROGRAM DESCRIPTION

Accounting prepares students for entry-level positions as accountants. Accountants work with accounting systems, analyze business records, prepare financial reports, and supervise bookkeepers.

Graduates of this program will be able to:
• Manage general ledger.
• Manage accounts receivable.
• Manage accounts payable.
• Maintain inventory control.
• Prepare payroll.
• Prepare income taxes.
• Account for fixed assets.
• Perform job order cost accounting.
• Perform process cost accounting.
• Perform standard cost accounting.
• Analyze financial statements.
• Prepare budgets.
• Manage cash flows.
• Use corporate accounting procedures.
• Analyze accounting information to make appropriate decisions.
• Perform reconciliation procedures.
• Create electronic spreadsheets.
• Perform accounting functions using computerized accounting packages.
• Demonstrate proficiency in math using table top calculator and T.I. Business Analyst.

REQUIREMENTS FOR PROGRAM ENTRY
• Basic math (algebra recommended)
• Ability to use computer keyboard

READING LEVEL

Materials used within this program have an average reading level of 12th grade.

MATH LEVEL

Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL

A graduate of the program will have the potential for employment as Accountant Payable/Receivable Clerk, Bookkeeper/Payroll Clerk, Cost Accountant, Public Accountant, Staff Accountant, Tax Accountant, and Inventory Control Clerk.

ACCOUNTS PAYABLE/RECEIVABLE CLERK: handles the checking system of a business including payables, receivables and end-of-period reports; handles time cards; computes overtime, deducts taxes, and prepares payroll checks; and reconciles payroll accounts.

BOOKKEEPER/PAYROLL CLERK: handles the bookkeeping system of a business including payroll, receivables, payables, and end-of-period reports; handles time cards; computes overtime, deducts taxes, and prepares payroll checks; and reconciles payroll accounts.

COST ACCOUNTANT: determines cost of products manufactured; determines variations from standards in labor, materials, and overhead; prepares budgets; and prepares various management reports.

PUBLIC ACCOUNTANT: keeps records for small business; prepares payroll records; prepares financial records, income statements, and balance sheets.

STAFF ACCOUNTANT: keeps financial records; prepares financial records (income statements, balance sheets, budgets, and summary reports); and analyzes accounts.

TAX ACCOUNTANT: prepares tax returns for both state and federal governments, assists in tax planning and tax shelters; and files payroll reports and quarterly reports as required by government agencies.

INVENTORY CONTROL CLERK: records receipt and disposal of goods using a perpetual inventory system, assigns costs using an inventory valuation method.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Auditor
• Certified Public Accountant
• Comptroller
• Treasurer
• Trust Officer

CURRICULUM

The Accounting Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 65 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-105</td>
<td>Accounting-Computer Ledger</td>
<td>2</td>
</tr>
<tr>
<td>101-110</td>
<td>Accounting 1</td>
<td>4</td>
</tr>
<tr>
<td>102-101</td>
<td>Math-Finance</td>
<td>3</td>
</tr>
<tr>
<td>801-195</td>
<td>Communication-Written</td>
<td>3</td>
</tr>
<tr>
<td>809-197</td>
<td>Society-Amer Contemp</td>
<td>3</td>
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</table>

SEMESTER TOTAL 15

SECOND SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>101-120</td>
<td>Accounting 2</td>
<td>4</td>
</tr>
<tr>
<td>101-151</td>
<td>Accounting-Payroll</td>
<td>3</td>
</tr>
<tr>
<td>103-103</td>
<td>Micro Basics MS Office 1</td>
<td>3</td>
</tr>
<tr>
<td>801-196</td>
<td>Communication-Interpers</td>
<td>3</td>
</tr>
<tr>
<td>809-199</td>
<td>Psychology-Human Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

SEMESTER TOTAL 16

THIRD SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-130</td>
<td>Accounting 3</td>
<td>4</td>
</tr>
<tr>
<td>101-134</td>
<td>Accounting-Cost</td>
<td>4</td>
</tr>
<tr>
<td>101-154</td>
<td>Accounting-Personal Tax</td>
<td>4</td>
</tr>
<tr>
<td>104-108</td>
<td>Credit Procedures</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ELECTIVE</td>
<td>3</td>
</tr>
</tbody>
</table>

SEMESTER TOTAL 18

FOURTH SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-140</td>
<td>Accounting 4</td>
<td>4</td>
</tr>
<tr>
<td>101-142</td>
<td>Accounting-Managerial</td>
<td>3</td>
</tr>
<tr>
<td>102-150</td>
<td>Law-Business</td>
<td>3</td>
</tr>
<tr>
<td>809-195</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ELECTIVE</td>
<td>3</td>
</tr>
</tbody>
</table>

SEMESTER TOTAL 16


This program is fully eligible for financial aid.
These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

**101-110 ACCOUNTING**

- the accounting cycle and the end of the fiscal period,
- specialized journals, receivables and payables, voucher system,
- deferrals and accruals, inventory systems,
- depreciation, payroll and payroll taxes, sole proprietorships, and partnerships.

**101-120 ACCOUNTING 2**

- concepts and principles covering corporations, capital stocks, dividend bonds, amortization of bond premiums and discounts; manufacturing, job order, process cost systems; variances; managerial application including decision making and financial analysis.

**101-130 ACCOUNTING 3**

- income statements, balance sheets, cash flow statements, cash and receivables, revenue recognition, inventories and cost of goods sold, and financing activities.

**101-134 ACCOUNTING-COST**

- contemporary cost environments and issues; selecting, analyzing and tracking costs; production costing methods: job order, process, standard costs, by-product and joint costing.

**101-140 ACCOUNTING 4**

- equity financing, changes in retained earnings, noncurrent operating assets, investments in debt and equity securities, leases, employee compensation, derivatives and contingencies, earnings per share, accounting changes and corrections, statement analysis.

**101-151 ACCOUNTING-PAYROLL**

- payroll and personnel records, social security, withholding tax, unemployment compensation, time sheets and time-keeping records, and legal aspects of payroll.

**101-154 ACCOUNTING-PERSONAL TAX**

- history and research of tax law and regulations; preparation of Federal and State of Wisconsin individual income taxes including forms 1040, 1040A, and 1040EZ, and supporting schedules and forms.

**101-156 ACCOUNTING-AUTOMATED APPLICATIONS**

- Windows commands, file management, worksheet applications, database applications, macros, evaluation of accounting software, installation of software, and conversion of manual accounting system to a computerized system.

**103-103 MICRO BASICS MS OFFICE 1**

- introductory computer software packages and applications, basics of operating a computer, Windows concepts, mouse techniques, word processing using Word, creating spreadsheets and charts using Excel. No experience required.
Accounting Assistant Program Code 311011

TECHNICAL DIPLOMA - ONE YEAR

Offered at the Green Bay and Marinette campuses. For more information, call the Green Bay campus at (920)498-5440 or (800)422-NWTC Ext. 440, or the Marinette campus at (715)735-9361.

PROGRAM DESCRIPTION
Accounting Assistant prepares students to perform bookkeeping functions in business offices. Accounting Assistants may be responsible for payroll, accounts payable/receivable, purchase orders, invoice control records, or sales records.

Graduates of this program will be able to:
• Manage the general ledger.
• Manage accounts receivable.
• Manage accounts payable.
• Prepare payroll.
• Account for fixed assets.
• Manage cash flow.
• Analyze financial statements.
• Maintain inventory control.
• Create electronic spreadsheets.
• Perform accounting functions using computerized accounting packages.
• Demonstrate proficiency in math using table top calculator.

REQUIREMENTS FOR PROGRAM ENTRY
• Basic math
• Ability to use computer keyboard

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math before entering this program. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Accounts Payable/Receivable Clerk, Billing Clerk, Bookkeeper/Payroll Clerk, Inventory Control Clerk, or Office Assistant.

ACCOUNTS PAYABLE/RECEIVABLE CLERK: records and pays bills of the company, records receivables transactions, bills customers at regular intervals, and records charges and payments.

BILLING CLERK: prepares vouchers for payment of invoices, checks extensions, deducts discounts, charges payments to proper accounts, and prepares checks in payment of vouchers.

BOOKKEEPER/PAYROLL CLERK: handles the bookkeeping system of a business including payroll, receivables, payables, and end-of-period reports; handles time cards; computes overtime; deducts taxes; prepares payroll checks; and reconciles payroll accounts.

INVENTORY CONTROL CLERK: maintains a perpetual inventory system for the purchasing department, records price changes in product catalogs, schedules material ordering, and charges out material to various departments of the business.

OFFICE ASSISTANT: performs a variety of duties related to bookkeeping, keyboarding applications, filing, record keeping, customer relations, telephoning, and general correspondence.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Accountant
• Bookkeeping Supervisor
• Office Manager

CURRICULUM
The Accounting Assistant Technical Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 33 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No. Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-105 Accounting-Computer Ledger</td>
<td>2</td>
</tr>
<tr>
<td>101-311 Bookkeeping 1-Applied</td>
<td>3</td>
</tr>
<tr>
<td>105-101 Business Math</td>
<td>3</td>
</tr>
<tr>
<td>106-152 Records Management</td>
<td>2</td>
</tr>
<tr>
<td>106-153 Professional Profile</td>
<td>3</td>
</tr>
<tr>
<td>106-305 Keyboarding</td>
<td>1</td>
</tr>
<tr>
<td>106-306 Microcomputer-10 Key Pad</td>
<td>1</td>
</tr>
<tr>
<td>106-307 Keyboarding-Speed/Accuracy</td>
<td>1</td>
</tr>
<tr>
<td>801-387 Grammar-Business Appl</td>
<td>1</td>
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SEMESTER TOTAL: 17

SECOND SEMESTER

<table>
<thead>
<tr>
<th>Course No. Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-321 Bookkeeping 2-Applied</td>
<td>3</td>
</tr>
<tr>
<td>101-361 Accounting-Voc Payroll</td>
<td>2</td>
</tr>
<tr>
<td>103-302 Micro Overview-MS Office</td>
<td>2</td>
</tr>
<tr>
<td>104-350 Retail Credit</td>
<td>2</td>
</tr>
<tr>
<td>106-304 Keyboarding Appl 1</td>
<td>3</td>
</tr>
<tr>
<td>801-385 Communicating-Writing</td>
<td>1</td>
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<tr>
<td>801-386 Communicating-Interpers</td>
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</tr>
<tr>
<td>809-351 Economics-Basic</td>
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</table>

SEMESTER TOTAL: 16

Students enrolled in this program should contact the NWTC Veteran's Office at (920)498-5445 if Veteran's information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

101-105 ACCOUNTING-COMPUTER LEDGER
...applications on calculators and microcomputers such as addition, subtraction, multiplication, division, percent, memory, and business problems; and selected computer software to develop competency in utilization of the computers.

101-311 BOOKKEEPING 1-APPLIED
...analyzing business transactions; journalizing, posting, and the end-of-period operations; payroll procedures; and subsidiary ledgers and control accounts.

101-321 BOOKKEEPING 2-APPLIED
...partnership accounting, internal control of assets, negotiable instruments, valuation of inventory, valuation of fixed assets, departmental procedures, accrual basis of accounting, corporate accounting, branch operations, and voucher system. (Prerequisite: 101-311).

101-361 ACCOUNTING-VOCATIONAL PAYROLL
...payroll records, Fair Labor Standards Act, wage computation, federal and state tax, and timekeeping records.

103-302 MICROCOMPUTER OVERVIEW USING MS OFFICE
...overview of data processing concepts and hands-on experience with Microsoft Windows 95, Word, Excel, Access, and PowerPoint.

104-350 RETAIL CREDIT
...introduction to credit, retail credit types, credit business acquisition, investigation and guiding principles, account controlling, and special problems collections.

105-101 BUSINESS MATH
...percentage, interest, promissory notes, borrowing, credit charges, payroll records and deductions, property tax, sales tax, inventory valuation, depreciation, mark-up, cash and trade discounts, stocks and bonds, and financial statement analysis.

106-152 RECORDS MANAGEMENT
...organization and management of records departments, staffing, and equipment; and major systems of classification: alphabetic, numeric, geographic, subject, chronologic, and micro systems.

106-304 KEYBOARDING APPLICATIONS 1
...skill development of 35 words/minute minimum, formatting of business documents, vertical and horizontal centering, business correspondence, and reports. (Prerequisite: 28 WPM keyboarding).

106-305 KEYBOARDING
...alpha-numeric keyboard on a microcomputer with the ability to transfer the keyboarding skills to a standard typewriter keyboard. Includes use of an interactive software package on a microcomputer.

106-306 MICROCOMPUTER 10-KEY PAD
...operation of the 10-key numeric pad on a microcomputer and application of the skill through data entry using both the alpha and numeric 10-key pad. (Prerequisite: 25 WPM keyboarding).

106-307 KEYBOARDING-SPEED/ACCURACY
...improving speed and accuracy on the alpha keyboard. Corrective practice is prescribed to help improve key-stroking patterns using a diagnostic software package. (Prerequisite: 25 WPM keyboarding).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Administrative Assistant-Secretarial Program Code 101062

ASSOCIATE DEGREE - TWO YEARS
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5440 or (800)422-NWTC Ext. 440.

PROGRAM DESCRIPTION
Administrative Assistant-Secretarial prepares students with office production skills and knowledge of management practices and business procedures for the automated office.

Graduates of this program will be able to:
• Provide customer service.
• Manage information.
• Maintain financial records.
• Create publications/presentations.
• Maintain supplies and equipment.
• Arrange travel.
• Process documents.
• Coordinate meeting activities.
• Process mail.

REQUIREMENTS FOR PROGRAM ENTRY
• Basic math
• Demonstrate a keyboarding skill of 20 wpm using the TOUCH method

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Administrative Assistant, Legal Administrative Assistant, Medical Administrative Assistant, Office Assistant, Receptionist/Administrative Assistant, Transcriptionist, or Word Processor.

ADMINISTRATIVE ASSISTANT: schedules appointments; communicates effectively (in person, on the phone, and in writing); transcribes dictation from notes or machines; prepares agendas; takes minutes; arranges itineraries; schedules travel plans; handles mail; uses word processing, spreadsheet, presentation graphics, and/or database software; and possibly supervises others.

LEGAL ADMINISTRATIVE ASSISTANT: performs all duties of an administrative assistant in a legal office specializing in legal formats, terminology, and procedures.

MEDICAL ADMINISTRATIVE ASSISTANT: performs all duties of an administrative assistant in a medical facility specializing in medical procedures and terminology.

OFFICE ASSISTANT: types, files, transcribes, does word processing, works with the telephone, makes appointments, keeps records, sets up meetings, and handles customer relations.

RECEPTIONIST/ADMINISTRATIVE ASSISTANT: receives and routes telephone calls; greets visitors; handles filing, mail, photocopying, and faxing; may provide administrative support at various levels within the organization.

TRANSCRIPTIONIST: uses transcribing machines and word processing equipment, proofreads, and verifies documents.

WORD PROCESSOR: works in a specialized department of a company producing all forms of documents for the firm, edits, revises, proofreads, and types with speed and accuracy using word processing software.

With additional education and/or work experience, a graduate may find employment in a variety of specialties.
• Certified Professional Secretary (CPS)
• Executive Assistant/Secretary
• Office Manager
• Records Analyst
• Instructor/Trainer

CURRICULUM
The Administrative Assistant-Secretarial Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER
Course No. Description Credits
105-101 Business Math 3
106-102 Transcription Fund 1 2
106-103 Information Process Prin 3
106-105 Keyboard Skillbuilding 1 2
106-108 Word Processing Application 3
106-172 Telephone Skills 1
809-197 Society-Amer Contemp 3

SECOND SEMESTER
106-126 Admin Office Procedures 2 2
106-137 Software Appl 1-Office 3
106-150 Transcription Fund 2 3
106-152 Records Management 2
106-153 Professional Profile 3
106-156 Keyboard Skillbuilding 2 2
106-159 Document Formatting 3

THIRD SEMESTER
101-101 Accounting Principles 3
106-136 Admin Office Procedures 2 3
106-146 Software Appl 2-Office 3
801-195 Communication-Written 3
809-199 Psychology-Human Relations 3
ELECTIVE 3

FOURTH SEMESTER
106-144 Administrative Asst Intern 3
106-147 Word Process/Desktop Pub 3
801-197 Reporting-Technical 3
809-195 Economics 3
ELECTIVE 3

SUGGESTED ELECTIVES for this program include: Office Politics (106-157, 1 cr.), Meetings-Organizing (106-171, 1 cr.) and Career Development (890-150, 2 cr.).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

106-103 INFORMATION PROCESSING PRINCIPLES ...information processing cycle and workflow; terminology, hardware, software, ergonomics, security, systems, Internet, and career opportunities.

106-105 KEYBOARD SKILLBUILDING 1 ...skill development on the alphabetic keyboard to a minimum of 35 words per minute and on the ten-key pad to a minimum of 170 numbers per minute using analytic/diagnostic software. (Prerequisite: 20 WPM touch keyboarding).

106-108 WORD PROCESSING APPLICATIONS ...enhancement of keyboarding skills and basic document formatting techniques while applying decision-making skills; word processing functions used to create, revise, and print documents. (Prerequisite: 30 WPM touch keyboarding, OR concurrent with 106-105).

106-126 ADMINISTRATIVE OFFICE PROCEDURES 1 ...today's global business environment, including decision making, working as a team member, time management, reprographics, processing mail, electronic mail, and machine transcription. (Prerequisite: 106-108, 106-159).

106-126 ADMINISTRATIVE OFFICE PROCEDURES 2 ...today's global business environment, including information research, presentation skills, travel/conference planning, public relations, financial responsibilities, machine transcription, and the job search. (Prerequisite: 106-126, 106-137).

106-137 SOFTWARE APPLICATIONS 1-OFFICE ...functions of the Windows NT/95 operating system, Microsoft Excel 97 worksheets, and Microsoft PowerPoint 97 presentation graphics. (Prerequisite: Basic Windows NT/95).

106-144 ADMINISTRATIVE ASSISTANT INTERNSHIP ...structured employment under the supervision of a sponsoring business and a coordinating instructor. Students work 144 hours and attend 17 hours of class. Projects, reports, and discussions relate to student employment. (Prerequisite: last semester in program).

106-146 SOFTWARE APPLICATIONS 2-OFFICE ...Microsoft Access database and Microsoft Office integration, portfolio documents created in Excel 97, PowerPoint 97, and Access 97. (Prerequisite: 106-137 or equivalent).

106-147 WORD PROCESSING/DESKTOP PUBLISHING ...apply word processing skills to prepare flyers, brochures, newsletters, business forms, and multiple-page documents. The OCR/Scanner will be used to scan text and graphic images. (Prerequisite: 106-159).

106-152 RECORDS MANAGEMENT ...organization and management of records departments, staffing, and equipment, and major systems of classification: alphabetic, numeric, geographic, subject, chronologic, and micro systems.

106-153 PROFESSIONAL PROFILE ...workplace attributes such as attitude, appearance, habits, and techniques for success and promotion; leadership and organizational skills; and current trends/issues in the workplace.

106-156 KEYBOARD SKILLBUILDING 2 ...skill development on the alphabetic keyboard to a minimum of 45 words per minute and on the ten-key pad to a minimum of 195 numbers per minute using analytic/diagnostic software. (Prerequisite: 106-105).

106-159 DOCUMENT FORMATTING ...enhancement of keyboarding skills and advanced document formatting while applying decision-making skills; advanced word processing functions: macros, merges, sort/select, and tables. (Prerequisite: 106-108).

106-172 TELEPHONE SKILLS ...using the telephone effectively and efficiently in the world of work; telephone features, equipment, message taking, cellular technology, pagers, and electronic and voice mail.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Advanced Auto Body Repair Program Code 304052

TECHNICAL DIPLOMA - ONE SEMESTER
Offered evenings at the Green Bay campus. For more information, call the Green Bay campus at (920)498-6823 or (800)422-NWTC ext 823.

PROGRAM DESCRIPTION
Advanced Auto Body Repair provides advanced skills in uni-body repair, painting, and mechanical systems repair required to return collision-damaged, uni-body vehicles to like-new condition.

Graduates of this program will be able to:
• Inspect and repair major unibody damage.
• Diagnose and refinish two and three stage paint systems.
• Diagnose and repair advanced electronic air conditioning, and steering and suspension systems.

REQUIREMENTS FOR PROGRAM ENTRY
• Be employed as auto body technician or
• Be a graduate of the one-year Auto Body and Paint Technician program

READING LEVEL
Materials used within this program have an average reading level of 11th grade.

MATH LEVEL
Students should have mastered basic math skills.
For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of this program will have the potential for employment as Auto Body Technician, Frame and Alignment Specialist, Uni-Body Repair Specialist, and Painting Technician.

AUTO BODY TECHNICIAN: repairs damaged bodies of cars and light trucks; works with all body parts and sections; removes damaged panels and welds in new ones; removes and replaces accessories, glass, electrical parts, and interior trim; repairs or replaces plastic or composite parts; and straightens dents in sheetmetal panels to restore the vehicle to pre-accident condition.

FRAME AND ALIGNMENT SPECIALIST: straightens, welds, replaces, and aligns all types of frames and suspensions of cars and trucks to within factory specifications.

UNI-BODY REPAIR SPECIALIST: repairs unitized vehicles by analyzing, measuring, and pulling the unibody structure to the proper dimensions; and replaces structural parts that are not repairable using proper structural part sectioning techniques to return the vehicle to factory specifications.

PAINTING TECHNICIAN: completes the refinishing phase of all repairs on cars, trucks, and fleet vehicles; does all stages of priming, sanding, and sealing prior to the paint application; determines the type and color of paint to do the refinishing; is familiar with mixing, tinting, and shading as well as the application of color for matching; and buffs, polishes, cleans, and stripes vehicle to complete the repair job.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Insurance Adjuster and Appraiser
• Equipment and Supplies Specialist
• Foreman/Manager/Shop Owner

CURRICULUM
The Advanced Auto Body Repair Technical Diploma is a summer-semester program. Upon graduation, a student will have completed 6 credits. This program is not eligible for financial aid.

FIRST SEMESTER
Course No. Description Credits
404-372 Auto Repair-Adv 1
405-370 Auto Body-Unibody Rep Adv 4
405-371 Auto Body-Paint Match Adv 1

SEMESTER TOTAL 6

ACCREDITATION: Certified as ASE training site and to use ASE Seal of Excellence by the National Institute for Automotive Service Excellence

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is not eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

404-372 AUTO TECH-UNIBODY REPAIR
ADVANCED...front and rear suspension repair; alignment; correction of roadability and handling problems; service, diagnosis, and repair of air conditioners; and engine no-start condition solutions.

405-370 AUTO BODY-UNIBODY REPAIR
ADVANCED...history of automobile damage repair, uni-body construction, damage diagnosis, measuring systems, straightening systems, structural panels, high strength steel, sectioning and use of recycled parts, and collision repair evaluation.

405-371 AUTO BODY-PAINT MATCH ADVANCED
...blending and tinting; analysis of color match problems; color manufacture/selection/match; color mismatch; solving color match problems; adjusting color, tinting, cast, and brightness; water borne urethane application; low VOC; and tri-coat finishes.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
**Agribusiness/Science Technology**  Program Code 100062

**ASSOCIATE DEGREE - TWO YEARS**

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5498 or (800)422-NWTC ext. 498.

**PROGRAM DESCRIPTION**

Agribusiness/Science Technology - 2YR) Offers learners centered skills training in the general areas of livestock production and agronomics to meet the increasing technological employment needs of the agriculture industry. Graduates of this Program will be able to:

- Identify crop seeds, weed seeds, and plant insects and diseases.
- Assemble, install and adjust agricultural material handling equipment.
- Adjust and maintain tillage, planting, cultivating, and harvesting equipment.
- Use profitable & environmentally sound practices employed in livestock enterprises.
- Interpret similarities and differences between people.
- Employ product knowledge and people skills necessary to successfully complete a sale.
- Determine how reproductive management affects genetic progress, animal health, and enterprise profitability.
- Produce documents using correct spelling, sentence structure, paragraphing and punctuation.
- Employ marketing strategies in agricultural business ventures.
- Integrate principles of finance including those specifically related to agriculture into profitable agriculture.
- Distinguish between biological systems of various farm animal species & genetic, metabolic & communicable disorders.
- Relate to approved management practices used to profitably select, cultivate, and harvest agricultural crops.
- Incorporate the principles of basic economics into agriculturally related practices.
- Use proper language to discuss, debate, defend, support and present information.
- Use a computer.
- Compute profitability of nutritional needs of various farm animal species on basis of growth, maintenance & production.
- Calculate the needs for plant growth and maintenance.
- Interpret the relationships of chemical elements related to the biological and physical functions of plants and animals.
- Compute mathematical functions related to agricultural tasks.
- Identify similarities & differences of various physical systems of farm production species & associated mgmt practices.
- Demonstrate sufficient typing skills to effectively operate word processing and computer equipment.
- Utilize information related to physical properties of soils in analyzing problems and maintaining the resources.
- Use extensive information sources to investigate a particular program related topic or issue.
- Apply skills in a work setting under professional supervision.
- Explore the opportunities in agribusiness and develop skills necessary to obtain employment.
- Identify plant parts and functions in relationship to germination, growth, development and reproduction.
- Relate to historical & anticipated societal changes which may impact the agricultural industry.
- Demonstrate problem solving techniques and decision making skills.
- Enjoy working in a team environment.

**EMPLOYMENT POTENTIAL**

The Agribusiness/Science Technology Program will prepare a student for employment as a Livestock Production Specialist and/or Crop Production Specialist.

**CROP PRODUCTION SPECIALIST (CPS)**

- highly trained individual who generates sales of products and services, provides information about cropping technology, assists with conditions, develops crop plans, processes customer orders, applies crop requirements, etc. to meet customer compliance, and keeps up-to-date on new ideas and products in both agronomy and animal agriculture.

**LIVESTOCK PRODUCTION SPECIALIST (LPS)**

- highly trained individual who applies business principles, participates in marketing plans, generates sales of products and services, communicates information about basic animal husbandry, evaluates livestock, evaluates facilities, evaluates management practices, develops ration plans, applies feeding principles, and keeps current about livestock and feeding practices.

**REQUIREMENTS FOR PROGRAM ENTRY**

- Basic high school math (algebra helpful)
- Ability to use computer keyboard
- Science (general understanding of basic plant and animal biology, chemistry, and physics)

**READING LEVEL:**

Materials used within this program have an average reading level of 13th grade.

**MATH LEVEL:**

Students should have mastered basic math skills.

For a description of basic math, see the Basic Education section of this catalog on page 20.

**CURRICULUM**

The Agribusiness/Science Technology Associate Degree is a two-year, four-semester program. Upon graduation a student will have completed 67 credits.

**FIRST SEMESTER**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>006-103</td>
<td>Agri-Business Career Dev</td>
<td>2</td>
</tr>
<tr>
<td>006-114</td>
<td>Plant Morphology/Physiology</td>
<td>2</td>
</tr>
<tr>
<td>006-115</td>
<td>Soils-Intro</td>
<td>2</td>
</tr>
<tr>
<td>080-123</td>
<td>Science-Animal</td>
<td>2</td>
</tr>
<tr>
<td>103-145</td>
<td>Keyboarding</td>
<td>1</td>
</tr>
<tr>
<td>804-154</td>
<td>Algebra-AgriBusiness</td>
<td>3</td>
</tr>
<tr>
<td>806-155</td>
<td>Chemistry-Basic</td>
<td>4</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</table>

**SECOND SEMESTER**

<table>
<thead>
<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>006-121</td>
<td>Plant Fertility</td>
<td>2</td>
</tr>
<tr>
<td>080-133</td>
<td>Nutrition-Animal</td>
<td>4</td>
</tr>
<tr>
<td>103-105</td>
<td>Micro Basics MS Office</td>
<td>3</td>
</tr>
<tr>
<td>801-196</td>
<td>Communication-Interpers</td>
<td>3</td>
</tr>
<tr>
<td>809-195</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td><strong>ELECTIVE</strong></td>
<td></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td></td>
<td><strong>17</strong></td>
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</table>

**THIRD SEMESTER**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>080-103</td>
<td>Crop/Chemical-Agronomic</td>
<td>3</td>
</tr>
<tr>
<td>080-143</td>
<td>Anatomy/Diseases</td>
<td>3</td>
</tr>
<tr>
<td>102-138</td>
<td>Financing-Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>104-110</td>
<td>Marketing Principles</td>
<td>3</td>
</tr>
<tr>
<td>801-195</td>
<td>Communication-Written</td>
<td>3</td>
</tr>
<tr>
<td><strong>ELECTIVE</strong></td>
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<td><strong>2</strong></td>
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**FOURTH SEMESTER**

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<tr>
<th>Course No.</th>
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<tbody>
<tr>
<td>006-102</td>
<td>Agri-Business Internship</td>
<td>3</td>
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<tr>
<td><strong>OR</strong></td>
<td></td>
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<tr>
<td>006-104</td>
<td>Agri-Business Field Study</td>
<td>3</td>
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<tr>
<td>080-145</td>
<td>Reproduction-Bio Tech</td>
<td>3</td>
</tr>
<tr>
<td>104-101</td>
<td>Selling Principles</td>
<td>3</td>
</tr>
<tr>
<td>809-197</td>
<td>Society-Amer Contemp</td>
<td>3</td>
</tr>
<tr>
<td>809-199</td>
<td>Psychology-Human Relations</td>
<td>3</td>
</tr>
<tr>
<td><strong>ELECTIVE</strong></td>
<td></td>
<td><strong>2</strong></td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

**SUGGESTED ELECTIVES:**

- Dairy Herd Management (080-157), Farm Machinery-Crop Related (080-151), Farm Mechanization/Material Handling (080-153), and Agribusiness Sales and Marketing (006-101).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

006-101 AGRI-BUSINESS MARKETING...basic knowledge of agribusiness sales and marketing, recognizing potential customers, building a positive customer relationship, designing marketing plans, and using marketing and sales databases. Concepts are presented using hands-on activities.

006-102 AGRI-BUSINESS INTERNSHIP...student focused professional development based on problem solving, technical development, project assignments, and occupational accountability through measurable workplace outcomes.

006-103 AGRI-BUSINESS CAREER DEVELOPMENT...exploring job opportunities, job skills assessment, personal resume preparation, interviewing techniques, business organization, and professional organizations and growth.

006-104 AGRI-BUSINESS FIELD STUDY...specific instructor assigned projects that utilize resources in the workplace, and cooperative learning in industry settings.

006-114 PLANT MORPHOLOGY/PHYSIOLOGY...plant classification, cell components and functions, plant parts and functions, germination, emergence, growth, development, and reproductive processes.

006-115 SOILS-INTRODUCTION...fundamental knowledge of soils including soil formation and development, soil components, soil profile, soil classification, and soil conservation.

006-121 PLANT FERTILITY...sixteen essential plant nutrients necessary for growth, standard testing methods, soil sampling, interpretation of soil sample results, organic and inorganic fertility resources, least cost fertility recommendations, environmental and personal safety.

080-103 CROP/CHEMICAL-AGRONOMIC...forage and row crop management practices, pest ID management and control recommendations, crop variety, soil fertility, plant protection product recommendations, pesticide use and safety.

080-123 SCIENCE-ANIMAL...animal agriculture concepts emphasizing basic practices associated with the production of human food and fiber products from domestic animals such as dairy, beef, pork, poultry, aquaculture, etc.

080-133 NUTRITION-ANIMAL...practical applications of nutrition principles to livestock feeding, characteristics of feeds, practice in compounding rations, and studies of their relative economy in the management of herds and flocks. (Prerequisite: 806-155).

080-143 ANATOMY/DISEASES...physiology and anatomy of farm animals and their diseases and parasites including prevention, treatment, and control.

080-145 REPRODUCTION-BIO TECH...anatomy, physiology, and endocrinology of animal reproduction; selecting for genetic traits; measurements and data; artificial insemination; embryo transfer; genetic engineering; biotechnology applied in animal science, and factors that influence reproduction.

080-151 FARM MACHINERY-CROP... tillage, planting, cultivation, and harvesting machines; proper operation adjustments for plows, disc, cultivator, corn planter, grain drill, forage seeders, combine, corn picker, forage harvester, haybine, hay balers, blowers, and sprayer.

080-153 FARM MECHANICAL-MATERIAL HANDLING...elements of modern farmed design, livestock housing environment, animal comfort, livestock handling equipment, feeding systems, milking procedures, milking facilities, animal health concerns, and waste management.

080-157 DAIRY HERD MANAGEMENT...selection, breeding, group feeding, animal health, milking, and record management; management of mature and young animals; housing and waste management; milking equipment; effective milk and livestock marketing; and professional organizations.

102-138 FINANCING-AGRICULTURE...agriculture information sources; legal documents; public relations; capital structure; business credit needs; finance procedures, bank policy, and loan application, analysis, and evaluation; and loan performance evaluation.

104-101 SELLING PRINCIPLES...selling as a career; success factors in selling; personality development; product knowledge and the sales process involving preparation, approach, presentation, demonstration, handling objections, and closing the sale successfully.

104-110 MARKETING PRINCIPLES...marketing management, consumer behavior, market segmentation, product decisions and management, distribution, promotional decisions, pricing, market research, and international marketing strategy planning.

804-154 ALGEBRA-AGRIBUSINESS...mathematical applications related to agribusiness; land area, moisture, germination, and seeding rates; fertilizer and pesticide application; ration problems; order of operations; linear equations; formula rearrangement; unit conversions; percent equations; statistics.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Apprenticeship
OFFERED AT THE GREEN BAY, MARINETTE AND STURGEON BAY CAMPUSES
For more information, call the Green Bay campus at (920)498-6823, the Marinette campus at (715)735-9361, the Sturgeon Bay Campus at (920)743-2207, or (800)422-NWTC, 823.

WHAT IS APPRENTICESHIP?
It is an earn-while-you-learn program of on-the-job training combined with related classroom instruction that is normally provided by the district technical college. As an apprentice, students are trained under a written training agreement called an indenture. While indentured, the employer agrees to teach the student the skills of the trade and the apprentice agrees to learn the skills involved. Other conditions of the indenture, such as the length of training, amount of pay, the rate of periodic pay increases, and the related classroom hours are covered.

An apprenticeship is one of the best ways to enter a skilled occupation.

WHAT IS INVOLVED
An indentured apprentice works a regular work week, is paid apprentice wages, and also attends school on a regularly scheduled basis. The apprentice's progress in both the on-the-job training and classroom instruction is evaluated and appropriate records are maintained.

There is no discrimination in any phase of apprenticeship employment and training.

Upon completion of the training program, apprentices will receive a certificate and pocket card from the State of Wisconsin certifying each one as a completed apprentice. To protect the interests of all parties concerned and to assist in the enforcement of the various aspects of the agreement, the Wisconsin Department of Industry, Labor and Human Relations - Bureau of Apprenticeship Standards is given the responsibility of overall supervision of the apprenticeship program.

WHAT ARE THE QUALIFICATIONS FOR AN APPLICANT
The basic requirement is that the applicant be at least 16 years of age. In most cases, however, the applicant is also required to be a high school graduate or have passed the high school equivalency test.

Most employers and/or joint apprenticeship committees have approved selection standards with more exacting requirements. In some trades, the requirements for applicants include one or two years of high school math. Some trades require that the applicant take an aptitude test.

HOW LONG DOES IT TAKE
The length of the apprenticeship depends upon the skilled occupation involved. Apprentice programs vary from two to five years. The average program is four years in length.

WHAT RELATED CLASSROOM INSTRUCTION IS INVOLVED
The number of classroom hours range from 288 hours to 1,088 hours of paid related instruction, depending upon skilled occupation, with the average being 400 hours. This related instruction teaches the apprentice the theory behind the skills learned on-the-job. Apprentices may be required to attend night school on their own time and at their own expense.

WHERE IS THE RELATED TRAINING OFFERED
The "Clayton J. Smits" Apprenticeship Center of Northeast Wisconsin Technical College offers related classroom instruction at the Green Bay, Marinette, and Sturgeon Bay campuses.

WHAT IS AN APPRENTICEABLE OCCUPATION
An apprenticeable occupation is clearly identified and commonly recognized throughout an industry. It involves manual, mechanical, or technical skills and knowledge which require a minimum of 2000 hours of on-the-job work experience. It also requires an average of 400 hours of related classroom instruction to supplement the on-the-job training. The State of Wisconsin has recognized more than 300 apprenticeable occupations. There are many other occupations served by the "Clayton J. Smits" Apprenticeship Center of NWTC in addition to those listed here.

- Adjuster/Finisher
- Cabinetmaker
- Carpenter
- Electrician
- Construction Electrician
- Industrial Electrician
- Electrical/Instrumentation
- Foundry
- Instrumentation
- Iron Worker
- Line Repairer
- Machinist
- Regular Machinist
- Maintenance Machinist
- Tool & Die
- Machine Repair
- Mason
- Bricklayer
- Block Layer
- Cement Finisher
- Tile Setter
- Mechanical Adjuster
- Millwright
- Construction Millwright
- Industrial Millwright
- Maintenance Mechanic
- Machine Adjuster
- Pipefitter
- Industrial Pipefitter
- Plumber
- Resilient Floor
- Sheet Metal
- Steamfitter
HOW DO I START
Start by learning what you can about the skilled occupation in which you are interested. Talk to people who are in the occupation, both employers and employees, counselors at your high school or the local technical college, employers’ associations and labor unions.

Remember, looking for an apprenticeship is like looking for a job. Applications should be made directly with employers or Joint Apprenticeship Committees.

If you are entering an occupation that involves action by a Joint Apprenticeship Committee, it will be necessary for you to go through their selection and interview procedures. Very often a committee may maintain a waiting list of qualified applicants who passed the committee’s selection procedures.

WHAT IS AN APPRENTICESHIP EMPLOYER
An employer must be an individual, a Joint Apprenticeship Committee, an owner of a business, a company, or a corporation who can teach the skills involved in the occupation. All sponsors of indentured apprentices are equal opportunity employers.

WHAT ARE APPRENTICE WAGES
Wages in the various skilled occupations and localities vary; most apprentices start at approximately 50% of the current skilled rate. The apprentice is on a progressive wage scale with increases every six months, so that during the program the apprentice will average a minimum of 60% of the skilled rate.

HOW DO I GET MORE INFORMATION
For more information about a specific skilled occupation, contact:

Bureau of Apprenticeship Standards
2740 W. Mason Street
P. O. Box 19042
Green Bay, WI 54307-9042
(920) 492-5618

Associate Dean, Trades & Industry/Apprenticeship
Northeast Wisconsin Technical College
2740 W. Mason Street
P. O. Box 19042
Green Bay, WI 54307-9042
(920) 498-5462
1-800-422-NWTC ext. 462

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Architectural Program Code 106141

ASSOCIATE DEGREE - TWO YEARS
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5498 or (800)422-NWTC ext. 498.

PROGRAM DESCRIPTION
Architectural prepares students to work for architects, engineers or material manufacturers to produce drawings for wood, steel, masonry, and reinforced concrete structures.

Graduates of this program will be able to:
- Solve problems creatively and critically.
- Use building specifications for the choice of building materials.
- Exercise a proper work ethic.
- Produce group projects.
- Choose materials for the best use in building construction.
- Develop residential working drawings to meet code and client standards.
- Communicate architectural facts and ideas orally and in writing.
- Develop architectural working drawings for commercial buildings using steel, concrete, and masonry.
- “Take Off” estimate the materials required to construct a building.
- Draw structural wood, steel and concrete members and connections.
- Apply codes, manufactures standards and tables and technical manuals in design and drafting of a structure.
- Explain the design and construction process.
- Use basic surveying principles & equipment to gather & draft site data for building construction.
- Draw electrical, plumbing, heating and ventilating systems for buildings.
- Operate board drafting equipment.
- Operate a computer drafting equipment, hardware and software, to produce Architectural working drawings.
- Apply mathematical principles, formulas, & explain structural load tables as it applies to building construction.
- Display a professional attitude toward their vocational area.

REQUIREMENTS FOR PROGRAM ENTRY
- High school diploma or equivalent (Those who do not complete high school may establish their equivalency through GED testing or other entrance tests.)
- High school background in mathematics, science, and industrial education and/or construction related experience
- High school algebra or equivalent

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered algebra skills before entering this program. For a description of algebra skills, see the Basic Education section of this catalog on page 20.

CURRICULUM
The Architectural Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER
Course No. Description Credits
614-115 Architectural Drafting Prin 4
614-116 Architectural Computer Appl 2
614-121 Materials-Building Const 3
801-196 Communication-Interpers 3
804-130 Algebra-Trigonometry 3
809-197 Society-Amer Contemp 3
SEMESTER TOTAL 18

SECOND SEMESTER
606-120 CAD-Architectural 2
614-125 Residential Design/Drafting 4
614-131 Structural Draft-Wood/Steel 3
614-151 Estimating-Building 3
804-131 Algebra-Inter 3
806-150 Science 1-Tech 3
SEMESTER TOTAL 18

THIRD SEMESTER
614-135 Commercial Drafting-Steel 4
614-141 Structural Draft-Concret 3
614-160 Structural Analysis 3
801-195 Communication-Written 3
ELECTIVE 3
SEMESTER TOTAL 16

FOURTH SEMESTER
614-146 Systems-Mechanical 3
614-147 Commercial Draft-Concrete 4
801-197 Reporting-Technical 3
809-199 Psychology-Human Relations 3
ELECTIVE 3
SEMESTER TOTAL 16

SUGGESTED ELECTIVES for this program include Survey/Site Development (607-106), and Architectural Models (614-175).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

614-115 ARCHITECTURAL DRAFTING PRINCIPLES traditional methods to develop basic architectural drafting techniques; linework, lettering and geometric construction; terminology and construction methods; residential working drawing interpretation.

614-116 ARCHITECTURAL COMPUTER APPLICATIONS...PC hardware; Microsoft Windows, Word, and Excel; drafting software; Soft Plan; and an introduction to AutoCAD.

614-121 MATERIALS-BUILDING CONSTRUCTION...the manufacture, use, and limitations of builder’s materials and methods of selecting and evaluating materials.

614-125 RESIDENTIAL DESIGN/DRAFTING...residential design principles; architectural drafting techniques with traditional and CAD methods to develop residential working drawings, team projects, and presentation techniques.

614-131 STRUCTURAL DRAFT-WOOD/STEEL...application of math to buildings, structural wood, and structural steel; and standard methods of drawing structural wood and steel. (Prerequisite: 614-115).

614-135 COMMERCIAL DRAFTING—STEEL...the preparation of architectural working drawings for steel frame buildings, plans, elevations, sections, and details. (Prerequisite: completion of 2nd semester.


614-146 SYSTEMS-BUILDING MECHANICAL...mechanical system construction, mechanical system drafting techniques, working drawings, and handbook and reference use. (Prerequisite: completion of 3rd semester).

614-147 COMMERCIAL DRAFT—CONCRETE...working drawings for reinforced and precast concrete framed buildings, accepted symbols and dimensioning with field dimensions and preliminary drawings, and working drawings for a building having a structural concrete frame.

614-151 ESTIMATING-BUILDING...construction contract types, estimate types, cost accounting processes, construction costs, work measurement, and measured work principles. (Prerequisite: 614-120).

614-160 STRUCTURAL ANALYSIS...technical level principles of structural mechanics: basic calculations for beam analysis, exterior and interior forces on beams, wood beam and column design, and steel beam and column design. (Prerequisite: 614-120, 804-160).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Auto Body and Paint Technician  Program Code 314051

TECHNICAL DIPLOMA - ONE YEAR
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-6823 or (800)422-NWTC ext. 823.

PROGRAM DESCRIPTION
Auto Body and Paint Technician prepares students to repair and refinish damaged bodies and parts of automobiles and light trucks.

Graduates of this program will be able to:
• Straighten damaged autobody sheetmetal.
• Repair plastic and composite body parts.
• Refinish automobile body parts.
• Repair damaged automobile and light truck frames.
• Repair minor unibody structural damage.
• Estimate collision damage repair costs.
• Weld sheetmetal.
• Repair manual and passive restraint systems.
• Diagnose automotive mechanical systems.
• Diagnose automotive electrical and electronic systems.
• Repair steering and suspension systems.
• Repair stationary glass and moveable glass.
• Pass Automotive Service Excellence Autobody Technician prepares students

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
• High school background in mathematics, science, and technology education

READING LEVEL
Materials used within this program have an average reading level of 11th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Auto Body Technician, Refinishing Technician, Painting Technician, Frame and Alignment Technician, and Trim and Glass Installer.

AUTO BODY TECHNICIAN: Repairs damaged bodies of cars and light trucks; works with all body parts and sections; removes damaged panels and welds in new ones; removes and replaces accessories, glass, electrical parts, and interior trim; repairs or replaces plastic or composite parts; and straightens dents in sheet metal panels to restore the vehicle to pre-accident condition.

REFINISHING TECHNICIAN: Completes the refinishing phase of all repairs on cars, trucks, and fleet vehicles; does all stages of priming, sanding, and sealing prior to the paint application; determines the type and color of paint to do the refinishing; is familiar with mixing, tinting, and shading as well as the application of color for matching; and buffs, polishes, stripes, and details vehicle to complete repair job.

FRAME AND ALIGNMENT TECHNICIAN: Straightens, welds, replaces, and aligns all types of frames and suspensions of cars and trucks to restore them to factory specifications.

TRIM AND GLASS INSTALLER: Removes, replaces, or repairs all types of glass or glass-related problems on all types of vehicles; removes and replaces upholstery; and repairs interior and exterior trim.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Uni-Body Repair Specialist
• Insurance Adjuster and Appraiser
• Equipment and Supplies Specialist
• Frame and Alignment Specialist
• Manager/Shop Owner

CURRICULUM
The Auto Body and Paint Technician Technical Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 33 credits.

FIRST SEMESTER
Course No. Description Credits
405-316 Auto Body Collision Repair 12
405-326 Auto Body Refinishing 12
405-328 Auto Body Parts Proc 1
442-344 Welding-Light Gage 2
801-386 Communicating-Interpers 1
804-315 Math-Basic 1
804-320 Math-Auto Body 1
SEMESTER TOTAL 18

SECOND SEMESTER
404-302 Auto Electricity 1 1
404-321 Automotive Fundamentals 2
405-326 Auto Body Refinishing 12 OR
405-316 Auto Body Collision Repair 12
SEMESTER TOTAL 15

Both 405-316, Auto Body Collision Repair, and 405-326, Auto Body Refinishing, are offered each semester. A graduate must complete both courses in any order to receive a diploma.

ACCREDITATION: Certified as ASE training site, and to use ASE Seal of Excellence.

ASSOCIATION: National Institute for Automotive Service Excellence.

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

404-302 AUTO ELECTRICITY
DC electricity, magnetism, ohms, amperes, voltage, wire repair, series and parallel circuits, use of meters, semiconductors, and transistors.

404-321 AUTOMOTIVE FUNDAMENTALS
...preventive maintenance, suspension systems, tires, wheel alignment, brakes, air conditioning, and engine diagnosis fundamentals.

405-316 AUTO BODY COLLISION REPAIR
...body shop safety, hand and power tools, damaged metal analysis, basic sheet metal repairs, power jacking, panel replacement, body adjustment, glasswork, interior trim, restraint systems, underbody and frame, unitized repair.

405-326 AUTO BODY REFINISHING
...safety and environmental practices; understanding automotive finishes; surface preparation; refinishing equipment; finish application; tinting and blending; correcting finish defects; detailing; plastic identification, repair, and refinishing.

405-328 AUTO BODY PARTS PROCEDURES
...body construction, parts nomenclature, model identification, VIN numbers, paint codes, numbering systems, parts manuals, parts sources, and estimating.

442-344 WELDING-LIGHT GAGE
...welding processes, machines and accessories, gas metal arc welding (wire), oxyacetylene cutting, welding and brazing, and gas tungsten arc welding.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Automotive Maintenance Technician

TECHNICAL DIPLOMA - ONE YEAR

Offered at the Marinette campus. This may be the first year of the two-year Automotive Technician program in Green Bay. For more information, call the Marinette campus at (715)735-9361 or (800)422-NWTC.

PROGRAM DESCRIPTION
There are over 162 million automobiles and trucks on our highways. One out of every seven employed persons works in the manufacture, distribution, maintenance, or commercial use of motor vehicles. Because of the greater emphasis on electronics and computer systems, many more trained persons will be required to maintain these vehicles. The Automotive Maintenance Technician program prepares students for job entry in an automotive service department.

Major emphasis is placed on realistic and practical shop applications.
- Engine theory
- Drive trains
- Ignition systems
- Emissions
- Brakes
- Charging and starting systems
- Suspension, 4-wheeled alignment
- Fuel injection, fuel delivery systems

REQUIREMENTS FOR PROGRAM ENTRY
- High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
- High school background in mathematics, science, and industrial education classes

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math before entering this program. For a description of basic math, see the Basic Education section of this catalog on page 20.

CURRICULUM
The Automotive Maintenance Technician Technical Diploma is a one-year two-semester program. Upon graduation students will have completed 31 credits. A second year leading to a two-year Automotive Technician Technical Diploma can be taken on the Green Bay campus.

FIRST SEMESTER
<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>404-315</td>
<td>Automotive Engine Performance</td>
<td>5</td>
</tr>
<tr>
<td>404-316</td>
<td>Automotive DC Electricity</td>
<td>2</td>
</tr>
<tr>
<td>404-325</td>
<td>Auto Performance 2</td>
<td>5</td>
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<tr>
<td>404-326</td>
<td>Auto-Chassis Electricity</td>
<td>2</td>
</tr>
<tr>
<td>804-315</td>
<td>Math-Basic</td>
<td>1</td>
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<td>SEMESTER TOTAL</td>
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SECOND SEMESTER
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<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>404-314</td>
<td>Automotive Brakes</td>
<td>5</td>
</tr>
<tr>
<td>404-324</td>
<td>Auto-Steering/Suspension</td>
<td>5</td>
</tr>
<tr>
<td>442-350</td>
<td>Welding-Machine Trades</td>
<td>2</td>
</tr>
<tr>
<td>801-360</td>
<td>Communication-Applied</td>
<td>2</td>
</tr>
<tr>
<td>804-361</td>
<td>Math-Auto Mechanics</td>
<td>2</td>
</tr>
<tr>
<td>SEMESTER TOTAL</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

Students enrolled in this program should contact the NWTC Veteran's Office at (920)498-5445 if Veteran's information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

404-314 AUTOMOTIVE BRAKES...brake safety, wheel bearings, brake preventive maintenance, disc brake and drum brake overhaul, rotor and drum machining, master cylinder, brake lines and hoses, safety switches and valves, power and anti-lock brakes.

404-315 AUTO PERFORMANCE 1...engine safety, preventive maintenance, four stroke theory, Ford, GM and Chrysler ignition systems, test equipment, scopes.

404-316 AUTOMOTIVE DC ELECTRICITY/WIRING...Ohms, amperes, voltage, wire repair, series and parallel circuits, meter use, magnetism, wiring schematics and diagrams.

440-324 AUTO-STEERING/SUSPENSION...steering, suspension safety, wheel bearings, tire types/rating, wheel balance/alignment, tire changing, wheel and tire runout, shocks, struts, suspension components, steering components, steering gears, rack and pinion.

404-325 AUTO PERFORMANCE 2...engine and fuel safety, fuel types and ratings, fuel supply components, air induction components, carburetors, fuel injection systems, exhaust systems, turbocharger, vehicle emissions, emission testing, scanners.

404-326 AUTO-CHASSIS ELECTRICITY...batteries, starting and charging system components, lighting system components, indicator system components, horn system components, motor driven system components.

442-350 WELDING-MACHINE TRADES...oxygen/acetone welding; brazing; soldering; cutting; hardsurfacing; out-of-position welding; arc welding; machines/accessories, running beads; and types of joints, welding thin gauge, arc cutting, and heating.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Automotive Technician  Program Code 324042

TECHNICAL DIPLOMA - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-6823. The first year of the program is also offered on the Marinette campus at (715)735-9361, or (800)422-NWTC, 823.

PROGRAM DESCRIPTION
Automotive Technician prepares students for work in an automotive service department. Students learn to repair and service all mechanical parts of the automobile under conditions similar to actual shop environment.

Graduates of this program will be able to:
- Diagnose automatic transmission/transaxles.
- Diagnose automotive heating and air conditioning systems.
- Diagnose automotive manual drive train and axles.
- Diagnose automotive engine performance systems.
- Diagnose general internal automotive engine components.
- Repair automotive suspension and steering systems.
- Repair automotive brake systems.
- Repair automotive electrical systems.
- Repair rotational transmission/transaxles.
- Repair automotive heating and air conditioning systems.
- Perform automotive manual drive train and axle repair.
- Repair automotive engine control systems.
- Repair general automotive internal engine components.
- Diagnose automotive electrical systems.

REQUIREMENTS FOR PROGRAM ENTRY
- High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
- High school background in mathematics, science, and technology education

READING LEVEL
Materials used within this program have an average reading level of 11th grade.

MATH LEVEL
Students should have mastered basic math before entering this program. For a description of basic math, see the Basic Education section of this catalog on page 20.

ACCREDITATION: Certified as ASE training site and to use ASE Seal of Excellence

ASSOCIATION: National Institute for Automotive Service Excellence

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Automotive Service Technician, Automotive Electronics Specialist, Engine Repair Specialist, Transmission and Drive Train Specialist, Alignment Specialist, Service Manager or Assistant Service Manager, Service Writer.

AUTOMOTIVE SERVICE TECHNICIAN: diagnoses and locates trouble, makes the necessary repairs, makes the right parts replacements and adjustments on cars and light trucks.

AUTOMOTIVE ELECTRONICS SPECIALIST: diagnoses and locates problems, makes necessary repairs as related to engine body and transmission computer controls.

ENGINE REPAIR SPECIALIST: disassembles engines, inspects engine components, reassembles to factory specifications.

TRANSMISSION AND DRIVE TRAIN SPECIALIST: diagnoses and locates problems, makes necessary repairs to automatic and standard transmissions and drive members.

ALIGNMENT SPECIALIST: diagnoses, makes repairs, and adjusts suspension using computerized alignment equipment.

SERVICE MANAGER or ASSISTANT SERVICE MANAGER: meets customers and works with the technicians to help diagnose and locate vehicle trouble areas.

SERVICE WRITER: meets customers, listens to customer complaints, writes work orders for the automotive service technicians.

With additional education and/or work experience, graduates may find other opportunities for employment.
- Shop Coordinator
- Specialty Technician
- Fleet Dispatcher
- Specialty Repair Shop Owner

CURRICULUM
The Automotive Technician Technical Diploma is a two-year, four-semester program. Upon graduation, a student will have completed 63 credits. The Automotive Technician Program is ASE certified in all eight automotive program areas. All staff are ASE certified.

FIRST SEMESTER
Course No. Description Credits
404-314 Automotive Brakes 5
404-315 Automotive Engine Performance 5
404-316 Automotive DC Electricity 2
442-350 Welding-Machine Trades 2
804-315 Math-Basic 1
SEMESTER TOTAL 15

SECOND SEMESTER
404-324 Auto-Steering/Suspension 5
404-325 Auto Performance 2 5
404-326 Auto-Chassis Electricity 2
801-385 Communicating-Writing 1
801-386 Communicating-Interpers 1
804-361 Math-Auto Mechanics 2
SEMESTER TOTAL 16

THIRD SEMESTER
404-333 Auto-Heating/Cooling AC 4
404-336 Auto-Transmission/Transaxle 5
404-337 Auto-Electronics Computer 3
806-311 Hydraulics-Applied 2
806-333 Science-Mechanics 2
SEMESTER TOTAL 16

FOURTH SEMESTER
404-345 Auto-Engine Repair 5
404-346 Auto-Manual Trans/Differ 4
404-347 Auto-Electronics/Manuf Spec 3
404-395 Auto Tech Internship 3
420 355 Metal Processes 1 3
405-506 Auto Body Fundamentals 1
SEMESTER TOTAL 16

The first year of this program is offered on both the Marinette and Green Bay campuses.

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process and understanding of:

404-314 AUTOMOTIVE BRAKES ...brake safety, wheel bearings, brake preventive maintenance, disc brake and drum brake overhaul, rotor and drum machining, master cylinder, brake lines and hoses, safety switches and valves, power and anti-lock brakes.

404-315 AUTO PERFORMANCE 1 ...engine safety, preventive maintenance, four stroke theory, Ford, GM, and Chrysler ignition systems, test equipment, scopes.

404-316 AUTOMOTIVE DC ELECTRICITY/WIRING ...Ohms, amperes, voltage, wire repair, series and parallel circuits, meter use, magnetism, wiring schematics and diagrams.

440-324 AUTO-STEERING/SUSPENSION ...steering, suspension safety, wheel bearings, tire types/rating, wheel balance/alignment, tire changing, wheel and tire runout, shocks, struts, suspension components, steering components, steering gears, rack and pinion.

404-325 AUTO PERFORMANCE 2 ...engine and fuel safety, fuel types and ratings, fuel supply components, air induction components, carburetors, fuel injection systems, exhaust systems, turbocharger, vehicle emissions, emission testing, scanners.

404-326 AUTO-CHASSIS ELECTRICITY ...batteries, starting and charging system components, lighting system components, indicator system components, horn system components, motor driven system components.

404-335 AUTO-HEATING/COOLING AIR CONDITIONING ...related system safety, engine cooling flushing/recycling, heating system components, refrigerants, clean air automotive A/C system, A/C test equipment, A/C evacuation recycling and recharging.

404-336 AUTO-TRANSMISSION/TRANSAXLE ...transmission transaxle safety, transmission fluid, transmission maintenance, test procedures, external transmission adjustments, transmission removal, transmission overhaul.

404-337 AUTO-ELECTRONICS COMPUTER ...knowledge and skill development related to computer controlled systems, and vehicle systems ranging from chassis systems through extensive emphasis on engine performance and driveability related controls.

404-345 AUTO-ENGINE REPAIR ...engine lubrication system, four stroke theory, valve timing, engine failures, valve service cylinder head replacement, engine replacement, engine overhaul.

404-346 AUTO-MANUAL TRANSMISSION/ DIFFERENTIAL ...drivetrain safety, universal joints, half-shafts, transmission repair/overhaul, clutch, shaft linkage, four-wheel drive, differential.

404-347 AUTO-ELECTRONICS/ MANUFACTURERS SPECIFICATION ...GM-CCC, electronic and port fuel injection; Ford-electronic engine control IV, carburetor, single and multipoint fuel injection; Chrysler-oxygen feedback, Bosch electronic fuel injection systems.

404-395 AUTOMOTIVE TECHNICIAN INTERNSHIP ...student focused professional development based on problem solving, technical development, project assignments, and occupational accountability through measurable work place outcomes.

806-311 HYDRAULICS-APPLIED ...hydraulic schematics, drive systems, hydraulic system diagnosis/troubleshooting, hydraulic circuits, piping, fluid mechanics, seals, packings, hydraulic component operation, and accumulators.

420-355 METAL PROCESSES 1 ...shrink safety, hand tools, bench work, measuring tools, drill press/engine lathe operation, band/cut-off saws, and milling machines.

442-350 WELDING-MACHINE TRADES ...oxyacetylene welding; brazing; soldering; cutting; hardsurfacing; out-of-position welding; arc welding; machines/accessories, running beads, and types of joints; welding thin gauge, arc cutting, and heating.

520-350 CONSTRUCTION METALS ...steel, aluminum, copper, brass, bronze, lead, zinc, and magnesium.

606-306 AUTOMOTIVE TECHNICIAN INTERNSHIP ...student focused professional development based on problem solving, technical development, project assignments, and occupational accountability through measurable work place outcomes.

505-306 AUTO BODY FUNDAMENTALS FOR AUTO MECHANICS ...body construction, interior trim, interior mechanics, body alignment, wind noise and water leaks, plastic parts, glass replacement, and automotive paints.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
ASSOCIATE DEGREE - TWO YEARS
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5440 or (800)422-NWTC ext 440.

PROGRAM DESCRIPTION
Business Administration Credit prepares students for a career in credit management. Students learn to manage the promotion, control, and collection of consumer and business credit.

Graduates of this program will be able to:
• Perform basic finance math calculations.
• Operate a microcomputer word processing program.
• Analyze business and personal financial statements.
• Construct a personal financial statement.
• Use financial counseling techniques.
• Assess how economic policies and changes in the level of business activity affect the credit industry.
• Write credit related documents.
• Use an electronic spreadsheet computer program, e.g. Lotus 1-2-3 or Excel.
• Use a financial calculator.
• Manage the work of other people.
• Comply with state and federal laws.
• Evaluate a family’s personal financial management decisions.
• Collect past-due bills and payments.
• Evaluate the performance of a credit department.
• Make credit decisions.
• Conduct credit investigations.
• Screen credit applications.
• Complete applications for credit accounts.
• Promote the use of credit by customers.

REQUIREMENTS FOR PROGRAM ENTRY
• Basic math
• Ability to use computer keyboard

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math before entering this program. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Assistant Credit Manager, Collection Agent, Credit Administrator, Credit Manager Trainee, Loan Officer, Personal Banker, Financial Planning Assistant, or Customer Service Representative.

ASSISTANT CREDIT MANAGER: assists a branch or credit department manager in all phases of operation, including the extension, collection, and control of credit.

COLLECTION AGENT: works with organizations and clients to procure prompt payment of accounts; contacts customers, arranges for payments, and evaluates clients to assist in managing financial affairs, and may become involved with legal aspects of collections.

CREDIT ADMINISTRATOR: supports the credit process in the application of cash receipts, collection calls, and problem resolution.

CREDIT MANAGER TRAINEE: learns all phases of operating a financial institution or credit department, usually in preparation for a branch management position.

LOAN OFFICER: processes and investigates applications for credit and makes decisions on loan applications.

PERSONAL BANKER: assists customers in opening accounts, explains bank services, and becomes involved in other financial institution services.

FINANCIAL PLANNING ASSISTANT: aids financial planner in areas such as stocks, bonds, treasury bills, and other investments and may need additional course work in areas of securities.

CUSTOMER SERVICE REPRESENTATIVE: handles all general transactions in deposits, withdrawals, and certificates of deposit with customers and is responsible for balancing the cash drawer.

CURRICULUM
The Business Administration Credit Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER
Course No. Description Credits
101-110 Accounting 1 4
102-101 Math-Finance 3
103-103 Micro Basics MS Office 1 3
104-113 Credit-Consumer 3
801-197 Communication-Interpers 3
809-199 Psychology-Human Relations 3

SECOND SEMESTER
Course No. Description Credits
101-120 Accounting 2 4
102-150 Law-Business 3
102-153 Finance-Personal 3
104-114 Credit-Business 3
801-195 Communication-Written 3

THIRD SEMESTER
Course No. Description Credits
102-117 Financial Problem Solving 2
102-160 Law-Credit 3
102-165 Collection Methods 2
104-122 Credit Mgmt Practices 4
809-195 Economics 3

ELECTIVE 3

SEMESTER TOTAL 17

FOURTH SEMESTER
Course No. Description Credits
102-122 Financial Inst-Marketing 3
104-145 Credit Mgmt Seminar 4
104-146 Credit Internship 3
809-197 Society-Amer Contemp 3

ELECTIVE 3

SEMESTER TOTAL 16

SUGGESTED ELECTIVES for this program include: Financial Statement Analysis (102-172).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

102-101 MATH-FINANCE ...trade and cash discounts, use of financial calculators, time value of money/investment calculations, inventory valuation, depreciation, credit management operations, payroll, financial statement, and finance applications with reliance on financial calculation.

102-117 FINANCIAL PROBLEM SOLVING ...techniques, operations, tools, and basic concepts; time value of money; computer applications with emphasis on applications of Excel for business problem solving.

102-122 FINANCIAL INSTITUTION-MARKETING ...fundamental concepts of marketing and the application of these concepts. As financial institutions enter the electronic era, effective marketing will be critical in determining the course of the industry.

102-150 LAW-BUSINESS Common law contracts and sales contracts: formation, interpretation, performance, and discharge; the law of agency; corporations; and introduction to the American legal system: criminal and tort law.

102-153 FINANCE-PERSONAL Income and occupations, financial spending plan development, purchasing consumer goods and services, risk management plan development, investment plan development, retirement and estate planning, and financial advising.


102-165 COLLECTION METHODS Classes of debtors, collection laws, pre-legal and legal methods used in collections, bad check collections, and skip tracing.

194-113 CREDIT-CONSUMER ...the role of consumer credit; loan processes; collections; financial advising and counseling; loan, promotion, and bank policies; consumer, commercial, mortgage, and credit cards.

194-114 CREDIT-BUSINESS ...credit in the economy, business credit, management and analysis of commercial credit, basis of decision-making, financial statement analysis and interpretation, credit and collection policies, international trade credit, and control of credit operations.

194-122 CREDIT MANAGEMENT PRACTICES ...management functions in financial institutions; effective management concepts; planning, organizing, staffing, directing, controlling, and marketing management practices.

194-145 CREDIT MANAGEMENT SEMINAR ...case problems, research, and presentations related to credit administration, credit control, and collections; marketing goals and marketing strategy; effective management elements and management functions.

194-146 CREDIT INTERNSHIP ...internship or field observations, career exploration, self exploration, career planning, and career placement. (Prerequisite: last semester in program).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Child Care  Program Code 303071

TECHNICAL DIPLOMA - ONE SEMESTER
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5498 or (800)422-NWTC ext. 498.

PROGRAM DESCRIPTION
Child Care prepares students to plan and supervise activities for the normal and exceptional child. Courses are designed to meet state requirements.

Graduates of this program will be able to:
• Find employment as a Child Care Provider.
• Comply with Wisconsin DHFS Code for licensed child care.
• Demonstrate a workable, safe, developmentally appropriate learning environment for young children.
• Demonstrate sensitivity to diversity.
• Analyze observations of children and environment to promote positive changes in meeting the needs of children.

REQUIREMENT FOR PROGRAM ENTRY
• An interview or orientation prior to being accepted in the program
• A medical examination satisfactorily completed within three months before entering the program

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math before entering this program. For a description of basic math, see the Basic Education section of this catalog on page 20.

NOTE: A student who does not meet the above requirements, should consult an NWTC counselor about ways to make up any deficiencies through testing or course work.

EMPLOYMENT POTENTIAL
A graduate of the program may have the potential for employment as Assistant Child Care Teacher or Early Childhood Teacher in Group Centers; Family Day Care Provider; or Nanny.

ASSISTANT CHILD CARE TEACHER: works as an assistant to the Early Childhood teacher with a group of children.

EARLY CHILDHOOD TEACHER IN GROUP CENTERS: plans and implements daily activities with concern for health, safety, and welfare for a designated group of children; supervises the assistant child care teacher; supervises program that encourages self-esteem and positive self-image, social interaction, self-expression, communication skills, creative expression, gross and fine muscle development, and intellectual growth; and provides a flexible balance of active and quiet activities, individual and group activities, indoor and outdoor activities, free choice and guided activities. In addition, positive communications and supportive relationships with other staff and parents are essential.

FAMILY DAY CARE PROVIDER: plans and implements comprehensive program for the child’s total development with concern for child’s health, safety, and welfare in a family/home environment. In addition, to responsibilities of running a small business, the job description for the family day care provider is similar to the Early Childhood Teacher in Group Centers (see above).

NANNY: provides care, activities, and supportive guidance of children for an individual family in their home.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Child Day Care Program Director
• Day Camp Director
• Day Care Center Administrator
• Child Care Center Manager

NOTE: Students must have a Background Character Verification and a Criminal History Records Check prior to taking Course 307-355, Child Care-Field Experience-Community Based Child Care Center. Individuals convicted of specific identified crimes will not be eligible for graduation from the program or for employment in child care.

CURRICULUM
The Child Care Technical Diploma is a one-semester program. Upon graduation, a student will have completed 12 credits in the program.

FIRST SEMESTER
Course No. Description Credits
307-316 Childhood 1-Early 1
OR
307-318 Child/Family DayCare 1
307-317 Infant/Toddler Care 1
307-326 Childhood 2-Early 1
307-327 Creative Activities 1
307-328 Child Nutr/Health/Safety 1
307-331 Child Care-Special Needs 1
307-332 Child Care-Anti Sias 1
307-333 Child Care-School Age 1
307-334 Child Care-Observation 1
307-355 Child Care-Community 3

SEMESTER TOTAL 12

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

307-316 CHILDHOOD 1-EARLY...introduction to assistant child care teacher roles, child care profession, Wisconsin Code, child development, self concept, curriculum areas, guidance, schedules, routines/transition, child health, safety, abuse awareness. 90% attendance required.

307-317 INFANT/TODDLER CARE...the growth and development of children from birth to age 2 1/2 years including environmental needs, routine care, stimulating and responsive activities by the care giver, and parent/child communications. (Prerequisite: 307-326).

307-318 CHILD/FAMILY DAYCARE...child growth and development; provider-child-parent interactions; availability and use of community resources; family daycare business. 90% attendance required.

307-326 CHILDHOOD 2-EARLY...an introduction to the child care teacher role, community organizations, resources, observation, special needs, lesson planning, classroom environment, appropriate equipment, health and safety, positive guidance techniques, parent communication. 90% attendance required. (Prerequisite: 307-316).

307-327 CREATIVE ACTIVITIES...readiness activities, math/blocks, music, reading, literature/language, social studies, science, art, dramatic play, puppets, aesthetic development, food experiences and games for young children. (Prerequisite: 307-326).

307-328 CHILD NUTRITION/HEALTH/SAFETY...early childhood health, health education, communicable disease control, sanitation guidelines, safety guidelines, nutrition and nutrition education for child care providers. (Prerequisite: 307-326).

307-331 CHILD CARE-SPECIAL NEEDS...special needs in young children, handicapping conditions overview, observational skills, visual/hearing impaired children, cognitive/speech/language delays, attention disorders, physically impaired, and the referral process. (Prerequisite: 307-326).

307-332 CHILD CARE-ANTI BIAS...attitudes and beliefs about human differences, creating a developmentally appropriate anti-bias environment, and teaching techniques used to eliminate discriminating behavior. (Prerequisite: 307-326).

307-333 CHILD CARE-SCHOOL AGE...developmental characteristics, school-age environments, daily schedules, health, safety and nutrition guidelines, developmentally appropriate activities, guidance, discipline techniques, staff/parent relationships, community resources, and State rules and regulations for school-age teachers. (Prerequisite: 307-326).

307-334 CHILD CARE-OBSERVATION...the role of observation, areas to observe, observation techniques, data interpretation and planning based on data collected. (Prerequisite: 307-326).

307-335 CHILD CARE-COMMUNITY CENTER EXPERIENCE...group setting, classroom-based instructional experiences for infants through twelve years, child care staff roles/responsibilities. (Prerequisite: 307-326).
Civil Engineering Technology-Public Works Technician

ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5498 or (800)422-NWTC ext. 498.

PROGRAM DESCRIPTION
Civil Engineering Technology program prepares students to assist civil engineers and land surveyors in field, office, and laboratory work.

Graduates of this program will be able to:
- Operate spread sheets and word processing software.
- Calculate mathematical applications using algebra & trigonometry.
- Calculate mathematical applications related to geometry.
- Test basic construction materials such as asphalt, concrete, and aggregates.
- Perform standard tests on soil.
- Draw civil applications such as certified survey maps, plan and profiles, cut and fill, plot plans.
- Draw basic structural components involving steel and concrete.
- Describe construction and inspection methods.
- Report work projects in written form.
- Operate basic survey equipment.
- Operate advanced survey equipment such as total stations and global positioning systems.
- Summarize the major principles of land survey law.
- Compile data and draw information obtained from field survey operations.
- Summarize basic scientific principles related to the construction industry.
- Describe major environmental concepts of water supply and waste water.
- Describe human relations concepts.
- Describe contemporary American society aspects related to the construction industry.
- Report project functions in oral form.

REQUIREMENTS FOR PROGRAM ENTRY
- High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
- High school background in mathematics, science, and drafting
- High school algebra or equivalent

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered algebra skills before entering this program. For a description of algebra skills, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Civil Construction Inspector, Civil Drafter, Civil Soils-Materials Technician, and Survey Technician.

CIVIL CONSTRUCTION INSPECTOR: examines and interprets prints and specifications; confers with contractors and owners to enforce contract specifications; building codes, and zoning ordinances; and also inspects soils, asphalt, concrete, building construction, and underground utilities at the project site.

CIVIL DRAFTER: drafts detailed construction drawings, survey drawings, topographical profiles, related maps, and specification sheets; used in planning construction of highways and streets, buildings, river and harbor improvements, landfills, flood control, drainage, railroads, airports, water and sewer systems, and other civil engineering projects using conventional or Computer-Aided Drafting systems.

CIVIL SOILS-MATERIALS TECHNICIAN: samples and performs tests on soils, asphalt, concrete, aggregate and other construction materials; and identifies and classifies samples for foundation, construction, and environmental purposes.

SURVEY TECHNICIAN: obtains data and makes computations pertaining to angles, distances, elevations, points, contours, and other purposes using levels, total station, data collectors, transit, theodolites, distance measurement equipment, and other surveying instruments following approved surveying practices.

The program, along with a written exam, meets the requirements of the Wisconsin Department of Transportation for Assistant Certified Technician on aggregates.

Program also meets the educational requirements to become a Licensed Land Surveyor in the State of Wisconsin.

CURRICULUM
The Civil Engineering Technology-Public Works Technician Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER
Course No. Description Credit Hours
606-112 Engineering Applications 1
606-113 CAD 2
606-119 Sketching-Technical 2
607-121 Surveying 1 3
801-196 Communication-Interpers 3
804-130 Algebra/Trigonometry 3
809-197 Society-Amer Contemp 3
SEMMESTER TOTAL 17

SECOND SEMESTER
607-110 Materials Testing 4
607-124 CAD-Civil 2
607-126 Public Works Construction 4
801-195 Communication-Written 3
804-131 Algebra-Inter 3
SEMMESTER TOTAL 16

THIRD SEMESTER
607-131 Surveying 2 4
607-134 Surveying-Drafting 3
607-143 Soil Mechanics 4
804-132 Geometry-Analytic 3
806-150 Science 1-Tech 3
SEMMESTER TOTAL 17

FOURTH SEMESTER
607-146 Drafting-Structural 3
607-172 Environmental Technology 3
801-197 Reporting-Technical 3
809-199 Psychology-Human Relations 3
ELECTIVE 3
SEMMESTER TOTAL 18

SUGGESTED ELECTIVES: Land Surveying Law (607-162), Surveying II (607-144), and Civil Engineering Internship (607-195).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

606-112 ENGINEERING APPLICATIONS ... basics of a computer system, computer terminology, DOS, Windows NT, Microsoft Word, Microsoft Excel, and AutoCAD Release 13.

606-113 CAD (COMPUTER AIDED DRAFTING) ... AutoCAD terminology, drawing preliminaries, basic inquiry and setting commands, layer setting and manipulation, basic drawing and display commands, basic edit commands, plotting, blocks, and attributes. (Prerequisite: 606-112, 606-119).

607-110 MATERIALS TESTING ... inspection/testing concepts; material properties; quality aggregate, Portland cement concrete, and asphalt principles; concrete mixtures; sampling and testing aggregate and fresh concrete; testing cured concrete and asphalt; and quality control principles. (Prerequisite: 606-112, 804-130).

607-112 SURVEYING 1 ... general surveying principles, survey types, historical notes, engineer transit uses, distance measurement, level uses, elevation, angles, directions measurement, and stadia for mapping contour maps. (Corequisite: 804-130).

607-116 DRAFTING-STRUCTURAL ... elements of structural concrete, structural steel, glued laminated wood, timber, reinforcing steel, bar supports, structural steel shapes, connections and drawings, engineering and placing drawings, and print reading. (Prerequisite: 606-113).

607-124 CAD-CIVIL ... AutoCAD and other application software to develop projects in the Civil Engineering Technology discipline including total station plotting, mapping, plan and profile, cut and fill, attributes, simplified GIS. (Prerequisite: 606-113, 607-121).

607-126 PUBLIC WORKS CONSTRUCTION ... horizontal curves, sewer/water systems, civil engineering mapping, field inspector roles, and CAD applications. (Prerequisite: 606-113, 607-121).

607-131 SURVEYING 2 ... closed traverse measurements, traverse adjustments, data collection, rectangular coordinate use, land area computation, public land subdivision, land descriptions, horizontal circular curve field layout/computation, and computer applications. (Prerequisite: completion of 2nd semester).

607-134 SURVEYING DRAFTING ... survey tie drafting, survey map plat drawing, certified survey map drawing, subdivision/preliminary plat drawing, and basic use of AutoCAD and SOKKIA software in map preparation drawings. (Prerequisite: 607-131).

607-143 SOIL MECHANICS ... soil properties, classification principles, foundations, tests, analysis, particle size, Atterberg limits, moisture density, permeability, bearing, compressive strength, and subsurface investigation. (Prerequisite: 606-112, 804-130).

607-146 DRAFTING-STRUCTURAL ... elements of structural concrete, structural steel, glued laminated wood, timber, reinforcing steel, bar supports, structural steel shapes, connections and drawings, engineering and placing drawings, and print reading. (Prerequisite: 606-113).

607-172 ENVIRONMENTAL TECHNOLOGY ... hydrology concepts, environmental hydraulics, water quality/supply/distribution, sanitary/storm sewer systems, waste water treatment, solid/hazardous waste, and ground water monitoring. (Prerequisite: 804-130).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
PROGRAM DESCRIPTION
Control Systems Technology-Instrumentation deals with measuring and controlling devices and systems and prepares students to use pneumatic, digital, and analog test equipment to maintain process control systems.

Graduates of this program will be able to:
- Interpret graphical data.
- Solve problems using algebra, trigonometry, complex numbers, logarithms and exponentials.
- Manipulate electronic formulas.
- Relate mathematics to the field of electronics.
- Work in teams.
- Develop an industry acceptable work ethic.
- Measure circuit parameters.
- Adhere to laboratory safety standards.
- Verify measured values.
- Machine code a processor.
- Define the operation of a microprocessor system.
- Predict operation of circuits containing active components.
- Identify the component and appropriate nomenclature of basic electronic symbols.
- Apply boolean theorems to basic digital circuits.
- Apply circuit theorems to AC/OC RLC circuits.
- Identify the component and appropriate nomenclature of basic electronic symbols.
- Apply boolean theorems to basic digital circuits.
- Apply circuit theorems to AC/OC RLC circuits.
- Analyze an ON/OFF machine control circuit.
- Describe the various control techniques for single loop control.
- Operate functional control loops
- Use computer simulation of control loops.
- Calibrate industrial process measuring devices.
- Use measurement nomenclature as applied to instrumentation.
- Describe process variables.
- Describe the operation of pneumatic instruments.

REQUIREMENT FOR PROGRAM ENTRY
- High school algebra or equivalent

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered algebra skills before entering this program. For a description of algebra skills, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have potential for employment as Electronic Maintenance Technician, Field Service Technician, Instrument Installer, Instrument Technician, or Process Applications Technician.

ELECTRONIC MAINTENANCE TECHNICIAN: repairs, services, and programs in-plant automatic control equipment, computers, robots, and other electronic equipment

FIELD SERVICE TECHNICIAN: services, repairs, and overhauls equipment in the customer's facility; works with sales personnel; and demonstrates new equipment to potential customers.

INSTRUMENT INSTALLER: installs instrumentation devices and integrates them into the overall system for measuring or monitoring industrial processes.

INSTRUMENT TECHNICIAN: maintains, installs, and repairs process control devices; adjusts overall operation of process loops on equipment varying from simple pneumatic controls to sophisticated computer-controlled processes; and installs data acquisition system components.

PROCESS APPLICATIONS TECHNICIAN: works closely with engineers in the application of instrument systems to user's requirements.

With additional education and/or work experience, graduates may find other opportunities for employment:
- Control Systems Designer
- Instrument Engineer
- Instrument Shop Supervisor
- Process Control Engineer
- System Applications Designer

CURRICULUM
The Control Systems Technology-Instrumentation Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER
<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>605-116</td>
<td>Electronics-Digital</td>
<td>3</td>
</tr>
<tr>
<td>605-117</td>
<td>DC Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>605-118</td>
<td>Technical Skills/Practices</td>
<td>2</td>
</tr>
<tr>
<td>801-196</td>
<td>Communication-Interpers</td>
<td>3</td>
</tr>
<tr>
<td>804-150</td>
<td>Math 1-Tech</td>
<td>5</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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<td><strong>16</strong></td>
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SECOND SEMESTER
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<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>605-127</td>
<td>AC Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>605-128</td>
<td>Electronics-Basic</td>
<td>3</td>
</tr>
<tr>
<td>605-128</td>
<td>Control/Program Sys</td>
<td>3</td>
</tr>
<tr>
<td>804-160</td>
<td>Math 2-Tech</td>
<td>4</td>
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<tr>
<td>809-197</td>
<td>Society-Amer Contemp</td>
<td>3</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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<td><strong>16</strong></td>
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THIRD SEMESTER
<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>605-151</td>
<td>Control System Techniques</td>
<td>3</td>
</tr>
<tr>
<td>605-152</td>
<td>Measurement-Temp/Level</td>
<td>3</td>
</tr>
<tr>
<td>605-153</td>
<td>Instrumentation-Pneum</td>
<td>3</td>
</tr>
<tr>
<td>801-195</td>
<td>Communication-Written</td>
<td>3</td>
</tr>
<tr>
<td>806-150</td>
<td>Science 1-Tech</td>
<td>3</td>
</tr>
<tr>
<td><strong>ELECTIVE</strong></td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td></td>
<td><strong>18</strong></td>
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FOURTH SEMESTER
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<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>605-142</td>
<td>Control Systems Analy</td>
<td>3</td>
</tr>
<tr>
<td>605-154</td>
<td>Measurement-Flow/Analy</td>
<td>3</td>
</tr>
<tr>
<td>605-155</td>
<td>SCADA Software</td>
<td>2</td>
</tr>
<tr>
<td>605-156</td>
<td>Distributed Controls</td>
<td>1</td>
</tr>
<tr>
<td>801-197</td>
<td>Reporting-Technical</td>
<td>3</td>
</tr>
<tr>
<td>809-199</td>
<td>Psychology-Human Relations</td>
<td>3</td>
</tr>
<tr>
<td><strong>ELECTIVE</strong></td>
<td></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

This program is fully eligible for financial aid.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

605-116 ELECTRONICS-DIGITAL...basic logic gates, Boolean algebra, basic simplification techniques, flip-flops, counters, shift registers, computer number systems, binary arithmetic, half-and full-adders, complement arithmetic, and arithmetic ICs using TTL ICs. (Corequisite 804-150).

605-117 DC FUNDAMENTALS...scientific notation, Ohm's law applied to DC series and parallel circuits, circuit analysis tools and magnetism, measuring instruments, circuit analysis, circuit troubleshooting and computer circuit. (Corequisite: 804-150).

605-118 TECHNICAL SKILLS/PRACTICES...method learning and general practice experience associated with electrical/electronic parts assembly, disassembly, repair, fabrication, and documentation.

605-127 AC FUNDAMENTALS...alternating current generation, reactive components, reactance, Ohm's Law as applied to AC circuits, power and resonance; rectangular and polar notation; graphing, computer simulations, and use of AC measuring instruments. (Prerequisite: 605-117, 804-150).

605-128 ELECTRONICS-BASIC...electronic devices, circuit analysis and troubleshooting; emphasis on Diode theory and circuits, voltage regulation and amplifier theory with ideal voltage and current amplifier circuits. (Prerequisite: 605-117, Co-requisite 804-160).

605-142 CONTROL SYSTEMS ANALYSIS...control considerations, exponential lag, step/frequency response, dead time lag, process combinations, function response characteristics, process/controller combination, system evaluation, closed loop, control system design, and industrial processes control systems. (Prerequisite: completion of 3rd semester).

605-151 CONTROL SYSTEM TECHNIQUES...electronic/digital control loops; schematic diagrams; measurement and transmission instruments; and final control devices concerned with the connecting, interaction, tuning, and troubleshooting of loops. (Prerequisite: completion of 2nd semester).

605-152 MEASUREMENTS-TEMPERATURE/LEVEL...theory of measurement and its application to mechanical and electrical devices used in measuring level and temperature; ultrasonic transmitters, RTDs, thermocouples, and head measuring devices. (Prerequisite: completion of 2nd semester).

605-153 INSTRUMENTATION-PNEUMATICS...instrumentation diagrams, symbology, and mathematics; pressure measurement and compressed air systems; study of pneumatic transmitter, converter, and controller instruments as used in closed loop control. (Prerequisite: completion of 2nd semester).

605-154 MEASUREMENTS-FLOW/ANALYTICAL...theory of measurement as applied to mechanical and electrical devices used in obtaining flow and analytical measurements such as pH, consistency, humidity, conductivity, and viscosity. (Prerequisite: completion of 3rd semester).

605-155 SCADA SOFTWARE...SCADA software introduction using Genesis as a platform for learning, operator interface creation, data flow and signal path following through basic strategy using software's debugging capabilities. (Prerequisite: completion of 3rd semester).

605-156 DISTRIBUTED CONTROLS...distributed control systems as used in process control industry, basic architectures, types and protocols of networks used to distribute control, overview of systems. (Prerequisite: completion of 3rd semester).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Corrections Science  Program Code 105042

ASSOCIATE DEGREE - TWO YEARS
Offered at the Green Bay campus. For more information, call (920)498-6806 or (800)422-NWTC ext. 806.

PROGRAM DESCRIPTION
Corrections Science relates theory to current practice trends, problems, and issues in jail and prison settings. Criminal justice students study correctional counseling, sociology, and security.

Graduates of this program will be able to:
• Analyze security procedures.
• Exercise interviewing techniques.
• Examine the state and federal court structure.
• Apply restraints.
• Outline the juvenile and adult criminal justice system.
• Prepare reports.
• Interpret correctional law.
• Summarize the probation and parole structure.
• Practice oral communication skills.
• Compare the numerous theories of criminal behavior.
• Contrast the various components of the criminal justice system.
• Distinguish the numerous functions of community corrections.
• Differentiate the components that comprise corrections.
• Summarize the administrative and managerial functions within the correctional system.
• Be eligible to become a state certified juvenile detention officer.
• Be eligible to become a state certified jail officer.
• Apply basic math skills
• Demonstrate keyboarding and computer skills
• Employ telecommunicator skills (dispatching)

STUDENTS SEEKING CERTIFICATION CAN ALSO:
• Practice jail fire safety
• Assess jail health care.
• Employ principles of subject control

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent
• Good writing and communication skills
• Strong organizational skills

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Correctional Officer, Youth Care Worker, and Detention Worker.

CORRECTIONAL OFFICER: monitors, supervises, and informally counsels inmates under his/her control; works cooperatively with other institutional staff; maintains order within the institution; enforces rules and regulations; searches inmates for contraband items such as weapons or drugs; transports inmates; settles disputes between inmates; enforces discipline; and reports verbally and in writing about inmate conduct and the quality and quantity of work done by inmates.

YOUTH CARE WORKER: monitors the whereabouts and activities of people under his/her responsibility, informally counsels, and provides proper personality development of clients.

DETENTION WORKER: oversees and monitors juveniles within a secure detention facility, maintains order within the setting, cooperates with staff and law enforcement personnel, is responsible for oral and written communications with a variety of agencies, and is knowledgeable about federal and state laws concerning juvenile rights.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Adult/ Juvenile Administrator
• Institutional Case Worker/ Social Worker
• Probation/ Parole Administrator
• Probation/Parole Agent
• Youth Counselor/ Case Aide
• Youth Detention Home Supervisor

A student who completes the NWTC Corrections Sciences Associate Degree program and the two specific electives will be eligible for State certification as a County Jail Officer and a Juvenile Detention Officer upon graduation and being employed by a Wisconsin Law Enforcement Agency.

CURRICULUM
The Corrections Science Associate Degree is a two-year, four-semester program. Upon graduation a student will have completed 65 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>106-145</td>
<td>Keyboarding</td>
<td>1</td>
</tr>
<tr>
<td>504-116</td>
<td>Criminal Justice-Intro</td>
<td>3</td>
</tr>
<tr>
<td>504-122</td>
<td>Correctional Admin</td>
<td>3</td>
</tr>
<tr>
<td>504-155</td>
<td>Corrections-Community</td>
<td>3</td>
</tr>
<tr>
<td>801-196</td>
<td>Communication-Interpers</td>
<td>3</td>
</tr>
<tr>
<td>809-199</td>
<td>Psychology-Human Relations</td>
<td>3</td>
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SECOND SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>504-123</td>
<td>Correctional Institution</td>
<td>3</td>
</tr>
<tr>
<td>504-133</td>
<td>Correctional Sociology</td>
<td>3</td>
</tr>
<tr>
<td>504-172</td>
<td>Criminology</td>
<td>3</td>
</tr>
<tr>
<td>801-195</td>
<td>Communication-Written</td>
<td>3</td>
</tr>
<tr>
<td>804-152</td>
<td>Math-Protective Services</td>
<td>3</td>
</tr>
<tr>
<td>809-197</td>
<td>Society-Amer Contemp</td>
<td>3</td>
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THIRD SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>504-132</td>
<td>Courts/Jurisdiction</td>
<td>3</td>
</tr>
<tr>
<td>504-134</td>
<td>Correctional Interviewing</td>
<td>3</td>
</tr>
<tr>
<td>801-170</td>
<td>Writing-Protective Serv</td>
<td>2</td>
</tr>
<tr>
<td>801-198</td>
<td>Speech</td>
<td>3</td>
</tr>
<tr>
<td>804-175</td>
<td>Computer: Police</td>
<td>2</td>
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<tr>
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</table>

FOURTH SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>504-145</td>
<td>Corrections Law</td>
<td>3</td>
</tr>
<tr>
<td>504-146</td>
<td>Probation/ Parole</td>
<td>3</td>
</tr>
<tr>
<td>504-147</td>
<td>Correctional Security</td>
<td>3</td>
</tr>
<tr>
<td>504-154</td>
<td>Youth-Ching Community</td>
<td>3</td>
</tr>
<tr>
<td>ELECTIVE</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

SUGGESTED ELECTIVES: Narcotics and Vice Investigation (504-151), Scientific Crime Laboratory (504-143), and Corrections Internship (504-171).

Electives required for State certification are: Principles of Subject Control (POS) Training (504-178), and Jail Health Care & Fire Safety (504-179).

This program is fully eligible for financial aid.
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

**504-116 CRIMINAL JUSTICE-INTRODUCTION**
...introductory course on causes of crime, criminal law, law enforcement, courts, and corrections on the local, state, and federal levels.

**504-122 CORRECTIONAL ADMINISTRATION**
...chain of command, roles of the correctional supervisor, administrative structures, current management practices and problems, personnel needs, organizational theories, mission goals, policy making, inmate discipline, and report writing.

**504-123 CORRECTIONAL INSTITUTIONS**
...the evolution of punishment, development of prisons, southern penal systems, the “Big House” era, prisoner movement, inmate groups, special offender groups, the female offender, prison programs, prison services.

**504-132 COURTS/JURISDICTIONS**
...development of the American judicial system, the Federal and Wisconsin court structure, Wisconsin judicial rules and procedures from complaint to sentencing as they impact police or correctional officers.

**504-133 CORRECTIONAL SOCIOLOGY**
...inmate adjustment process, informal organizations, responsibilities of a correctional officer, adult/juvenile admission processes, supervision of “special” inmates, suicide prevention, juvenile detention operations, juvenile release processes, and stress.

**504-134 CORRECTIONAL INTERVIEWING**
...criminal justice interviewing, preliminary interviewing, basic skills, empathy, use of silence, summarization skills, immediacy skills, questioning skills, confrontation skills, and assertion skills.

**504-145 CORRECTIONS LAW**
...laws, rules, and standards affecting jails, Federal and State Court systems, criminal and civil actions, criminal sentences, plea bargaining, community-based sanctions, sentencing statutes and guidelines, prisoner rights and inmate litigation.

**504-146 PROBATION/PAROLE**
...criminal justice system, probation and parole, types of offenses, sentencing process, presentence investigation, revocation procedures, alternatives to incarceration, parole board functions, Parole Officer responsibilities, and guidelines for releasing inmates.

**504-147 CORRECTIONAL SECURITY**
...inmate security control, inspections, movements, counts; resident protection, privacy, safety, searches, contraband, restraints, equipment; building security; detection devices; legal aspects, personnel protection; building cleaning; hostage negotiations; and pad subduing techniques.

**504-154 YOUTH-CHANGING COMMUNITY**
...juvenile delinquency, historical development controlling children, gangs, family, endangered children; legal requirements of handling juveniles; discipline of juveniles; supervision of juveniles; and community based programs.

**504-155 CORRECTIONS-COMMUNITY**
...criminal justice system stages, community-based corrections, diversion programs, pre-trial release programs, restitution, community service, temporary release programs, half-way houses, female offenders, drug and alcohol abusing offenders, and juvenile programs.

**504-172 CRIMINOLOGY**
...nature, extent, and distribution of crime in the United States; biological, psychological, and sociological aspects of crime causation; and legal and political implications of crime prevention and control.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Dental Assistant  Program Code 315081

TECHNICAL DIPLOMA - ONE YEAR

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920) 498-5530 or (800) 422-NWTC ext. 539 or TTD# (920) 498-5470.

PROGRAM DESCRIPTION
Dental Assistant program trains students to prepare patients for treatment, sterilize instruments and assist the dentist at chairside.

A graduate of this program will be able to:
• Be technically proficient.
• Assist with chairside procedures.
• Manipulate dental materials.
• Perform laboratory duties.
• Execute Infection Control/Universal Precaution techniques.
• Prepare for various dental patients.
• Perform Radiographic/Imaging techniques.
• Maintain inventory.
• Perform receptionist/front office skills.
• Maintain dental equipment.

A student will be required to purchase his/her uniforms, pay for liability insurance for dental clinical experience courses, and provide his/her own transportation to the dental office.

The Dental Assistant program is accredited by the American Dental Association - Commission on Dental Accreditation.

211 East Chicago Avenue
Chicago, IL 60611-2678
(312) 440-2500

REQUIREMENTS FOR PROGRAM ENTRY
• An acceptable level on required entrance tests
• High school diploma or equivalency
• One semester of typing/keyboarding skills (Macintosh desirable)
• An interview or orientation before entering the program
• Medical and dental examinations satisfactorily completed before entering the program
• A science background with emphasis in Advanced Biology, Anatomy, and Physiology is desirable.

READING LEVEL
Materials used within this program have an average reading level of 14th grade.

MATH LEVEL
Students should have mastered basic math skills.
For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Chairside Assistant, Claims Approver, Dental Laboratory Assistant, Office Assistant, or Sales Representative/Distributor.

CHAIRSIDE ASSISTANT: prepares patients for treatments; assists the dentist in chairside duties; exposes and processes radiographs; performs laboratory procedures in settings such as general dental offices or offices which specialize in areas such as orthodontics, endodontics, prosthodontics, oral surgery, pediatrics, periodontics, or restorative and cosmetic dentistry.

CLAIMS APPROVER: processes dental insurance claims using a computer terminal.

DENTAL LABORATORY ASSISTANT: performs laboratory procedures.

OFFICE ASSISTANT: makes patient appointments; handles telephone calls, correspondence and records; keeps the books; maintains and operates office machines; and orders supplies.

SALES REPRESENTATIVE/DISTRIBUTOR: sells dental products and supplies.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Dental Office Manager
• Dental Laboratory Technician

CURRICULUM
The Dental Assistant Technical Diploma is a one-year, two-semester program. Upon graduation a student will have completed 28 credits. This program is accredited by the American Dental Association, Commission on Dental Accreditation. Upon the successful completion of the program, a student will be eligible to take the Dental Assistant Certification Board Exam.

FIRST SEMESTER
Course No. Description       Credits
508-309 Dental Pers Relationship        1
508-310 Dental Science-Biomedical         2
508-311 Dental Asst 1-Chairside         4
508-312 Dental Materials                4
508-316 Dental Clinic Exp 1             2
508-319 Radiography 1-Dental Asst       1

SEMMER TOTAL             14

SECOND SEMESTER
105-303 Dental Office Mgmt             1
508-322 Dental Clinic Exp 2             2
508-324 Dental Lab Procedures          3
508-326 Dental Asst 2-Chairside        4
508-328 Dental Office Med Emergency    1
508-329 Radiography 2-Dental Asst      2
801-386 Communicating-interpers        1

SEMMER TOTAL             14

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.

SCHOLARSHIPS
The Brown-Door-Kewaunee Dental Society, the Northeast Wisconsin Dental Assistant Association, and the NWTC Dental Assistant Program offer three scholarships, $500.00, $225.00, and $150.00, to students in the Dental Assistant program. Criteria are financial need, grade point average, and attendance. NWTC also has other scholarships available to students.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

105-303 DENTAL OFFICE MANAGEMENT ...uses of a dental computer program (Macintosh), appointment control, records management, recall programs, fees, payment plans, and collections. (Prerequisite: completion of 1st semester).

508-309 DENTAL/PERSONAL RELATIONSHIPS ...history, a dental team, ethics and jurisprudence, nutrition and personal improvement, psychology of patient management skills, employment, interviewing, and the importance of working as a team. (Prerequisite: admission to program).

508-310 DENTAL SCIENCE-BIOMEDICAL ...immunology, oral embryology, various pathogenic and nonpathogenic micro-organisms, and oral pathology. (Prerequisite: admission to program).

508-311 DENTAL ASSISTANT 1-CHAIRSIDE ...dental office components, infection control, instrument transfer, oral evacuation, 4/6-handed dentistry, instrument I.D., tray set-up, oral health, rotary instrument and handpiece I.D., rubber dam application. (Prerequisite: admission to program).

508-312 DENTAL MATERIALS ...dental material properties, lab infection control and hazardous material handling, impression materials care of lab and operating equipment, gypsum products, restorative and preventive materials, tray set-ups. (Prerequisite: admission to program).

508-318 DENTAL CLINICAL EXPERIENCE 1 ...practical experience in patient relations, chairside skills, dental material manipulation, and limited radiography in the dental office and on-campus clinic. (Prerequisite: admission to program).

508-319 RADIOGRAPHY 1-DENTAL ASSISTANT ...introduction to exposing radiographs, processing, mounting, landmarks, charting, oral cavity, periodontium, facial and tooth growth, and tooth morphology. (Prerequisite: admission to program).

508-322 DENTAL CLINICAL EXPERIENCE 2 ...advanced practical experience in patient relations, chairside skills, laboratory procedures, radiography, dental materials, specialties, emergency procedures, and business office operations in the dental office and on-campus clinic. (Prerequisite: completion of 1st semester).

508-324 DENTAL LABORATORY PROCEDURES ...denture and crown/bridge prostheses, construction of acrylic trays, temporary restorations, mouth guards, bleaching trays, waxes, impression and surgical materials, and model trimming. (Prerequisite: completion of 1st semester).

508-326 DENTAL ASSISTANT 2-CHAIRSIDE ...occupational health and safety, management and maintenance of dental office and inventory, coronal polish, preventive and operative dentistry, fluoride application, periodontics, oral surgery, orthodontics, endodontics, pediatrics and special patients. (Prerequisite: completion of 1st semester).

508-328 DENTAL OFFICE MEDICAL EMERGENCIES ...patient records, taking of vitals, oral exam, special patient management, medical emergencies, pharmacology and pain control, and CPR renewal. (Prerequisite: completion of 1st semester).

508-329 RADIOGRAPHY 2-DENTAL ASST ...radiation theory, safety procedures, dental exposure techniques, evaluation techniques, and clinical application. (Prerequisite: 508-319).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Dental Hygienist

ASSOCIATE DEGREE - TWO YEARS PLUS ONE SUMMER

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920) 498-5530 or (800)422-NWTC ext. 530 or TDD (920) 498-5470.

PROGRAM DESCRIPTION
Dental Hygienist prepares students to perform oral prophylaxis, apply preventive agents, expose radiographs, and teach patients oral care.

Graduates of this program will be able to:
- Pass a Dental Hygiene National Board and Central Regional Dental Testing Service Exam.
- Maintain a complete medical and dental history.
- Perform a complete examination of the oral structures.
- Record findings of a complete examination of the oral structures.
- Interpret examination data to formulate a dental hygiene diagnosis.
- Identify the need for radiographs.
- Obtain radiographs of diagnostic quality.
- Interpret radiographs distinguishing normal from abnormal.
- Sequence educational and clinical services based on Diagnosis.
- Identify treatment modalities based on examination data.
- Communicate planned treatment to clients, and interdisciplinary health team members.
- Administer the appropriate intervention/implementation technique based on client needs.
- Apply principles of instrumentations without trauma.
- Control pain, anxiety and trauma through a variety of strategies.
- Respond to medical emergencies.
- Determine the clinical outcomes of interventions, using indices instruments and examination techniques.
- Determine the effectiveness of dental hygiene services and client participation.
- Establish hygiene maintenance interval based on client's oral health status.
- Apply dental hygiene process in the development of community based programs.
- Practice dental hygiene in a multi-disciplinary and/or culturally diverse environment.
- Modify treatment to meet needs of special consideration clients.
- Implement measures to minimize occupational hazards in the workplace.
- Communicate with clients and other professionals.
- Communicate professional knowledge in understandable terms to various audiences verbally and in writing.
- Comply with state and federal laws relating to the profession.
- Maintain accuracy and confidentiality of the client record.
- Serve all clients and the community without discrimination.
- Deliver treatment in accordance with psychosocial needs of clients.
- Practice team approach for interactions with clients and other professionals.
- Solve problems using scientific principles.
- Analyze published reports and research relevant to the practice of dental hygiene.

EMPLOYMENT POTENTIAL
Prior to licensure as a Registered Dental Hygienist, a student is required to pass the Dental Hygiene National Board Examination and a Regional Practical Examination. A Registered Dental Hygienist may practice dental hygiene in a city, county, or multi-county health department; long term care facility, hospital, or school; in dental sales; or in private practice.

With additional education and/or work experience, graduates may find other opportunities for employment.
- Dental Hygiene Instructor
- Public Health Dental Hygienist
- Dental Laboratory Technician
- Dental Sales

The Dental Hygienist program is accredited by the American Dental Association - Commission on Dental Accreditation.

211 East Chicago Avenue
Chicago, IL 60611-2678
(312) 440-2500

A student will be required to purchase his/her uniforms and instruments and pay for liability insurance for dental clinical courses.

REQUIREMENTS FOR PROGRAM ENTRY
- A minimum standard composite score of 20 on the ACT assessment
- One year of biology and one year of chemistry.
- Grades of C or better must have been earned in the science courses
- One year of algebra and advanced math or obtain an 80% satisfactory score on the NWTC mathematics placement test
- Orientation before entering the program
- Medical and dental examinations satisfactorily completed within three months before entering the program

Applications will be processed when requirements have been completed.

READING LEVEL
Materials used within this program have an average reading level of 14th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

NOTE: A student who does not meet the above requirements should consult an NWTC counselor about ways to make up any deficiencies through testing or course work.

CURRICULUM
The Dental Hygienist Associate Degree is a two-year, one-summer, five-semester program. Upon graduation a student will have completed 72 credits.

SUMMER SEMESTER
Course No. Description Credits
* 806-163 Chemistry-BioOrganic 3
* 806-182 Anatomy/Physiology 1 3
SEMESTER TOTAL 6

FIRST SEMESTER
* 508-111 Anatomy-Head/Neck 4
* 508-114 Dental Hygiene-Pre Clin 2
* 508-115 Dental Hygiene-Pre Clin/Lec 2
* 508-116 Histology/Embryology 1
* 508-117 Occupational Safety/Health 1
* 806-183 Microbiology 4
* 806-187 Anatomy/Physiology 2 3
SEMESTER TOTAL 17

SECOND SEMESTER
* 508-112 Radiography 3
* 508-113 Periodontology 1 1
* 508-120 Dental Hygiene 1-Clin 2
* 508-121 Dental Materials 2
* 508-124 Dental Hygiene 1/Clin/Lec 2
* 508-132 Pathology-General Oral 3
801-195 Communication-Written 3
SEMESTER TOTAL 16

THIRD SEMESTER
* 508-123 Periodontology 2 2
* 508-134 Dental Hygiene 2-Clin 3
* 508-136 Dental Hygiene 2-Clin/Lec 1
* 508-142 Dental Health-Community 2
801-196 Communication-Interpers 3
806-185 Pharmacology 2
ELECTIVE 3
SEMESTER TOTAL 16

FOURTH SEMESTER
* 508-144 Dental Hygiene 3-Clinic 3
* 508-146 Dental Hygiene 3-Lecture 2
801-198 Speech 3
809-196 Sociology-Intro 3
809-198 Psychology-Intro 3
ELECTIVE 3
SEMESTER TOTAL 17

SUGGESTED ELECTIVE: Nutrition (303-180).

No final grade lower than C is acceptable in any of the courses marked with an asterisk. A student must repeat that particular course to achieve a C or better final grade in order to continue in or graduate from this program. If the course is segmented, the successful retake must occur before continuing the sequence.

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

508-111 ANATOMY-HEAD/NECK ...dental, oral, and facial anatomy including dental nomenclature, anatomy of head and neck, muscles of mastication and facial expression, and nerve and blood supply of the head and neck area. (Prerequisite: admission to program).

508-112 RADIOGRAPHY ...radiographic techniques, principles of radiography with emphasis on radiation safety, radiobiology, darkness techniques, anatomical landmarks, radiographic interpretation. (Prerequisite: completion of 1st semester).

508-113 PERIODONTALYSIS 1 ...anatomy, histology, physiology of the alveolar bone, periodontal ligament, gingiva, cementum, and evaluation of the periodontium in healthy and diseased state. (Prerequisite: completion of 1st semester).

508-114 DENTAL HYGIENE-PRE CLINIC (LAB) ...person oral hygiene, operation and maintenance of dental equipment, exposure control techniques, assessment of medical records, oral examination, instrumentation, polishing, and instrument sharpening. (Prerequisite: admission to program).

508-115 DENTAL HYGIENE-PRECLINICLECTURE ...professional ethics, personal oral hygiene, operation and maintenance of dental equipment, infection control, medical records, oral examination, instrumentation, polishing, and instrument sharpening. (Prerequisite: admission to program).

508-116 HISTOLOGY/EMBRYOLOGY ...basic cell structures, embryologic development of the face and oral cavity; formation of teeth and bone, and eruption and exfoliation of teeth. (Prerequisite: admission to program).

508-117 OCCUPATIONAL SAFETY/HEALTH ...prevention, recognition, and response to medical emergencies; occupational health and safety in accordance with OSHA mandates and CDC guidelines; epidemiology; prevention of transmissible diseases; and chemical hazard communication. (Prerequisite: admission to program).

508-120 DENTAL HYGIENE 1-CLINIC ...application and practice of exposure control, hazard communication, dental examinations, dental hygiene assessments, treatment planning, interventions, evaluations, and medical emergencies in the clinical setting. (Prerequisite: completion of 1st semester).

508-121 DENTAL MATERIALS ...sources, properties, applications, and manipulation techniques of dental materials; emphasis on characteristics of dental materials and their impact within the oral environment. (Prerequisite: completion of 1st semester).

508-123 PERIODONTALYSIS 2 ...examination, planning, implementation, and evaluation of client periodontal status; approach to therapy, maintenance, and epidemiology of periodontal disease; emphasis on the relationship of periodontics to the practice of dental hygiene. (Prerequisite: 508-113).

508-124 CLINICAL DENTAL HYGIENE 1-LECTURE ...treatment planning, caries process, fluoride therapy, sonication/ultrasonic scaling, oral health maintenance and disease control, air-invasive polishing, tooth hypersensitivity, techniques; preparation, and dental hygiene history. (Prerequisite: completion of 1st semester).

508-132 PATHOLOGY-GENERAL ORAL ...nature of disease, variants of normal; inflammation; immunity, regeneration, and repair; developmental disorders; cysts, neoplasia, genetic disorders; and oral manifestations of systemic diseases. (Prerequisite: completion of 1st semester).

508-134 DENTAL HYGIENE 2-CLINIC ...application of assessments, treatment, and prevention planning; advanced clinical skills including root planing; patient counseling techniques; special needs patients. (Prerequisite: completion of 2nd semester).

508-136 DENTAL HYGIENE 2-CLINICLECTURE ...theory of establishing patient relationships, patient counseling techniques, patient compliance, adult learning, designing a personalized prevention plan, phase microscope, and dental hygiene care for special patients. (Prerequisite: completion of 2nd semester).

508-142 DENTAL HEALTH-COMMUNITY ...principles of public health dentistry relevant to current issues. Students participate in the development, implementation, and evaluation of community dental health projects. (Prerequisite: completion of 2nd semester).

508-144 DENTAL HYGIENE 3-CLINIC ...advanced instrumentation, root planing skills, use of oral irrigation devices, preparation for the CRDTS Practical Exam. (Prerequisite: completion of 3rd semester).

508-146 DENTAL HYGIENE 3-LECTURE ...local anesthesia; dental specialties, team dentistry; practice management; legal relationships in dental hygiene practice; instrumentation for State Certification Exam; smoking cessation; carpal tunnel syndrome; implant client. (Prerequisite: completion of 3rd semester).

508-310 DENTAL SCIENCE-BIOMEDICAL ...immunology, oral embryology, various pathogenic and nonpathogenic micro-organisms, and oral pathology. (Prerequisite: admission to program).

508-311 DENTAL ASSISTANT 1-CHAIRSIDE ...dental office equipment, infection control, instruments transfer, oral evacuation, 4/6-handled dentistry, instrument I.D., tray set-up, oral health, rotary instrument and handpiece I.D., rubber dam application. (Prerequisite: admission to program).

508-312 DENTAL MATERIALS ...dental material properties, lab infection control and hazardous material handling, impression materials, care of lab and operating equipment, gauze products, restorative and preventive materials, tray set-ups. (Prerequisite: admission to program).

508-318 DENTAL CLINICAL EXPERIENCE 1 ...practical experience in patient relations, chairside skills, dental material manipulation, and limited radiography in the dental office and on-campus clinic. (Prerequisite: admission to program).

508-319 RADIOGRAPHY 1-DENTAL ASSISTANT ...introduction to exposing radiographs, processing, mounting, landmarks, charting, oral cavity, periodontium, facial and tooth growth, and tooth morphology. (Prerequisite: admission to program).

508-322 DENTAL CLINICAL EXPERIENCE 2 ...advanced practical experience in patient relations, chairside skills, laboratory procedures, radiography, dental materials, specialties, emergency procedures, and business office operations in the dental office and on-campus clinic. (Prerequisite: completion of 1st semester).

508-324 DENTAL LABORATORY PROCEDURES ...denture and crown/bridge prosthesis, construction of acrylic trays, temporary restorations, mouth guards, bleaching trays, waxes, impression and surgical materials and model trimming. (Prerequisite: completion of 1st semester).

508-326 DENTAL ASSISTANT 2-CHAIRSIDE ...occupational health and safety, management and maintenance of dental office and inventory, coronal polish, preventive and operative dentistry, fluoride application, periodontics, oral surgery orthodontics, endodontics, pediatrics and special patients. (Prerequisite: completion of 1st semester).

508-328 DENTAL OFFICE MEDICAL EMERGENCIES ...patient records, taking of vitals, oral exam, special patient management, medical emergencies, pharmacology and pain control, and CPR renewal. (Prerequisite: completion of 1st semester).

508-329 RADIOGRAPHY 2-DENTAL ASSST ...radiation theory, safety procedures, dental exposure techniques, evaluation techniques, and clinical application. (Prerequisite: 508-319).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Diesel and Heavy Equipment Technician  Program Code 324121

TECHNICAL DIPLOMA - TWO YEARS
Offered at the Sturgeon Bay campus. For more information, call the Sturgeon Bay campus at (920)743-2207 or (800)422-NWTC ext. 747 or 750.

PROGRAM DESCRIPTION
The Diesel and Heavy Equipment Technician Program trains students to service and repair diesel powered equipment. Instruction covers repair of steering, brakes, hydraulic systems and chassis components.

Graduates of the Diesel and Heavy Equipment Technician program will be able to:
• Comprehend hydraulic systems.
• Manage chassis, steering and suspension systems.
• Comprehend diesel engine systems.
• Explain diesel engine fundamentals.
• Describe the mechanics of track drive systems.
• Perform required preventive maintenance.
• Use welding and machine tools.
• Maintain brake systems.
• Comprehend electronic/electrical systems.
• Manage heating - A/C systems.
• Comprehend power train systems.
• Interpret schematic drawings.
• Diagnose engine systems.
• Service vehicle systems.

REQUIREMENT FOR PROGRAM ENTRY
• High school diploma or equivalent. (Equivalency may be established through GED testing or other tests.)

READING LEVEL
Materials used within this program have an average reading level of 11th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

CURRICULUM
The Diesel and Heavy Equipment Technician Technical Diploma is a two-year, four-semester program offered at the Sturgeon Bay campus. Upon graduation students will have completed 64 credits.

FIRST SEMESTER
Course No. Description Credits
412-310 Diesel Engine Fundamentals 6
412-311 Diesel-Elect Fundamentals 4
442-352 Welding-Metal Working Proc 2
804-362 Math 1-Diesel 2
804-372 Math 2-Diesel 2
SEMMESTER TOTAL 16

SECOND SEMESTER
412-320 Diesel-Chassis/Susp/Steer 4
412-321 Diesel-Brake Systems 3
412-322 Diesel Preventive Maint 4
412-323 Diesel-Elect Systems 3
806-353 Science-Mechanics 2
SEMMESTER TOTAL 16

THIRD SEMESTER
107-351 PC Operations-Intro 1
412-334 Diesel Engine Systems 4
412-335 Diesel-Fluid Power Systems 4
412-337 Diesel-Schematic Interpre 2
412-338 Diesel-Track Drive Systems 2
412-342 Diesel Equip Service/Maint 3
SEMMESTER TOTAL 16

FOURTH SEMESTER
412-315 Diesel-Refrig/Air Cond 2
412-340 Diesel Engine Troubleshoot 4
412-341 Diesel-Power Trains 5
801-380 Communication-Diesel 3
809-351 Economics-Basic 2
SEMMESTER TOTAL 16

The Caterpillar Foundation selected this technical program for participation in its Dealer Excellence Fund. Funds from Caterpillar and a matching grant from FABCO Equipment are used for student scholarships, staff development, curriculum development, and instructional equipment.

Students enrolled in this program should contact the NWTC Veteran's Office at (920)498-5445 if Veteran's information is needed.

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

412-310 DIESEL ENGINE FUNDAMENTALS
...diesel engine theory, service tools, engine overhaul, lubrication, cooling intake and exhaust systems, bearings and seals, fuel systems, and engine trouble-shooting.

412-311 DIESEL ELECTRICAL/ELECTRONIC FUNDAMENTALS ...electrical theory, electronic components, safety, storage batteries, charging circuits, and starting circuits.

412-315 DIESEL-REFRIGERATION/AIR CONDITIONING ...safety; basics of air conditioning; refrigerants and oil; basic system and its functions; environmental safety practices; inspection, diagnosing, and using service tools.

412-320 DIESEL-CHASSIS/SUSPENSION/STEERING ...vehicular steering systems, heavy-duty axles, suspension systems, wheels and tires, coupling systems.

412-321 DIESEL-BRAKE SYSTEMS ...braking systems, drum brake principles, disc brakes, foundation brake system, air brakes, anti-lock systems.

412-322 DIESEL PREVENTIVE MAINTENANCE ...safety terms, maintenance, inspection, lubricants, clutch, brakes, wheels and rims, steering, suspension, electrical, air system, and hydraulic system.

412-323 DIESEL-ELECTRICAL/ELECTRONIC SYSTEMS ...safety, electronic terms, electronic components, and general electronic system diagnostics. (Prerequisite: 412-311).

412-324 DIESEL ENGINE SYSTEMS ...shop safety, fuel system components, governors, nozzles, American Bosch systems, Robert Bosch systems, Lucas systems, Stanadyne systems, Cummins systems, Detroit diesel systems, Caterpillar systems, and testing methods. (Prerequisite: 412-310).

412-334 DIESEL ENGINE SYSTEMS ...shop safety, fuel system components, governors, nozzles, American Bosch systems, Robert Bosch systems, Lucas systems, Stanadyne systems, Cummins systems, Detroit diesel systems, Caterpillar systems, and testing methods. (Prerequisite: 412-310).

412-335 DIESEL-FLUID POWER SYSTEMS ...hydraulic principles, pumps, valves, cylinders, motors, accumulators, filters, reservoirs, hydraulic seals, fluids, maintenance, diagnosis and testing, symbols and safety rules.

412-337 DIESEL-SCHEMATIC INTERPRETATION APPLICATION ...electronic/hydraulic schematics, applications of schematics, system similarities, components, review of systems operation, practical applications in diagnosing system problems, use of special test equipment/schematics to solve problems.

412-338 DIESEL-TRACK DRIVE SYSTEMS ...track shop safety, track drive component parts, system operation, inspection, system diagnoses, system repair, system service, and system maintenance.

412-340 DIESEL ENGINE TROUBLESHOOTING ...diesel engine troubleshooting steps, major check points when inspecting or operating a diesel engine, causes of poor engine performance and failure, perform engine diagnostic tests, dyno test an engine. (Prerequisite: 412-310).

412-341 DIESEL-POWER TRAINS ...safety, power train components, coupling systems, hydraulic retarders, mechanical transmissions, drive shafts, final drives, gear reduction boxes, planetary gear sets, chain-type final drive, belt drive systems.

412-342 DIESEL EQUIPMENT SERVICE/MAINTENANCE ...shop safety; service manuals; preventive maintenance forms; federal inspection policy; PM for trucks, trailers, engine brakes/retarders, construction and agricultural equipment; and electronic trouble shooting trees.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHWEST WISCONSIN TECHNICAL COLLEGE
Dietary Manager  Program Code 303129

TECHNICAL DIPLOMA - NINE MONTHS, PART-TIME  FOR INDIVIDUALS EMPLOYED IN HEALTH CARE FOOD SERVICE
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920) 498-5498 or (800)422-NWTC ext. 498.

PROGRAM DESCRIPTION
Dietary Manager prepares students to become competent food service/dietary managers for health care and other institutional facilities. The participating health care facility provides a preceptor who is a Registered Dietitian or Licensed Dietitian with a minimum of two years post registration practitioner competency.

Graduates of this program will be able to:
• Be employed as a Dietary Manager
• Analyze food service management procedures.
• Demonstrate principles of personnel supervision.
• Plan for nutritional care of patient/resident.

REQUIREMENTS FOR PROGRAM ENTRY
• Complete program application
• High school diploma or equivalent
• Verification of employment in health care food service/other institutional facility
• Verification of institutional employer participation in preceptorship

READING LEVEL
Materials used within this program have an average reading level of 14th grade.

MATH LEVEL
Students should have mastered basic math skills before entering this program. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Dietary Manager or Food Service Supervisor in hospitals, long-term care facilities, school food service, retirement homes, and similar food service operations.

DIETARY MANAGER/FOOD SERVICE SUPERVISOR:
supervises food service personnel, food procurement, production, service, and storage; monitors business operations related to food service department; interprets nutritional information; plans and modifies general menus; assesses nutritional needs and care plans; utilizes services of a dietitian (consultant) as required for the development of therapeutic special diets and menus.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Certified Dietary Manager
• Dietetic Technician

CURRICULUM
The Dietary Manager Technical Diploma Program is a nine-month program that includes three one-credit courses of 120 hours in conjunction with 36 weeks of related on-the-job experience including 150 hours of clinical field experience directly related to course content and learning activities.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>312-301</td>
<td>First 10 week session (September) Dietary Manager- Personnel Supervision</td>
<td>1</td>
</tr>
<tr>
<td>312-302</td>
<td>Second 10 week session (November) Dietary Manager- Food Service Management</td>
<td>1</td>
</tr>
<tr>
<td>312-303</td>
<td>Third 10 week session (February) Dietary Manager- Nutrition Care</td>
<td>1</td>
</tr>
<tr>
<td>312-304</td>
<td>Dietary Manager (September through May) Field Experience</td>
<td>1</td>
</tr>
</tbody>
</table>

Completion of the program qualifies students to sit for the examination by the Dietary Manager Association to become a Certified Dietary Manager.

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is not eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

312-301 DIETARY MANAGER-PERSONNEL SUPERVISION...hiring and supervising personnel in food service departments: employment laws, communications training, evaluating employees, discipline practices; nutritional assessment and care plans contributing to quality patient care.

312-302 DIETARY MANAGER-FOOD SERVICE MANAGEMENT...food service safety and sanitation; procurement, production, and storage of food and food service supplies; monitoring business operations related to the food service department.

312-303 DIETARY MANAGER-NUTRITION CARE...interpreting nutritional information, calculating nutritional intake, planning and modifying general menus, and providing nutritional food services.

312-304 DIETARY MANAGER-FIELD EXPERIENCE...job responsibilities and assignments of the Dietary Manager including nutritional care and therapy; personnel supervision, and nutritional assessment; and the management of food service.
PROGRAM DESCRIPTION
Electrical Power Distribution prepares students to install, maintain, and operate electrical systems used to supply electric energy to residential, commercial, and industrial customers.

Graduates of this program will be able to:
• Construct electric transmission systems.
• Relate electrical theory to electric power systems.
• Work comfortably at heights.
• Climb poles and towers.
• Identify sub-station components.
• Install underground electric system.
• Operate Electrical Power Distribution equipment.
• Troubleshoot power distribution systems.
• Communicate technical information.
• Construct power distribution system.
• Identify methods of electrical generation.

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
• Be able to obtain a commercial driver’s license
• Place satisfactorily in the NWTC mathematics examination

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered algebra skills. For a description see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Line Technician, Lead Line Technician, Line Technician Supervisor, Cable TV Line Technician, Telephone Line Technician, Technician in an Electricity Generating Plant or Installer/Maintainer of Underground Systems. Graduates in those jobs will perform construction, operations, and maintenance work on the electric power system and equipment.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Line Coordinator
• Line Apprentice
• Safety Advisor

CURRICULUM
The Electrical Power Distribution Technical Diploma is a one-year, three-semester program.

Upon graduation, a student will have completed 32 credits.

FIRST TERM (Summer)
Course No.  Description  Credits
413-330  Line Elec Field Trng 1  5
413-353  Electricity-Basic  1
413-362  Line Elec-Safety 1  1
804-384  Mathematics  2

SEMESTER TOTAL 9

SECOND TERM
Course No.  Description  Credits
413-331  Line Elec Field Trng 2  10
413-335  Line Elec-Const Standards  1
413-355  Electricity-Linepersons  2
413-364  Line Elec-Safety 2  1
804-385  Math-Computer Appl  2

SEMESTER TOTAL 16

THIRD TERM
Course No.  Description  Credits
413-332  Line Elec Field Trng 3  5
413-361  Lineman-Safety/First Aid  1
801-386  Communicating-Interpers  1

SEMESTER TOTAL 7

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

413-330 LINE ELECTRICIAN FIELD TRAINING 1
...pole climbing, care of equipment/vehicle operation, setting and removing poles/line layout, pole framing, guys and anchors; conductor string, sagging, tying/transformers, operation, application, construction/safety.

413-331 LINE ELECTRIC FIELD TRAINING 2
...transformer installation, operation, maintenance; regulator, capacitor, meter, underground equipment, street lighting operation and maintenance; protective equipment use; problem-solving instrumentation, map/diagram reading, code clearance requirements; tree-trimming methods and use of tools. (Prerequisite: 413-330).

413-332 LINE ELECTRICIAN FIELD TRAINING 3
...protective grounds, transmission, substation operations and maintenance, metering tools, transmission hot stick use and safety, and stray voltage precautions. (Prerequisite: 413-331).

413-335 LINE ELECTRICIAN-CONSTRUCTION STANDARDS
...distribution standards overhead, underground, primary, secondary, clearances, work practices, material, and safe work practices.

413-353 ELECTRICITY-BASIC
...electron theory, terminology, Ohm's law use, DC/AC circuits, magnetism and magnetic devices, electromagnetic induction, electrical circuits, component symbols, test equipment, and safety procedures.

413-355 ELECTRICITY-LINEPERSONS
...electric power/energy, three phase voltage generation, three phase circuit power, transformer operation principles, transformer connections, and safety practices in high voltage applications. (Prerequisite: 413-353).

413-361 LINE ELECTRICIAN-SAFETY/FIRST AID
...substation construction and maintenance, first aid procedures, mouth-to-mouth resuscitation, safety code analysis, recordkeeping, external heart massage, and safety/accident analysis. (Prerequisite: 413-364).

413-362 LINE ELECTRICIAN-SAFETY 1
...general rules, definitions, applications, responsibility, reporting accidents, injuries, hand, power tools, ladders, scaffolds, handling materials, operation of company automotive equipment.

413-364 LINE ELEC-SAFETY 2
...electrical section; line clearing; right-of-way maintenance; generating stations including theory and hands-on working on overhead lines, protective equipment, underground systems, tree trimming, and substations. (Prerequisite: 413-362).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Electricity
Program Code 314131

TECHNICAL DIPLOMA - ONE YEAR
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5798 or (800)422-NWTC ext.498.

PROGRAM DESCRIPTION
Electricity prepares students to install, maintain, and service electrical equipment used in residential, commercial, and industrial settings.

Graduates of this program will be able to:
• Perform safe work practices.
• Apply National Wisconsin State Electrical Codes to electrical installations.
• Install residential, commercial & industrial electrical systems.
• Maintain residential, commercial & industrial electrical systems.
• Troubleshoot residential, commercial & industrial electrical systems.
• Perform basic diagnostic testing on electrical systems.
• Apply basic calculations to electrical installations.
• Demonstrate the operation of AC and DC motors.
• Install basic motor control systems.
• Troubleshoot basic motor control systems.
• Interpret electrical diagrams.

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
• Place satisfactorily in the NWTC mathematics examination

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math skills.
For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as a Construction Electrician, Marine Electrician, and Industrial Electrician.

CONSTRUCTION ELECTRICIAN: installs and services conduit, wire, cable, and equipment in new and existing residential, commercial, and industrial structures.

MARINE ELECTRICIAN: installs, repairs, and converts electrical power, lighting, communications, and automation systems on board ships.

INDUSTRIAL ELECTRICIAN: installs, maintains, and troubleshoots motors, motor controls, lighting, and other electrical systems in an industrial plant.

With additional education and/or work experience, graduates may find other opportunities for employment:
• Electrical Construction Supervisor
• Electrical Engineering Technician
• Journeyman Electrician
• Electrical Contractor
• Electrical Maintenance Supervisor

CURRICULUM
The Electricity Technical Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 32 credits.

FIRST SEMESTER
Course No. Description Credits
413-312 DC Circuits/Machines 4
413-313 Electric Wire-Resident 8
801-386 Communicating-Interpers 1
804-360 Math 1-Electricity 2
SEMESTER TOTAL 15

SECOND SEMESTER
413-322 AC Circuits/Machines 3
413-323 Electric Wire-Comm/Indus 9
442-350 Welding-Machine Trades 2
801-385 Communicating-Writing 1
804-370 Math 2-Electricity 2
SEMESTER TOTAL 17

Students enrolled in this program should contact the NWTC Veteran's Office at (920)498-5445 if Veteran's information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

413-312 DC CIRCUITS/MACHINES ...the electron theory, electromotive force sources, DC circuits, voltage, current, series-parallel circuits and resistances, electromagnetism, DC motors and generators, and DC motor controls.

413-313 ELECTRICAL WIRING-RESIDENTIAL ...residential electrical installation, National Electrical Code, residential circuits, conductor sizes, types of cable installation, branch circuits, switch control, service entrance equipment, branch circuit overcurrent protection, service entrance calculations, and demand factors.

413-322 AC CIRCUITS/MACHINES ...AC theory, inductance, capacitance, impedance, series and parallel AC circuits, single-phase and three-phase motors, AC power, power factor correction, transformers, rectification of AC, diodes, and silicon-controlled rectifiers. (Prerequisite: 413-312).

413-323 ELECTRICAL WIRING-COMMERCIAL/INDUSTRIAL ...line diagrams, motor starters, control devices, three-phase and single-phase systems, motor branch circuits, overcurrent and overload protection, power and lighting circuits, National Electrical Code, and architectural blueprints. (Prerequisite: 413-313).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Electro-Mechanical Technology

ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5498 or (800)422-NWTC ext. 498.

PROGRAM DESCRIPTION

Electro-Mechanical Technology focuses on machine and control technologies associated with modern industrial production and manufacturing. The program prepares students for employment as technical support personnel within this environment.

Technicians can be expected to assemble, install, troubleshoot, repair, and modify machinery and automated systems that are computer or electronically controlled. These systems include: electricity/electronics, industrial electronics, electric motors and drives, mechanisms, hydraulics and pneumatics, programmable control systems, servo control systems.

Graduates of this program will be able to:

- Understand and have knowledge of electricity/electronics, mechanics, fluids and computer software applications.
- Read and interpret technical specifications, drawings, schematics and diagrams.
- Document technical information through descriptive writing, sketches and diagrams; mathematical expression, computation and graphs.
- Perform electrical, mechanical, and fluid measurements by properly selecting and operating test equipment and associated software.
- Perform assembly/disassembly, repair, or calibration of components by properly selecting tools and equipment and following appropriate procedures.
- Record and evaluate the characteristics and performance of machine components, assemblies and systems.
- Understand the overall operation and control of machines and automated systems.
- Solve machine operation and control problems utilizing established troubleshooting methods and procedures.

REQUIRED FOR PROGRAM ENTRY

- Have high school algebra or equivalent

READING LEVEL

Materials used within this program have an average reading level of 12th grade.

MATH LEVEL

Students should have mastered algebra skills before entering this program. For a description of algebra skills, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL

A graduate of the program will have the potential for employment as Automated Equipment Technician, Electro-Mechanical Technician, Electronics Technician, Field Service Technician, Fluid Power Technician, and Installation Technician.

AUTOMATED EQUIPMENT TECHNICIAN:

maintains and repairs electronically-controlled automatic production equipment, including servo-hydraulics equipment, programmable controllers, motor controllers, and robotic equipment.

ELECTRONICS TECHNICIAN:

maintains and repairs electronic equipment including motor controllers, cables, communication equipment, computers, security systems, CNC equipment, programmable controllers, robots and automatic production equipment, works with an electronics engineer building breakboard and prototype devices; and evaluates and tests electronic devices and systems.

ELECTRO-MECHANICAL TECHNICIAN:

maintains and repairs electro-mechanical equipment including drive systems, position sensors, cabling, and automatic production equipment; works with mechanical and/or electrical engineers to install and evaluate electro-mechanical systems; and builds mock-ups of production equipment.

FIELD SERVICE TECHNICIAN:

services, repairs, and overhauls equipment in the customer's facility; works with sales personnel; and demonstrates new equipment to potential customers.

FLUID POWER TECHNICIAN:

maintains and repairs industrial hydraulic pneumatics production equipment, hydraulic/pneumatic control systems, hydraulic/pneumatic robots, and servo and proportional hydraulic systems.

INSTALLATION TECHNICIAN:

installs and sets up automated production equipment, robotic systems, and production control systems.

With additional education and/or work experience, graduates may find other opportunities for employment.

- Electro-Mechanical Service Supervisor
- Electro-Mechanical Shop Supervisor
- Electro-Mechanical Systems Test Engineer
- Field Service Supervisor
- Service Control Technician
- Electrical Controls Designer
- Electrical CAD Operator
- Technical Salesperson

CURRICULUM

The Electro-Mechanical Technology Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER

605-116 Electronics-Digital 3
605-117 DC Fundamentals 3
605-118 Technical Skills/Practices 2
801-196 Communication-Interpers 3
804-150 Math 1-Tech 5
SEMESTER TOTAL 16

SECOND SEMESTER

605-127 AC Fundamentals 3
605-128 Electronics-Basic 3
605-138 Control/Program Sys 3
804-160 Math 2-Tech 4
809-197 Society-Amer Contemp 3
SEMESTER TOTAL 16

THIRD SEMESTER

620-133 Transducers 3
620-134 Electromech-Rotating Equip 3
620-135 Fluid/Mechanical Systems 3
620-136 Computer/Machine Interface 3
801-195 Communication-Written 3
ELECTIVE 3
SEMESTER TOTAL 18

FOURTH SEMESTER

620-131 Electromechanical System 3
620-142 Fluid Control Mechanism 3
620-148 Programmable Controller 2 3
801-197 Reporting-Technical 3
809-199 Psychology-Human Relations 3
ELECTIVE 3
SEMESTER TOTAL 18


This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

605-116 ELECTRONICS-DIGITAL...basic logic gates, Boolean algebra, basic simplification techniques, flip-flops, counters, shift registers, computer number systems, binary arithmetic, half- and full-adders, complement arithmetic, and arithmetic ICs using TTL ICs. (Corequisite: 804-150).

605-117 DC FUNDAMENTALS...scientific notation, Ohm’s law applied to DC series and parallel circuits, circuit analysis tools and magnetism. Measuring instruments, circuit analysis, circuit troubleshooting, and computer circuits. (Corequisite: 804-150).

605-127 AC FUNDAMENTALS...alternating current generation, reactive components, reactance, Ohm’s Law as applied to AC circuits, power and resonance; rectangular and polar notation; graphing, computer simulations and use of AC measuring instruments. (Prerequisite: 605-117, 804-150).

605-128 ELECTRONICS-BASIC...electronic devices, circuit analysis and troubleshooting; emphasis on Diode theory and circuits, voltage regulation, and amplifier theory with ideal voltage and current amplifier circuits. (Prerequisite: 605-117, Co-require 804-160).

605-138 CONTROLS/PROGRAMMABLE SYSTEMS...control applications using ladder logic control, input devices, relay and timing control circuits, and programmable logic control (PLC).

620-134 ELECTROMECHANICAL-ROTATING EQUIPMENT...construction, characteristics, and operation of DC and AC motors; construction, operation, and set-up of motor drive systems. (Prerequisite: completion of 2nd semester).

620-135 FLUID/MECHANICAL SYSTEMS...basic theory and operation of hydraulic and mechanical components and systems. (Prerequisite: completion of 2nd semester).

620-136 COMPUTER/MACHINE INTERFACE...development and use of computer graphics applied to the monitoring, supervision, and control of industrial machinery. (Prerequisite: 605-138, 804-160).

620-142 FLUID CONTROL MECHANISMS...theory, operation, and tuning of electro-hydraulic servovalve and proportional valve systems. (Prerequisite: 620-133, 620-135).

620-148 PROGRAMMABLE CONTROLLERS 2...advanced applications and programming of PLCs, with emphasis on the hardware and software needed to interface PLCs to industrial components and systems, including maintenance, installation, and specifications. (Prerequisite: completion of 3rd semester).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Electronics  Program Code 106051

ASSOCIATE DEGREE - TWO YEARS
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5498 or (800)422-NWTC ext. 498.

PROGRAM DESCRIPTION
Electronics prepares students to operate, test, maintain, and troubleshoot electronic equipment such as automatic control, computers, and communication equipment. It is also designed to prepare technicians to work with Electronic Research and Development engineers.

Graduates of this program will be able to:
- Describe the various digital modulation techniques.
- Given basic power switching devices and circuits, identify components.
- Measure, and evaluate power switching circuit.
- Program and operate microprocessor interface circuits.
- Measure electrical parameters of RF circuits.
- Describe wireless analog communication techniques.
- Use computer assembly language.
- Measure wide-band circuit parameters.
- Describe transfer characteristics of frequency sensitive linear circuits.
- Analyze an ON/OFF machine control circuit.
- Describe in detail the assembly and interconnection that define the operation of a microprocessor system.
- Predict operation of circuits containing active components.
- Given basic electronic symbols, identify the component and appropriate nomenclature.
- Apply boolean theorems to basic digital circuits.
- Apply circuit theorems to AC/DC RLC circuits.
- Use basic electronic tools in an acceptably safe manner.
- Develop the ability to work in teams with diverse populations.
- Develop a industry acceptable work ethic.
- Communicate orally using common technical terminology.
- Write a technical document using acceptable grammatical structure.
- Use common office suite package tools to create technical documentation.
- Manipulate electronic formulas.
- Relate mathematics to the field of electronics.
- Interpret graphical data.
- Solve problems using algebra, trigonometry, complex numbers, logarithms, and exponentials.
- Using common test equipment, measure circuit parameters.
- Verify measured values by calculation in a laboratory setting.
- Machine code a processor to accomplish predetermined tasks.
- Adhere to elementary laboratory safety standards.

REQUIREMENT FOR PROGRAM ENTRY
- High school algebra

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered algebra skills before entering this program. For a description of algebra skills, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Electronic Development Technician, Electronic Maintenance Technician, Electronic Test Technician, Electronics Technician, and Field Service Technician.

ELECTRONIC DEVELOPMENT TECHNICIAN: assists engineers in the design and development of experimental and prototype electronic equipment and products.

ELECTRONIC MAINTENANCE TECHNICIAN: repairs, services, and programs in-plant automatic control equipment, computers, robots, and other electronic equipment.

ELECTRONIC TEST TECHNICIAN: tests, troubleshoots, and inspects electronics products (quality control testing).

ELECTRONICS TECHNICIAN: maintains and repairs electronic equipment including motor controllers, cables, communication equipment, computers, security systems, CNC equipment, programmable controllers, robots and automatic production equipment; works with an electronics engineer in building breadboard and prototype devices; and evaluates and tests electronic devices and systems.

FIELD SERVICE TECHNICIAN: services, repairs, and overhauls equipment in the customer's facility; works with sales personnel; and demonstrates new equipment to potential customers.

With additional education and/or work experience, graduates may find other opportunities for employment.

- Computer Field Service Supervisor
- Electronics Production Superintendent
- Electronics Maintenance Supervisor

CURRICULUM
The Electronics Associate Degree is a two-year four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER
Course No. Description Credits
605-116 Electronics-Digital 3
605-117 DC Fundamentals 3
605-118 Technical Skills/Practices 2
801-196 Communication-Interpers 3
804-150 Math 1-Tech 5

SEMESTER TOTAL 16

SECOND SEMESTER
605-127 AC Fundamentals 3
605-128 Electronics-Basic 3
605-138 Control/Program Sys 3
804-160 Math 2-Tech 4
809-197 Society-Amer Contemp 3

SEMESTER TOTAL 16

THIRD SEMESTER
605-124 Microprocessors 1 3
605-136 Electronics-Linear 3
605-137 Data Communications 1 3
801-195 Communication-Written 3
809-199 Psychology-Human Relations 3

ELECTIVE 3

SEMESTER TOTAL 18

FOURTH SEMESTER
605-144 Microprocessors 2 3
605-147 Data Communications 2 3
605-148 Analog Communications 3
605-149 Power Devices 3
801-197 Reporting-Technical 3

ELECTIVE 3

SEMESTER TOTAL 18


This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

605-116 ELECTRONICS-DIGITAL...basic logic gates, Boolean algebra, basic simplification techniques, flip-flops, counters, shift registers, computer number systems, binary arithmetic, half- and full-adders, complement arithmetic, and arithmetic ICs using TTL ICs. (Corequisite: 804-150).

605-117 DC FUNDAMENTALS...scientific notation, Ohm's law applied to DC series and parallel circuits, circuit analysis tools and magnetism, measuring instruments, circuit analysis, circuit troubleshooting and computer circuit. (Corequisite: 804-150).

605-118 TECHNICAL SKILLS/PRACTICES...method learning and general practice experience associated with electrical/electronic parts assembly, disassembly, repair, fabrication, and documentation.

605-124 MICROPROCESSORS 1...intro to microprocessors using a microcontroller, basic principles of micro-programming, introductory understanding of digital information processing. (Prerequisite: completion of 2nd semester).

605-127 AC FUNDAMENTALS...alternating current generation, reactive components, reactance, Ohm's Law as applied to AC circuits, power and resonance; rectangular and polar notation, graphing, computer simulations, and use of AC measuring instruments. (Prerequisite: 605-117, 804-150).

605-128 ELECTRONICS-BASIC...electronic devices, circuit analysis and troubleshooting, emphasis on Diode theory and circuits, voltage regulation, and amplifier theory with ideal voltage and current amplifier circuits. (Prerequisite: 605-117, Corequisite 804-160).

605-136 ELECTRONICS-LINEAR...linear and active circuits including filters, tuned circuits, amplifiers, and oscillators. (Prerequisite: 605-127, 605-128).

605-137 DATA COMMUNICATIONS 1...circuits and principles in pulse amplitude, time, code modulation and delta modulation, sampling and noise effects using modulation techniques, digital storage oscilloscope discussion. (Prerequisite: completion of 2nd semester).

605-138 CONTROLS/PROGRAMMABLE SYSTEMS...control applications using ladder logic control, input devices, relay and timing control circuits, and programmable logic control (PLC).

605-144 MICROPROCESSORS 2...interfacing, interrupts, ADCs, DACs, programmable timers, serial interfacing, and additional microprogramming techniques studied and applied to projects in lab. (Prerequisite: 605-124).

605-147 DATA COMMUNICATIONS 2...circuits and principles of frequency shift keying, amplitude shift keying, and phase shift keying; various aspects of fiber optic communication such as receivers, transmitters, and cabling. (Prerequisite: 605-137).

605-148 ANALOG COMMUNICATIONS...radio communications including AM, SSB, FM, lines, antennas, and circuit noise effects. (Prerequisite: 605-136).

605-149 POWER DEVICES...power switching devices as applied to switching power supplies, motor speed controls, and power inverters. (Prerequisite: 605-136).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
PROGRAM DESCRIPTION
Emergency Medical Technician-Basic performs emergency patient care and basic life support in the field and transports injured patients to hospital emergency departments.

Graduates of this program will be able to:
• Obtain EMT Certification/Licensure.
• Perform patient assessment.
• Ventilate patients.
• Manage trauma and medical problems.
• Communicate patient information to hospital.
• Develop EMT-patient interaction.

REQUIREMENTS FOR PROGRAM ENTRY
• Student affiliated with an ambulance service receives first priority for registration
• Student may enter training if less than 18 years old, but must be 18 to take the licensing examination
• Satisfactory placement in the NWTC reading evaluation
• Documentation of current recognition in CPR: either the American Heart Association Basic Cardiac Life Support Course for Healthcare Providers or the American Red Cross Cardiopulmonary Resuscitation for the Professional Rescuer Level

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills.
For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate with an EMT-Basic Technical Diploma will have the potential for employment as a licensed Emergency Medical Technician. Most ambulance services in Wisconsin are volunteer, but both private ambulance services and fire departments employ EMT's in full-time paid positions.

EMERGENCY MEDICAL TECHNICIAN:
performs emergency patient care and basic life support in the field, transporting sick and injured patients to hospital emergency departments.

CURRICULUM
The EMT-Basic Technical Diploma is a one-semester program. Upon graduation a student will have completed 3 credits.

FIRST SEMESTER
Course No. Description Credits
531-301 EMT-BASIC 3

SEMESTER TOTAL 3

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is not eligible for financial aid.
COURSE DESCRIPTIONS
This course provides an opportunity for the student to develop the knowledge, skills, process, and understanding of:

531-301 EMT-BASIC ...preparatory aspects, airway management, patient assessment, medical/behavioral cases, trauma care, pediatric cases, and field operations in basic life-support emergency medical care. (Prerequisite: admission to program).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Farm Business and Production Management

TECHNICAL DIPLOMA - SIX-YEAR, PART-TIME

Offered district-wide. For more information, call the Green Bay campus at (920)498-5498, the Marinette campus at (715)735-9361, the Sturgeon Bay campus at (920)743-2207, or (800)422-NWTC ext. 498.

PROGRAM DESCRIPTION

Farm Business and Production Management covers basic farming production and business management principles needed to be an efficient modern farmer. Formal classes are delivered district-wide at locations convenient for the farmer.

Graduates of this Program will be able to:
- Calculate farm business cost of production for forage, grain, beef, pork, and milk.
- Prepare a livestock management plan that is environmentally friendly.
- Assess a livestock management plan that is environmentally friendly.
- Prepare a business financial plan.
- Assess a business financial plan.
- Develop a soil and crop management plan that is environmentally friendly.
- Assess a soil and crop management plan that is environmentally friendly.
- Own, operate, and/or be employed in an agricultural related industry.
- Implement a business, soil, crop, and livestock management plan that is environmentally friendly.

RECOMMENDED PROGRAM BACKGROUND

- Communications: ability to listen, write complete sentences, spell accurately, and express ideas well verbally
- Science: basic plant and animal biology, chemistry, and applied physics
- Ability to use computer operating skills: keyboarding at 30 words per minute
- Basic math

READING LEVEL

Materials used within this program have an average reading level of 12th grade.

MATH LEVEL

Students should have mastered basic math skills.
For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL

A graduate of the program will have basic skills necessary to own and operate or be employed on a farm.

With additional education and/or work experience, graduates may find other opportunities for employment:
- Dairy Herdsman
- General Farm Manager
- Farm Records Manager
- Crop Supervisor
- Livestock Feeding Specialist
- Farm Equipment and Facilities Maintenance Manager
- Farm Service Employee
- Field Equipment Operator

CURRICULUM

Farm Business and Production Management Technical Diploma is a six-year, part-time program. Upon graduation a student will have completed 18 credits.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>090-381</td>
<td>Farm Business Operation</td>
<td>3</td>
</tr>
<tr>
<td>090-382</td>
<td>Soils Management</td>
<td>3</td>
</tr>
<tr>
<td>090-383</td>
<td>Crop Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>090-384</td>
<td>Livestock Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>090-385</td>
<td>Livestock Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>090-386</td>
<td>Farm Record/Busi Analy</td>
<td>3</td>
</tr>
</tbody>
</table>

SEMESTER TOTAL 18

Students enrolled in this program should contact the NWTC Veteran's Office at (920)498-5445 if Veteran's information is needed.

This program is not eligible for financial aid.

NORTHEAST WISCONSIN 72 TECHNICAL COLLEGE
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

090-381 FARM BUSINESS OPERATION...farm organization, ration balancing, crop fertilization, cash flow, financial statements, profit and loss, basic farm records, farm business analysis.

090-382 SOILS MANAGEMENT...preparing and implementing a land use plan, soil testing procedures and reports, corrective fertilizers, soil conservation, safe use of farm machinery and equipment, and farm business analysis. (Prerequisite: 090-381).

090-383 CROP MANAGEMENT...economics, alternative crop strategies, production management, variety selection, maintenance fertilization, pest controls and chemicals, harvesting, storage, marketing, and farm business analysis. (Prerequisite: 090-381).

090-384 LIVESTOCK NUTRITION...sound feeding management; economics of feeds; nutritional terminology and requirements; feed consumption; feed tag labels for protein, energy, minerals, and vitamins; evaluate feeding programs; and metabolic diseases. (Prerequisite: 090-381).

090-385 LIVESTOCK MANAGEMENT...livestock selection; breeding management; herd health; young stock management; selection, operation, and maintenance of milking, feeding, ventilation, and manure handling systems; farm buildings; feed storage; and farm business analysis. (Prerequisite: 090-381).

090-386 FARM RECORD/BUSINESS ANALYSIS...farm business goals, use of farm credit, farm business arrangements, orderly farm transfer, farm estate planning, farm income taxes, computer records, and farm business analysis. (Prerequisite: 090-381).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Financial Institutions Management  Program Code 101028

ASSOCIATE DEGREE - TWO YEARS, FULL-TIME OR FIVE YEARS, PART-TIME

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5616 or (800)422-NWTC Ext 616.

PROGRAM DESCRIPTION
This program is designed for employees of financial institutions who want to increase their knowledge in operational and managerial skills.

Graduates of this program will be able to:
• Perform business math calculations.
• Analyze business and personal financial documents.
• Ensure compliance with state and federal laws.
• Recommend appropriate financial products to customers.
• Use marketing tools and techniques.
• Manage the work of other people in a team environment.
• Assess the impact of economic trends on the financial industry.
• Use financial counseling techniques.
• Make loan decisions.
• Demonstrate knowledge and understanding of collection procedures.
• Deliver good customer service.

REQUIREMENTS FOR PROGRAM ENTRY
• Basic math
• Ability to use computer keyboard

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

The program was developed in coordination with several organizations
• American Institute of Banking
• Institute of Financial Education
• National Credit Union Association

CURRICULUM
The Financial Institutions Management Associate Degree is a two-year, full-time or five-year, part-time program. Upon graduation, a student will have completed 67 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-110</td>
<td>Accounting 1</td>
<td>4</td>
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<tr>
<td>102-151</td>
<td>Banking Principles</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102-157</td>
<td>Savings Oper/Busi-Intro</td>
<td>3</td>
</tr>
<tr>
<td>105-101</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>801-196</td>
<td>Communication-Interpers</td>
<td>3</td>
</tr>
<tr>
<td>809-195</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>SEMESTER TOTAL</td>
<td>16</td>
</tr>
</tbody>
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SECOND SEMESTER

<table>
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<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>102-120</td>
<td>Savings Accounts</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102-163</td>
<td>Investments-Bank</td>
<td>3</td>
</tr>
<tr>
<td>102-122</td>
<td>Financial Int-Marketing</td>
<td>3</td>
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<tr>
<td>102-150</td>
<td>Law-Business</td>
<td>3</td>
</tr>
<tr>
<td>103-103</td>
<td>Micro Basics MS Office 1</td>
<td>3</td>
</tr>
<tr>
<td>104-113</td>
<td>Credit-Consumer</td>
<td>3</td>
</tr>
<tr>
<td>801-195</td>
<td>Communication-Written</td>
<td>3</td>
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<td>SEMESTER TOTAL</td>
<td>18</td>
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</table>

THIRD SEMESTER

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<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>102-125</td>
<td>Mortgage Lend/Serv</td>
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<tr>
<td>OR</td>
<td></td>
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</tr>
<tr>
<td>102-138</td>
<td>Financing-Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102-164</td>
<td>Loan/Discount</td>
<td>3</td>
</tr>
<tr>
<td>102-162</td>
<td>Law-Commercial</td>
<td>3</td>
</tr>
<tr>
<td>102-167</td>
<td>Commercial Lending</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>102-153</td>
<td>Finance-Personal</td>
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<tr>
<td>194-150</td>
<td>Real Estate Principles</td>
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<td>OR</td>
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<tr>
<td>102-180</td>
<td>Money/Banking</td>
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<tr>
<td>196-151</td>
<td>Management Practices</td>
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<tr>
<td>809-199</td>
<td>Psychology-Human Relations</td>
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<td>SEMESTER TOTAL</td>
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FOURTH SEMESTER

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<th>Credits</th>
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<tr>
<td>102-155</td>
<td>Trust Functions/Service</td>
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<tr>
<td>194-160</td>
<td>Law-Real Estate</td>
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<td>196-160</td>
<td>Supervisor/Personnel Mgmt</td>
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<td>809-197</td>
<td>Society-Amer Contemp</td>
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<td>SEMESTER TOTAL</td>
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This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

102-120 SAVINGS ACCOUNTS  ...nature, ownership, types, insurance, and administration of savings accounts.

102-122 FINANCIAL INSTITUTION-MARKETING  ...fundamental concepts of marketing and the application of these concepts. As financial institutions enter the electronic era, effective marketing will be critical in determining the course of the industry.

102-125 MORTGAGE LENDING/SERVICING  ...principles and practices involved in making and closing mortgage loans and servicing a sound mortgage portfolio, including the secondary mortgage market.

102-138 FINANCING-AGRICULTURE  ...agriculture information sources; legal documents; public relations; capital structure; business credit needs; finance procedures, bank policy, and loan application, analysis, and evaluation; and loan performance evaluation.

102-150 LAW-BUSINESS  ...common law contracts and sales contracts: formation, interpretation, performance, and discharge; the law of agency; corporations; and introduction to the American legal system: criminal and tort law.

102-151 BANKING PRINCIPLES  ...fundamentals of bank functions presented in a descriptive fashion so that the beginning banker may acquire the broad and operational perspective that is necessary for career advancement.

102-153 FINANCE-PERSONAL  ...income and occupations, financial spending plan development, purchasing consumer goods and services, risk management plan development, investment plan development, retirement and estate planning, and financial advising.

102-155 TRUST FUNCTIONS/SERVICE  ...trust functions; estate settlement; guardianships; trust services; performance of agencies; individuals, business organizations, charitable institutions, and trust administration.

102-157 SAVINGS OPERATIONS/BUSINESS-INTRODUCTION  ...savings association development and interaction with social, business, historical, legal, competitive, economic, technological, and future environments; fundamentals of financial and management functions and operations of the savings association.

102-162 LAW-COMMERCIAL  ...federal and state law related to financial institutions and commercial organizations with emphasis on the Uniform Commercial Code, negotiable instruments, consumer protection laws, collection laws, and federal regulation of financial institutions.

102-163 INVESTMENTS-BANK  ...federal government and agency securities, municipal securities, general obligation and revenue bonds, treasury and municipal securities markets, bank liquidity, primary and secondary reserves, security prices and yields, yield curves, and investment policies.

102-164 LOAN/DISCOUNT  ...calculating interest and discounting commercial paper; guarantees; collateral agreements; processing documents accompanying notes secured by stocks, bonds, and savings account passbooks; the concepts of attachment, perfection, priority, default, and foreclosure.

102-167 COMMERCIAL LENDING  ...functions of the loan interview and credit investigation, elements of the loan document and their loan functions, the structuring of commercial loans, and federal and state laws governing commercial lending.

102-180 MONEY/BANKING  ...economics and banking, commercial banking system, money supply, investments and loans, Federal Reserve System, and international monetary system.

104-713 CREDIT-CONSUMER  ...the role of consumer credit; loan processes; collections; financial advising and counseling; loan, promotion, and bank policies; consumer, commercial, mortgage, and credit cards.

105-101 BUSINESS MATH  ...percentage, interest, promissory notes, borrowing, credit charges, payroll records and deductions, property tax, sales tax, inventory valuation, depreciation, mark-up, cash and trade discounts, stocks and bonds, and financial statement analysis.

194-150 REAL ESTATE PRINCIPLES  ...principles and practices that influence the real estate market locally and nationally; present and future economic and social trends; property rights and ownership; financing; and brokerage, property development, and evaluation.

194-160 LAW-REAL ESTATE  ...land, fixtures and easements, titles and deeds, recordings, contracts, closings and escrow, liens and mortgages, real estate development law, land development construction, land control, planning developments, and townhouses and condominiums.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Fire Protection Engineering Technology  Program Code 105033

ASSOCIATE DEGREE - TWO YEARS
Offered at the Marinette campus. For more information, call the Marinette campus at (715)735-9361, or (800)422-NWTC

PROGRAM DESCRIPTION
This program provides educational experiences and skill development for individuals preparing to enter careers in fire protection systems design.

Graduates of this program will be able to:
• Safeguard life and property against loss from fire, explosion, and related hazards
• Design new fire protection devices
• Design, install, or service fire detection and suppression systems
• Consult with architects and others to insure that fire safety is built into new structures
• Inspect private, commercial, and industrial properties
• Evaluate the adequacy of fire protection and prevention methods

REQUIREMENT FOR PROGRAM ENTRY
• One year of high school algebra or satisfactory placement in the NWTC mathematics examination

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Fire Protection Systems Designer, Fire Protection Equipment Sales Representative, Fire Protection Systems Installer, and Industrial Safety Technician.

FIRE PROTECTION SYSTEMS DESIGNER:
prepares the designs and layout drawings of new detection and suppression systems for commercial, residential, and industrial applications.

FIRE PROTECTION EQUIPMENT SALES REPRESENTATIVE:
merchandises fire protection equipment for commercial, industrial, and residential applications.

FIRE PROTECTION SYSTEMS INSTALLER:
interprets the design for on-site installation, operation, and maintenance of fire protection systems.

INDUSTRIAL SAFETY TECHNICIAN:
assists the industrial safety manager in plant fire safety programs and procedures; and insures compliance with federal, state, and municipal codes and ordinances.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Fire Protection Consultant
• Fire Protection Equipment Sales Manager
• Industrial Safety Manager
• Municipal Safety Manager
• Property Loss/Risk Management Specialist
• Design Manager
• Contract Estimator

CURRICULUM
The Fire Protection Engineering Technology Associate Degree is a two-year, four-semester program. Upon graduation a student will have completed 68 credits.

FIRST SEMESTER
Course No. Description Credits
503-111 Fire Protect Tech-Intro 2
606-110 Drafting 1-Tech 4
801-196 Communication-Interpers 3
804-150 Math 1-Tech 5
809-199 Psychology-Human Relations 3
SEMESTER TOTAL 17

SECOND SEMESTER
503-120 Fire Protect Theory/Prin 3
503-123 Fire Tech-Blueprint Rdg 2
503-136 Sprinkler Hydraulic-Auto 2
606-114 AC/DC Principles 4
804-160 Math 2-Tech 4
ELECTIVE 3
SEMESTER TOTAL 18

THIRD SEMESTER
503-130 Fire Protect System Appl 3
503-133 Fire Detection-Electron 4
503-138 Hazard Analysis 3
503-146 Sprinkler-Automatic 3
503-180 Nicet-Basic 2
801-195 Communication-Written 3
SEMESTER TOTAL 18

FOURTH SEMESTER
503-140 Hazards Sys Design-Spec 3
503-148 Technical Project 3
801-197 Reporting-Technical 3
809-197 Society-Amer Contemp 3
ELECTIVE 3
SEMESTER TOTAL 15


This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

503-111 FIRE PROTECTION TECHNICIAN-INTRODUCTION... historical, scientific background, and modern developments in the fire protection field; analyzing fire problems: causes, costs, life and property loss; information about fire protection agencies; fire protection occupations; combustion processes.

503-120 FIRE PROTECTION THEORY/PRINCIPLES ... manual and automatic fire extinguishers and their related agents as they apply to identified fire hazard situations and conditions.

503-123 FIRE TECHNOLOGY-BLUEPRINT READING ... reading construction floor plans, elevations, construction details, site plans, electrical plans, plumbing plans, HVAC, fire protection plans, site survey, bill of materials, and specifications.

503-130 FIRE PROTECTION SYSTEM APPLICATION ... selection of detection for specific hazards, proper location and spacing of detectors, programming fire control panels, and proper alarm wiring.

503-133 FIRE DETECTION-ELECTRONICS ... electronic sensing and activating systems, system components and interrelationships, detection, alarm and suppression systems, electronic functions, component parts and power sources, and test and troubleshooting systems. (Prerequisite: 605-114).

503-136 SPRINKLER HYDRAULICS-AUTO ... hydraulic calculations for tree, loop, and grid systems using manual and computerized methods; and testing and evaluating water supplies for fire protection.

503-138 HAZARD ANALYSIS ... planning, surveying, and making professional recommendations regarding appropriate fire prevention, and suppression and detection systems for specified industrial fire hazards.

503-140 HAZARDS SYSTEM DESIGN-SPECIAL ... theories and principles of fire suppression in designing appropriate fire systems emphasizing CO2 and dry chemical methods, and building fire safety design and construction. (Prerequisite: 503-130).

503-146 SPRINKLER-AUTOMATIC ... fire protection requirements of automatic sprinkler systems, design pipe schedule and hydraulically calculated water suppression systems, foam systems, and fire pump operations.

503-148 TECHNICAL PROJECT ... independent research report or project utilizing technical and communication skills from Fire Protection Engineering Technician program.

503-180 NICET-BASIC ... procedures, forms, standards, codes, and general knowledge necessary to successfully pass the crossover work elements in level 2 - NICET Certification in "Auto Sprinkler, Special Hazard and Fire Alarm Systems Layouts".

606-110 DRAFTING 1-TECHNICAL ... drafting tools and equipment, lettering and engineering documentation, geometric construction, orthographic projection, auxiliary views, section views, dimensioning, and pictorial drawings as they pertain to both mechanical and architectural drafting.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Food/Environmental Laboratory Technician

ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay Campus. For more information, call the Green Bay campus at (920)498-5439 or (800)422-NWTC ext. 439.

PROGRAM DESCRIPTION
This program trains students to obtain and prepare samples according to specific, standard lab methods and governmental regulations; perform physical, chemical and microbiological tests; and record and analyze data.

Graduates of this Program will be able to:
• Recognize a variety of laboratory settings.
• Attend professional meetings, workshops, or conferences.
• Interpret safety, food, and environmental laws and regulations.
• Recognize impacts on natural resources.
• Establish and maintain documentation.
• Incorporate quality assurance, and interpret quality control in laboratory testing and management.
• Read and interpret technical articles and literature.
• Collect data; calculate, report, and interpret results.
• Discard waste properly.
• Maintain work station.
• Collect, transport, store, and prepare samples for analysis.
• Prepare media, reagents, standards, solutions, and labware.
• Use aseptic technique to isolate, enumerate, and identify microorganisms.
• Calculate the concentration of microorganisms.
• Set up and maintain instruments.
• Analyze with wet chemistry and instrumentation to detect physical properties and/or chemical composition of samples.
• Detect the presence or absence of chemicals.
• Conduct a taste panel.
• Conduct a shelf life study.
• Prioritize work schedule.
• Follow safety requirements.
• Explain the rationale for laboratory analysis.

REQUIREMENTS FOR PROGRAM ENTRY
• High School algebra or Math-Tech Algebra (804-120) within the last 5 years, with a C or better grade.
• High School chemistry or Basic Chemistry (806-155) within the last 5 years, with a C or better grade.

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of this program will have potential for employment as Laboratory Technician in a variety of settings including industrial and government agencies.

Technicians perform chemical, physical, microbiological, and sensory tests on food and environmental samples using approved methods to generate accurate data. The data is used for decision-making and planning by many levels of an organization.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Laboratory Supervisor
• Government Inspector
• Sanitarian
• Process Engineer
• Procurement Agent
• Food Technologist
• Laboratory Manager

CURRICULUM

FIRST SEMESTER
Course No. Description Credits
103-103 Micro Basics MS Office 1 3
* 506-111 Laboratory Prin/Standard 3
* 506-124 Math/Statistics-Lab 4
801-196 Communication-Interpers 3
* 806-165 Chemistry-Intro 5
SEMESTER TOTAL 18

SECOND SEMESTER
* 065-120 Science-Food 2
* 065-120 Science-Environment 2
* 506-122 Chemistry-Analytical Tech 1 4
801-195 Communication-Written 3
* 806-141 Microbiology-General 4
SEMESTER TOTAL 15

THIRD SEMESTER
* 065-141 Microbiology-Food 5
* 506-132 Chemistry-Analytical Tech 2 4
* 506-133 Lab Quality Assurance Control 3
809-195 Economics 3
ELECTIVE 3
SEMESTER TOTAL 18

FOURTH SEMESTER
* 506-142 Chemistry-Analytical Tech 3 4
506-143 Sensory 2
801-197 Reporting-Technical 3
209-199 Psychology-Human Relations 3
ELECTIVE 3
SEMESTER TOTAL 15

No final grade lower than C is acceptable in any of the courses marked with an asterisk. A student must repeat that particular course to achieve a C or better final grade in order to continue in or graduate from this program.

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

065-120 SCIENCE-FOOD ...definition of food science, food components, steps in processing; manufacture of dairy, vegetable, fruit, meat, grain, and confectionery products; additives, laws, and biotechnology. (Prerequisite: 806-165).

065-141 MICROBIOLOGY-FOOD ...media preparation; aseptic technique; quality control; aerobic count; coliform count; yeast and mold count; sanitation audit; starter cultures; and rapid and standard methods for isolation, identification, and enumeration of pathogens. (Prerequisite: 065-120, 806-141).

506-111 LABORATORY PRINCIPLES/STANDARDS/SAFETY ...fundamental standard laboratory techniques and equipment; hazards; safety and first aid; material safety data sheets; and government regulations related to laboratories, food, and the environment. (Prerequisite: 804-120, 806-155).

506-120 SCIENCE-ENVIRONMENT ...scientific methods, ecosystems, material cycles, soils, sources and sinks of chemicals in the environment, toxicology, transport of pollutants, water treatment, risk assessment, solid wastes, energy, local issues, and global future. (Prerequisite: 804-120, 806-155).

506-122 CHEMISTRY-ANALYTICAL TECH 1 ...gravimetric analysis for moisture content; use of electrodes; titrimetric analysis for acidity, water hardness, chlorine, and salt content; spectroscopy; chromatography and high pressure liquid chromatography (HPLC). (Prerequisite: completion of 1st semester).

506-124 MATH/STATISTICS-LAB ...systems of measure, conversions, factors, logarithms, solutions, dilutions, creating and interpreting tables and figures, linear regression, probability, and introduction to statistics. (Prerequisite: 804-120, 806-155).

506-132 CHEMISTRY-ANALYTICAL TECH 2 ...applications of HPLC and atomic absorption spectroscopy, and measurement of cyanide, physical properties, turbidity, conductivity, oxygen demand, phosphorus, nitrogen, fiber, and lipids. (Prerequisite: 506-120, 506-122).

506-133 LAB QUALITY ASSURANCE CONTROL ...management practices; documentation; random assignable cause; statistical process control; normal distribution calculations; sampling plans; hazard analysis of critical control points; quality tools; method detection limits; state, national, and international standards. (Prerequisite: completion of 2nd semester).

506-142 CHEMISTRY-ANALYTICAL TECH 3 ...applications of gas chromatography, infrared spectroscopy, and measurement of solids in environmental samples. (Prerequisite: 506-132).

506-143 SENSORY METHODS ...physiology and measurement of color, odors, flavors, and texture; conducting and statistical interpretation of a taste panel and shelf life project; functionality, viscosity, grading can defects, and rancidity. (Prerequisite: 506-133).

806-141 MICROBIOLOGY-GENERAL ...aseptic technique; use of microscope; microbial growth requirements; preparation and disposal of supplies; and isolation, characterization, enumeration, and identification of microorganisms. (Prerequisite: completion of 1st semester).

806-165 CHEMISTRY-INTRODUCTION ...modern fundamental principles: atomic structure, chemical bonding, periodic table, molecular structure and properties, solutions, chemical equilibrium, and a survey of organic and biochemistry. (Prerequisite: 806-155).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Gas Utility Construction and Service

TECHNICAL DIPLOMA - ONE YEAR
Offered at the Green Bay campus. For more information, call the Green Bay Campus at (920)498-6823 or (800)422-NWTC ext. 823.

PROGRAM DESCRIPTION
This program prepares students to install, maintain and operate natural gas distribution systems used to supply residential, commercial and industrial customers.

Graduates of this program will be able to:
• Communicate technical information.
• Operate tools and equipment.
• Join pipe.
• Install propane gas distribution systems.
• Install natural gas distribution systems.
• Apply customer service skills.
• Maintain gas distribution systems.
• Operate pipeline excavation equipment.
• Service gas appliances.

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
• Be able to obtain a commercial driver’s license
• Place satisfactorily in the NWTC mathematics examination

READING LEVEL
Materials used within this program have an average reading level of 11th grade.

MATH LEVEL
Students should have mastered algebra math skills.
For a description of algebra, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Gas Construction Mechanic, Gas Meter Mechanic, Gas Service Mechanic, Gas Clerk-Estimator, Gas Regulator Maintenance Mechanic, Gas Appliances Repair Mechanic, and Underground Facilities Locator.

GAS CONSTRUCTION MECHANIC: installs and maintains gas distribution and transmission pipelines using trenching, backhoe, road boring, plastic fusion, welding, mapping, and record keeping skills.

GAS METER MECHANIC: installs, repairs, and maintains electronic and mechanical gas metering equipment.

GAS SERVICE MECHANIC: installs and maintains residential, commercial, and industrial gas piping, valving, pressure regulating, and over-pressure protective equipment.

GAS CLERK-ESTIMATOR: develops specifications and related maps and records used in installing and maintaining gas distribution facilities. Records of this type are manual but are moving towards computer emphasis.

GAS REGULATOR MAINTENANCE MECHANIC: installs and maintains high pressure gas regulating, measuring, odorizing, heating, filtering, valving, and piping systems; electronically and mechanically operated equipment is involved.

GAS APPLIANCE REPAIR MECHANIC: maintains and troubleshoots residential and/or commercial gas appliances and heating/cooling equipment.

UNDERGROUND FACILITIES LOCATOR: locates and marks all underground facilities prior to excavation using various locating equipment.

CURRICULUM
The Gas Utility Construction and Service Technical Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 32 credits.

FIRST SEMESTER
Course No. Description Credits
413-348 Electricity-Basic 2
442-315 Welding-Gas Service 1 2
469-312 Gas Service Field Trng 1 9
804-384 Mathematics 2

SECOND SEMESTER
413-358 Electricity-Gas Appliance 2
442-325 Welding-Gas Service 2 2
469-322 Gas Service Field Trng 2 9
801-385 Communicating-Writing 1
801-386 Communicating-Interpers 1
806-360 Metallurgy-Applied 2

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

413-348 ELECTRICITY-BASIC...electron theory, electrical terms, Ohm's Law, DC and AC circuits, magnetism and magnetic devices, electrical measurements, inductance and capacitance, relays and transformers, motors and generators, circuit protective devices, electrical safety.

413-358 ELECTRICITY-GAS APPLIANCE...operation and servicing of various residential gas appliances, covering electrical circuits, reading wire diagrams, use of test equipment, electric motors, ignition systems, electronic controls and sensors, application, and troubleshooting.

442-315 WELDING-GAS SERVICE 1...position pipe welding utilizing oxyacetylene and gas metal arc welding, welding safety, weld faults and causes, weld joint design, and fitup.

442-325 WELDING-GAS SERVICE 2...position pipe welding utilizing gas metal arc welding and shielded metal arc welding processes, pipe fitup, and pipe weld testing according to API 1104 code. (Prerequisite: 442-315).

469-312 GAS SERVICE FIELD TRAINING 1...installation and repair of plastic mains and services, installation standards, pressure testing, plastic fusion, leak detection procedures, construction equipment operation (trenching, backhoe, boring), gas and vehicular safety, mapping, propane gas.

469-322 GAS SERVICE FIELD TRAINING 2...installation and repair of steel mains and services, welding, maintenance and repair of residential gas appliances, venting codes, line stoppering equipment, corrosion control, regulators, metering, customer service, first aid.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5479 or (800)422-NWTC Ext. 479.

PROGRAM DESCRIPTION
Health Care Business Services prepares a student to work in the business offices of medical and dental clinics, hospitals, nursing homes, and related health care facilities.

Graduates of this program will be able to:
• Follow federal, state and local laws and regulations.
• Identify marketing methods for health care facilities.
• Use service and managed care contracts.
• Process patient accounts receivables.
• Schedule patient appointments.
• Use medical terminology.
• Use a financial calculator.
• Use ICD 9 and CPT 4 coding.
• Complete health insurance claim forms.
• Process supply inventory.
• Record accounting and financial transactions in a medical setting.
• Use a computer keyboard.
• Use effective telephone techniques.
• Use stress management techniques.
• Participate in an employment interview.
• Process health insurance claim forms.

REQUIREMENTS FOR PROGRAM ENTRY
• Basic math
• Ability to use computer keyboard

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

CURRICULUM
The Health Care Business Services Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 67 credits.

FIRST SEMESTER
Course No. Description Credits
102-101 Math-Finance 3
106-107 Keyboarding-Speed/Accuracy 1
106-145 Keyboarding 1
160-110 Health Care-Admin/Org 3
510-165 Medical Terminology 3
801-196 Communication-Interpers 3
809-199 Psychology-Human Relations 3
SEMESTER TOTAL 17

SECOND SEMESTER
101-110 Accounting 1 4
102-121 Medical Ethics/Law 3
102-123 Insurance Coding Proc 3
103-103 Micro Basics MS Office 1 3
801-195 Communication-Written 3
809-195 Economics 3
SEMESTER TOTAL 19

THIRD SEMESTER
101-120 Accounting 2 4
104-161 Insurance-Health 3
160-130 Health Care Mgmt Proc 4
809-197 Society-Amer Contemp 3
ELECTIVE 3
SEMESTER TOTAL 17

FOURTH SEMESTER
101-145 Financial Mgmt-Medical 3
160-140 Health Care Internship 3
OR
160 141 Health Care Field Study 3
160-142 Medical Credit/Collect 2
160-143 Medical Records/System/Proc 3
ELECTIVE 3
SEMESTER TOTAL 14

SUGGESTED ELECTIVES for this program include: Accounting-Payroll (101-151), Customer Service Management (104-191), Finance-Personal (102-153).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

101-145 FINANCIAL MANAGEMENT-MEDICAL
...budgeting, operations, cash flow, capital; rate setting process; working capital management; health care credit; cash and short-term investments; inventory management; long-term financing; leasing; purchasing capital equipment; and reporting operating results. (Prerequisite: 101-120).

102-101 MATH-FINANCE ...
...trade and cash discounts, use of financial calculators, time value of money/investment calculations, inventory valuation, depreciation, credit management operations, payroll, financial statement, and finance applications with reliance on financial calculation.

102-121 MEDICAL ETHICS/LAW ...
...the code of ethics, patient’s bill of rights, law introduction, lawyers and clients, judges, courts, juries, civil action, appeal, out-of-court settlements, contract laws, wills, trusts, medical cases, and legal issues.

102-123 INSURANCE CODING PROCEDURES ...
...coding in health care reporting including the background and use of ICD-9-CM, CPT 4, HCPCS, and DRGs as they relate to medical insurance coding for reimbursement. (Prerequisite: 510-165).

104-161 INSURANCE-HEALTH ...
...risk management: private-sector health insurance, dental insurance, health maintenance organizations, worker’s compensation, and malpractice issues; government plans: Medicare, Medical Assistance, Champus, and National Health Insurance, and insurance for health care facilities.

160-130 HEALTH CARE MANAGEMENT
PROCEDURES ...
...management and supervision in health care institutions: planning, organizing, staffing, directing and controlling, and labor relations.

160-140 HEALTH CARE BUSINESS SERVICES
INTERNSHIP ...
...training within an appropriate healthcare facility for actual work experience and observations; career planning activities. (Prerequisite: second year student).

160-141 HEALTH CARE FIELD STUDY ...
...practices, procedures, and policies of health care institutions in field observations or field study; career planning activities. (Prerequisite: second year student).

160-142 MEDICAL CREDIT/COLLECTIONS ...
...credit in a medical facility; history, definition, and department organization; granting credit in a medical facility; controlling credit: collecting the account, measuring the effort, and auditing the function.

160-143 MEDICAL RECORDS/SYSTEMS/ PROCEDURES ...
...medical records operation, release and storage of medical records, medical statistics, integrated office, patient appointments and scheduling, medical information processing, ergonomics, and office controls and reports. (Prerequisite: 103-103).

510-165 MEDICAL TERMINOLOGY ...
...spelling, pronunciation, definition, and abbreviation application, word roots, prefixes and suffixes, and anatomical structure.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Health Information Technology  Program Code 105301

ASSOCIATE DEGREE - TWO YEARS PLUS TWO SUMMERS

Offered at the Green Bay campus. For more information call the Green Bay Campus at (920) 498-5530 or (800)422-NWTC ext. 530.

PROGRAM DESCRIPTION
Health Information Technology teaches students to work with medical records and statistics, code medical data, maintain health record systems, transcribe medical information, and control the usage and release of health information.

Graduates of this program will be able to:
• Be successfully employed in the field.
• Define healthcare data elements.
• Evaluate documentation.
• Collect, store, and retrieve patient and departmental data.
• Implement coding and classification systems.
• Assign diagnostic/procedure codes.
• Design healthcare data integrity procedures and checks.
• Monitor data accuracy (subdomain 1d).
• Analyze, interpret, and present healthcare data/statistics.
• Understand information technology (Domain 2).
• Create and maintain information systems. (Domain 2)
• Manage/supervise resources, training, projects and processes in the Health Information Department.
• Act to improve performance and strategic thinking in the Health Information Dept. and institution.
• Monitor changes in and compliance with the legal and regulatory environment related to health information.
• Release health information/patient records.
• Apply the organization, financing and delivery of health care services.
• Apply principles of biomedical sciences.
• Use basic microcomputer applications.
• Display confidence in professional knowledge and skills.
• Adapt to change.
• Work cooperatively.
• Be service-oriented.
• Understand ethical implications.
• Choose appropriate actions.
• Share knowledge with others.

The Health Information Technology program is accredited by the Commission on the Accreditation of Allied Health Education Programs (CAAHEP) in cooperation with the Council on Accreditation of the American Health Information Management Association. 919 N. Michigan Avenue, Suite 1400 Chicago, IL 60611-1683 (312)787-2672

A student is required to provide his/her own transportation to clinical facilities, pay for liability insurance for each clinical course, and purchase any uniforms/name tags which might be required.

REQUIREMENTS FOR PROGRAM ENTRY
• Minimum standard composite score of 20 on the ACT assessment
• A high school diploma or equivalent
• A high school biology or the equivalent
• Typing skills of at least 40 WPM
• A medical examination satisfactorily completed within three months before entering the program
• Attendance at program orientation session

READING LEVEL
Materials used within this program have an average reading level of 14th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Coder/Abstractor, Release of Information Specialist, Health Record Analyst, Discharge Analyst, Cancer Registrar, Medical Transcriptionist, Quality Analyst, Utilization Review Coordinator, or Supervisor in a Health Information/Medical Record Department.

Career opportunities are available in many facility areas: hospitals, clinics, nursing homes, mental health facilities, and home health agencies; state and federal health agencies; and private industry (insurance, microfilm, record storage and retrieval, computer vendors, and copy service companies).

CODER/ABSTRACTOR: assigns diagnoses and procedure codes according to recognized classification systems, retrieves and enters patient health information into a computerized system.

RELEASE OF INFORMATION SPECIALIST: responsible for the usage and proper release of health information.

HEALTH RECORD ANALYST: retrieves and displays health data for administrative and health statistics using the medical record or a variety of computerized health record indexes.

DISCHARGE ANALYST: organizes, analyzes, and technically evaluates medical records according to established standards.

CANCER REGISTRAR: retrieves and displays data on a facility's treatment and staging of cancer cases and is an integral part of a cancer program and its accreditation by the American College of Surgeons.

MEDICAL TRANSCRIPTIONIST: uses transcription and word processing equipment to transcribe dictation from physicians and allied health professionals. The Accredited Record Technician (ART) generally would become a supervisor of this function.

QUALITY ANALYST: retrieves and displays health data using predetermined criteria to assist organizations in their quality improvement process.

UTILIZATION REVIEW COORDINATOR: performs admission, continued stay, and discharge review on hospital patients regardless of their pay source.

SUPERVISOR IN A HEALTH INFORMATION/MEDICAL RECORD DEPARTMENT: may be responsible for all or part of the functions listed above in addition to assisting with the maintenance of optimum information storage and retrieval systems.

NOTE: Students who do not meet the above requirements should consult an NWTC counselor about ways to make up any deficiencies through testing or course work.

Graduates of the program are eligible to take the national accreditation examination offered by the American Health Information Management Association (AHIMA) to become an Accredited Record Technician (ART).

CURRICULUM
The Health Information Technology Associate Degree is a two-year, two-summer, six-semester program. Upon graduation a student will have completed 72 credits. This program is partially eligible for financial aid.

SUMMER SEMESTER

<table>
<thead>
<tr>
<th>Course No. Description</th>
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<tbody>
<tr>
<td>809-195 Communication-Interpers</td>
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<tr>
<td>809-197 Communication-Written</td>
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FIRST SEMESTER

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<td>530-110 Medical Info Processing</td>
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<tr>
<td>530-112 Medical Terminology</td>
<td>3</td>
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<tr>
<td>801-195 Communication-Written</td>
<td>3</td>
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<td>809-197 Sociology-Intro</td>
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SECOND SEMESTER

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<tr>
<td>530-120 Medical Transcription</td>
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<td>530-124 Diagnostic/Proc-Code 1</td>
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<td>530-132 Health Statistics</td>
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<td>530-135 Health Info-Legal</td>
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<td>809-197 Pathophysiology</td>
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SUMMER SEMESTER

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<td>809-195 Economics</td>
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THIRD SEMESTER

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<tr>
<th>Course No. Description</th>
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<tbody>
<tr>
<td>530-131 Health Care-Quality</td>
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<tr>
<td>530-133 Health Info Affiliation 1</td>
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<tr>
<td>530-136 Health Info-Mangement</td>
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<td>530-137 Diagnostic/Proc-Code 2</td>
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<td>809-197 Psychology-Intro</td>
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FOURTH SEMESTER

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<tbody>
<tr>
<td>530-141 Health Info Affiliation 2</td>
<td>9</td>
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<tr>
<td>530-142 Health Info Tech Update</td>
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<tr>
<td>ELECTIVE</td>
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</table>

* No final grade lower than C is acceptable in any of the courses marked with an asterisk. A student must repeat that particular course to achieve a C or better final grade in order to continue in or graduate from this program. If the course is sequenced, the successful retake must occur before continuing the sequence.

Permission of Program Director is required if a student is not enrolled in this program. However, permission of the Program Director is not required for enrollment in Anatomy/Physiology I and II, Pathophysiology, and Medical Terminology.

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

30-110 MEDICAL INFORMATION PROCESSING
...medical record contents: registration procedures, quantitative analysis, numbering, filing, retention, abstracting, and indexing; computerization of record processing activities; and records control, retention, creating, and evaluating systems. (Prerequisite: admission to program, instructor consent).

530-112 MEDICAL TERMINOLOGY...basic word elements, word analysis, word building, spelling, pronunciation, and abbreviations; medical terms as they relate to symptoms; pathologic conditions; diagnostic and therapeutic modalities; normal and abnormal anatomy; and physiology.

530-120 MEDICAL TRANSCRIPTION
...transcription process as it relates to medical dictation in a health care facility. Students learn transcription techniques; practice transcribing physician's dictated reports; and apply grammar, punctuation, spelling, and technical rules. (Prerequisite: 106-109, 530-112).

530-124 DIAGNOSTIC/PROCEDURAL CODING 1
...the International Classification of Diseases (ICD-9-CM) with emphasis on basic coding skills; use of this classification system in acute and other health care settings; its application for statistical and reimbursement purposes. (Prerequisite: 806-187, Corequisite: 806-197).

530-131 HEALTH CARE-QUALITY
...quality management concepts; quality improvement processes; programs and procedures as they relate to medical records; utilization review, risk management, and other healthcare evaluation activities and requirements. (Prerequisite: completion of 2nd semester).

530-132 HEALTH STATISTICS
...medical statistical data collection and display including definitions and procedures for computing inpatient census, percentage of occupancy, mortality, autopsies, length of stay, and other rates. (Prerequisite: completion of 1st semester).

530-133 HEALTH INFORMATION TECHNOLOGY-AFFILIATION 1
...clinical facility assignments designed to allow students to observe, assist, and acquire skills in application of basic health information functions. (Prerequisite: completion of 2nd semester).

530-135 HEALTH INFORMATION-LEGAL
...the judicial system, legal terminology, privileged and confidential information, legal consents, mechanism for releasing information, medical records as legal documents, and legal procedures in court disclosure of medical record information. (Prerequisite: completion of 1st semester).

530-136 HEALTH INFORMATION TECHNOLOGY-MANAGEMENT
...functions of the medical record staff, responsibilities in assisting the medical staff and other health care providers, and the role of the HIT as supervisor. (Prerequisite: completion of 2nd semester).

530-137 DIAGNOSTIC/PROCEDURAL-CODING 2
...advanced ICD-9-CM coding skills, their application to the statistical and reimbursement mechanisms used in acute and other health care settings; structure and use of the CPT/HCPCS coding scheme used in ambulatory care. (Prerequisite: 530-124).

530-141 HEALTH INFORMATION AFFILIATION 2
...application of previously acquired knowledge and skills in clinical experiences with the technical procedures of health record systems in various health care settings. (Prerequisite: completion of 3rd semester, faculty recommendation).

530-142 HEALTH INFORMATION TECHNOLOGY UPDATE
...clinical situations including a review seminar in preparation for accreditation examination and pre-accreditation/pre-graduation activities. (Prerequisite: completion of 3rd semester, Corequisite: 530-141).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Health Unit Coordinator  

**TECHNICAL DIPLOMA - ONE SEMESTER**

Offered at the Green Bay campus. For more information call the Green Bay Campus at (920)498-5530 or (800)422-NWTC ext. 530.

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**PROGRAM DESCRIPTION**

Health Unit Coordinator prepares students to transcribe physician’s orders, maintain supplies, perform clerical duties, and to coordinate the communication in the nursing station.

Graduates of this program will be able to:
- Obtain employment in the health care field.
- Communicate effectively.
- Perform clinical duties.
- Display professional behaviors
- Pass the NAHUC National Certification Exam.

**REQUIREMENTS FOR PROGRAM ENTRY**

- High school diploma or equivalent
- Reading test - 12th grade reading level
- Math test - A score of 80% on math test will include general math, percentages, proportions, and decimals
- Keyboarding skills of 20 WPM
- An interview/orientation
- A satisfactory medical examination within three months before entering the program

**READING LEVEL**

Materials used within this program have an average reading level of 13th grade.

**MATH LEVEL**

Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

**NOTE:** A student who does not meet the above requirements should consult an NWTC counselor about ways to make up any deficiencies through testing or course work.

---

**EMPLOYMENT POTENTIAL**

A graduate of the program has the potential for employment as a Health Unit Coordinator, Health Claims Approver, Medical Records Clerk, or Hospital Admissions Office Clerk.

**HEALTH UNIT COORDINATOR:** works under the supervision of the Registered Nurse, performs receptionist and coordinating functions in assigned department, transcribes physician orders manually or using a computerized order entry system, communicates with most hospital departments and personnel, and maintains a well organized nursing station with adequate supplies.

**HEALTH CLAIMS APPROVER:** processes insurance claims on a computer terminal.

**MEDICAL RECORDS CLERK:** handles all patient medical records in areas such as progress notes and pulls records of patients on a daily basis.

**HOSPITAL ADMISSIONS OFFICE CLERK:** obtains and processes patient data needed for inpatient and outpatient services.

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**CURRICULUM**

The Health Unit Coordinator Technical Diploma is a one-semester program. Upon graduation a student will have completed 15 credits.

**FIRST SEMESTER**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>106-345</td>
<td>Information Process-Basic</td>
<td>1</td>
</tr>
<tr>
<td>509-360</td>
<td>Medical Terminology</td>
<td>2</td>
</tr>
<tr>
<td>510-340</td>
<td>Health Unit Coor-Order Entr</td>
<td>1</td>
</tr>
<tr>
<td>510-342</td>
<td>Health Unit Coor-Clinic</td>
<td>4</td>
</tr>
<tr>
<td>510-343</td>
<td>Health Unit Coor Issue</td>
<td>1</td>
</tr>
<tr>
<td>510-344</td>
<td>Health Unit Coor-Proc 1</td>
<td>3</td>
</tr>
<tr>
<td>510-346</td>
<td>Health Unit Coor-Proc 2</td>
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</tr>
<tr>
<td>801-385</td>
<td>Communicating-Writing</td>
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<tr>
<td>801-386</td>
<td>Communicating-Interpers</td>
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</table>

**SEMESTER TOTAL**

16

*A grade of C is required to pass HUC courses (509 & 510) and graduate from program.

The following courses may be taken prior to entering the program or must be taken concurrent with 510-344 Health Unit Coordinator Procedures 1.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>106-345</td>
<td>Information Process-Basic</td>
<td>1</td>
</tr>
<tr>
<td>509-360</td>
<td>Medical Terminology</td>
<td>2</td>
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<tr>
<td>510-343</td>
<td>Health Unit Coord Prof Issues</td>
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<tr>
<td>801-385</td>
<td>Communicating-Writing</td>
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</tr>
<tr>
<td>801-386</td>
<td>Communicating-Interpers</td>
<td>1</td>
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</table>

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

509-360 MEDICAL TERMINOLOGY ...spelling, pronunciation, definition, and abbreviation application; word roots, prefixes, and suffixes; and anatomical structure.

510-340 HEALTH UNIT COORDINATOR-ORDER ENTRY ...computerized transcription of physician orders, nursing order entry, actions on orders, charting unit tests, retrieval of patient data, print reports, patient transfer and discharge, charges/credits, and composing/sending miso-grams. (Prerequisite: 106-345, 510-344).

510-341 HEALTH UNIT COORDINATOR-CLINIC ...supervised application of the principles presented in Health Unit Coordinator Procedures, Medical Terminology, Professional Issues for Health Unit Coordinators, and Information Processing and Communication courses. (Prerequisite: 510-340, 510-344).

510-343 HEALTH UNIT COORDINATOR-PROFESSIONAL ISSUES ...Health Unit Coordinator student and professional roles, legal and ethical aspects, interviewing, job search, stress management, conflict resolution, customer service, dealing with change, legislative process, multicultural issues, team building.

510-344 HEALTH UNIT COORDINATOR-PROCEDURES 1 ...hospital functions and organizational patterns; medical specialties; Health Unit Coordinator clerical role/functions including organization, safety responsibilities, maintenance of patient chart, and manual transcription of treatment, dietary, and medication orders. (Prerequisite: admission to program).

510-346 HEALTH UNIT COORDINATOR-PROCEDURES 2 ...integration of clerical role and functions; manual transcription of laboratory, diagnostic; respiratory, orthopedic, admission, preoperative, postoperative, and physician orders; and performance of discharge, transfer, and postmortem responsibilities. (Prerequisite: 510-340, 510-344).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
PROGRAM DESCRIPTION
Heating, Ventilation, Air Conditioning, and Refrigeration Technology prepares students to work with the control of air in respect to its heating, cooling, humidity, and cleanliness. Graduates will be able to install, service, troubleshoot, and repair heating, ventilating, air conditioning, and refrigeration systems.

Graduates of this program will be able to:
- Calibrate electronic control systems.
- Install an energy management system.
- Prepare HVAC service order and reports.
- Communicate work performed to the customer.
- Estimate the heating & cooling load of a residential & light commercial building.
- Troubleshoot HVAC motors and starting components.
- Service a hydronic heating system.
- Develop an HVAC control circuit.
- Determine the integrity of an electrical supply system.
- Troubleshoot HVAC electrical control system components.
- Design a low pressure duct system.
- Troubleshoot air flow problems in a duct system.
- Calculate the properties of air using a psychrometric chart.
- Obtain the EPA Refrigeration Certification.
- Troubleshoot a rooftop unit heating system.
- Troubleshoot an oil fired heating system.
- Troubleshoot a gas fired heating system.
- Commission an energy management system.
- Install a refrigeration piping system.
- Design a hydronic piping system.
- Install a hydronic piping system.
- Troubleshoot a pneumatic control system.
- Select equipment to maintain basic ventilation and indoor air quality for residential size systems.

REQUIREMENTS FOR PROGRAM ENTRY
- High school diploma or equivalent
- High school algebra or equivalent
- NWTC placement exam determines starting level in program

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered algebra skills before entering this program. For a description of algebra skills, see the Basic Education section of this catalog on page 20.

CURRICULUM
The Heating, Ventilation, Air Conditioning, and Refrigeration Technology Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
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<tr>
<td>601-110</td>
<td>Air Conditioning Fund</td>
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<tr>
<td>601-111</td>
<td>Electrical Fund-HVACR</td>
<td>3</td>
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<tr>
<td>601-133</td>
<td>Refrigeration Fund</td>
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</tr>
<tr>
<td>606-112</td>
<td>Engineering Applications</td>
<td>1</td>
</tr>
<tr>
<td>801-196</td>
<td>Communication-Interpers</td>
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<tr>
<td>804-130</td>
<td>Algebra/Trigonometry</td>
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SECOND SEMESTER

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<tr>
<td>601-127</td>
<td>Electrical Control/Sys</td>
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</tr>
<tr>
<td>614-126</td>
<td>Architectural Mech Systems</td>
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<tr>
<td>801-195</td>
<td>Communication-Written</td>
<td>3</td>
</tr>
<tr>
<td>804-131</td>
<td>Algebra-Inter</td>
<td>3</td>
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THIRD SEMESTER

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<td>601-131</td>
<td>Heating System Appl</td>
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<td>601-132</td>
<td>Air Conditioning Appl</td>
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<td>601-147</td>
<td>Control Circuit Appl</td>
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<td>801-197</td>
<td>Reporting-Technical</td>
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<tr>
<td>809-197</td>
<td>Society-Amer Contemp</td>
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FOURTH SEMESTER

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<td>Heat/Vent/AC/Refrig Sys</td>
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<td>601-143</td>
<td>Refrigeration Appl</td>
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<td>601-145</td>
<td>Electronic Energy Mgmt Sys</td>
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<td>809-199</td>
<td>Psychology-Human Relations</td>
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<td>SEMESTER TOTAL</td>
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</table>

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

601-110 AIR CONDITIONING FUNDAMENTALS
...physics for air conditioning, temperature/pressure measurements, heat types, quantities and transfer rates, basic comfort conditioning systems, heat load calculations for heating and cooling, and analysis of the comfort zone.

601-111 ELECTRICAL FUNDAMENTALS-HVACR
...electron theory, AC/DC fundamentals, electrical quantities, OHMs Law, magnetic principles, solenoids, breakers/fuses, transformers and relays, schematic diagram development/troubleshooting.

601-121 HEATING SYSTEMS
...heating system safety, heat transfer properties, gas properties, gas combustion processes, gas burner types, heating appliance types, gas flow control devices, gas pipe sizing, gas pipe installation and venting requirements. (Prerequisite: completion of 1st semester).

601-127 ELECTRICAL CONTROLSYSTEMS
...operating and safety control construction, operation, and applications: development, wiring, and troubleshooting of control schematics for basic HVAC/R systems. (Prerequisite: completion of 1st semester).

601-131 HEATING SYSTEM APPLICATIONS
...piping and venting system design; hydronic piping system design and layout; pump service and selection; installation, operation, start-up, and troubleshooting for condensing furnaces, boilers, unit heaters, and radiant heaters. (Prerequisite: completion of 2nd semester).

601-132 AIR CONDITIONING APPLICATIONS
...various types of fan systems, duct design methods, load calculating and estimating, air and fluid measurement. (Prerequisite: completion of 2nd semester).

601-133 REFRIGERATION FUNDAMENTALS
...safety hazards, principles of refrigeration physics, temperature and pressure measurement, heat content, composition of refrigerants, refrigeration compressors, metering devices, refrigerant recovery techniques, Federal certification preparation. (Prerequisite: 804-130).

601-135 MICROPROCESSOR/PNEUMATIC CONTROL SYSTEMS
...design, operation, application, and troubleshooting of microprocessor and pneumatic HVAC control systems; interfacing electro-mechanical microprocessor and pneumatic systems; applying controls to complete constant volume, VVT, and VAV air conditioning systems. (Prerequisite: completion of 3rd semester).

601-141 HVAC SYSTEMS
...HVAC component and control sequence development; servicing and troubleshooting techniques for residential, commercial, and industrial HVAC systems; rooftop units; packaged and split systems; chillers; and air handlers. (Prerequisite: completion of 3rd semester).

601-143 REFRIGERATION APPLICATIONS
...refrigeration components, piping, and system sizing and selection; installation, servicing, and troubleshooting refrigeration systems and controls for residential, commercial, and industrial refrigerator/freezers, walk-in and reach-in coolers/freezers, and ice machines. (Prerequisite: completion of 3rd semester).

601-145 ELECTRONIC ENERGY MANAGEMENT SYSTEMS
...computer control of HVAC systems; installation, programming, start-up, and troubleshooting DDC computer-controlled systems; utilizing computers to control building automation, conserve energy, and aid in HVAC troubleshooting and service. (Prerequisite: completion of 3rd semester).

601-147 CONTROL CIRCUIT APPLICATIONS
...analyze and troubleshoot AC induction motors and their starting components used in the HVAC/R industry including refrigeration compressor motors, develop schematics for motor starters and starting relay circuits. (Prerequisite: completion of 2nd semester).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
ASSOCIATE DEGREE - TWO YEARS PLUS SUMMER INTERNSHIP

Offered at the Sturgeon Bay Campus. Some coursework offered via interactive television. For more information, call the Sturgeon Bay Campus at (920)743-2207 or (800)422-NWTC ext. 747 or 750.

PROGRAM DESCRIPTION
The Hospitality and Tourism Management program prepares students for a variety of mid-management positions in lodging operations, food service operations, and tourism services. The program is grounded in experiential learning and involves extensive internship requirements between the first and second year.

Graduates of this program will be able to:
• Develop a personal hospitality/tourism career plan
• Prevent accidents and foodborne illness
• Establish quality customer service systems
• Manage housekeeping operations in a variety of lodging establishments
• Maximize productivity in front office operations
• Apply cooking principles to the preparation of food
• Maximize profits in food and beverage operations
• Perform hospitality tasks in an internship setting
• Apply laws and regulations to hospitality operations
• Evaluate maintenance operations alternatives
• Conduct a conference or special event

REQUIREMENTS FOR PROGRAM ENTRY
• High school graduate or equivalent
• Basic math skills
• Keyboarding Skills

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

This program is fully eligible for financial aid.

EMPLOYMENT POTENTIAL
Tourism is Wisconsin’s fastest-growing industry and there are many interesting and challenging opportunities for relocating to work throughout Wisconsin, the Midwest, and the United States. A graduate of the program will have the potential for employment in a wide range of positions for a broad variety of hospitality and tourism operations including: Front Office Manager, Convention Service Manager, Food Service Manager, Assistant Executive Housekeeper, and Sales Manager.

FRONT OFFICE MANAGER: coordinates the reception and control center for servicing guests, directs and supervises front office staff, and maximizes room revenue through room inventory control.

CONVENTION SERVICE MANAGER: coordinates activities of staff and convention personnel to make arrangements for group meetings and conventions held in a hotel or convention facility.

FOOD SERVICE MANAGER: coordinates food service activities of a hotel, restaurant or similar establishment, plans food service activities, schedules employees, oversees service, and controls costs.

ASSISTANT EXECUTIVE HOUSEKEEPER: supervises housekeeping employees, trains new hires, requisitions supplies, controls inventory, and inspects personnel work assignments.

SALES MANAGER: plans and administers sales programs to generate sales in a hotel or tourism organization; organizes prospect files, plans and prepares advertising and promotional materials, and arranges for publicity.

CURRICULUM
The Hospitality and Tourism Management Program is a two-year program with summer internship between the first and second year. Students will typically attend classes in four semesters. Semesters one and three will begin the day after Labor Day and end on the regular semester schedule before Christmas break. Semesters two and four will follow the regular semester schedule ending in mid-May. Upon graduation, students will have completed 67 credits.

FIRST SEMESTER
Course No. Description Credits
105-101 Business Math 3
109-110 Hospitality/Tourism 3
109-111 Food Service Sanitation-App 3
109-115 Housekeeping Management 2
109-122 Customer/Employee Relations 3
801-195 Communication-Written 3
SEMESTER TOTAL 14

SECOND SEMESTER
101-102 Accounting-Intro 3
103-103 Micro Basics MS Office 1 3
109-114 Front Office Management 3
109-123 Foods-Basic Principles 4
109-124 Food/Bev Cost Control 3
SEMESTER TOTAL 16

SUMMER SESSION
109-131 Tourism Internship 2
109-132 Lodging Internship 2
109-133 Food Service Internship 2
OR
109 134 Beverage Operations Intern 2
SEMESTER TOTAL 6

THIRD SEMESTER
104-110 Marketing Principles 3
109-142 Hospitality Law/Liability 3
801-196 Communication-Interpers 3
809-199 Psychology-Human Relations 3
ELECTIVE 3
SEMESTER TOTAL 15

FOURTH SEMESTER
109-150 Facilities Management 2
109-151 Special Events Planning 2
196-110 Supervision Principles 3
809-195 Economics 3
809-197 Society-Amer Contemp 3
ELECTIVE 3
SEMESTER TOTAL 16

SUGGESTED ELECTIVES: Beverage Management (109-163), Hospitality-Purchasing (109-162), Restaurant Operations Management (109-166).
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

109-110 HOSPITALITY/TOURISM...scope of industry, career planning, restaurant segments, food service operations, institutional food service, lodging segments, lodging operations, current issues/forces, tourism industry components, destinations, transportation, role of service, future considerations.

109-111 FOOD SERVICE SANITATION-APPLIED...contamination/foodborne illness, safe food handler, food safety systems, purchasing, receiving, storage, preparation, serving, facilities, equipment, cleaning and sanitation, cleaning program, pest control, accident prevention, crisis management, sanitation regulations/standards.

109-114 FRONT OFFICE MANAGEMENT...lodging classification, ownership affiliation, hotel/office organization, equipment, reservations, registration, guest services, guest accounting, credit monitoring, check-out/settlement, night audit, management functions, room statistics, yield management, staffing.

109-115 HOUSEKEEPING MANAGEMENT...organizing, scheduling, managing inventories, budgeting and controlling expenses, floors/walls/windows, furniture/fixtures, supplies/equipment, linen/uniforms, interior design, daily routine, subroutines, safety/security, laundry operations, training, current issues.

109-122 CUSTOMER/EMPLOYEE RELATIONS...service philosophy, identifying guest needs, service systems/processes, quality service standards, employee relations, developing service skills/attitudes, guest relations functions, food service styles, selling services, resolving guest complaints, accommodating special needs.

109-123 FOODS-BASIC PRINCIPLES...food composition, cooking methods, tools/equipment, nutrition, menu, recipe standardization, eggs/dairy, stocks/sauces, soups, meats, poultry/seafood, vegetables, starches, salads, fruits, eggs/dairy, baked goods, beverages, food preservation. (Prerequisite: 109-111).

109-124 FOOD/BEVERAGE COST CONTROL...organization, control function, specifications, standard portion control, menu costing, CVP analysis, purchasing, receiving, preparation, storage, requisitioning, production, service, inventory control, labor control, sales revenue controls, theft.

109-131 TOURISM INTERNSHIP...planning and preparation, career advancement plan, locating a hotel/motel internship provider, work habits, job performance, job evaluation, progress reporting, networking, final report, program evaluation. (Prerequisite: completion of 2nd semester).

109-132 LODGING INTERNSHIP...planning and preparation, career advancement plan, locating an internship provider, work habits, job performance, job evaluation, progress reporting, networking, final report, program evaluation. (Prerequisite: completion of 2nd semester).

109-133 FOOD SERVICE INTERNSHIP...planning and preparation, career advancement plan, locating an internship provider, work habits, job performance, job evaluation, progress reporting, networking, final report, program evaluation. (Prerequisite: completion of 2nd semester).

109-134 BEVERAGE OPERATIONS INTERNSHIP...planning and preparation, career advancement plan, locating an internship provider, work habits, job performance, job evaluation, progress reporting, networking, final report, program evaluation.

109-142 HOSPITALITY LAW/LIABILITY...common law, contracts, torts, duty to receive/protect guests, rights to privacy, refusing/evicting guests, liability for guest property, safekeeping facilities, personnel law, fire/safety, licensing, telecommunications, copyright, antitrust, franchising.

109-150 FACILITIES MANAGEMENT...role of facilities management, budgeting, water/wastewater systems, electrical systems, HVAC systems, laundry, telecommunications, safety/security systems, waste management, equipment maintenance, energy management, building/facilities, facility design, renovation.

109-151 SPECIAL EVENTS PLANNING...meetings/special events markets, planning and organizing, suppliers, contracting, budgeting, promotion/publicity, logistics and staging, room setup, equipment, serving events, meeting technology, liability and insurance, program evaluation. (Prerequisite: 104-110).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Individualized Technical Studies

ASSOCIATE DEGREE - FULL-TIME, PART-TIME

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-6823 or (800)422-NWTC, extension 823.

PROGRAM DESCRIPTION

The Individualized Technical Studies Degree is intended for currently employed individuals who have a specific career objective which cannot be met by existing degree programs. By combining state board approved courses from two or more major areas of study, the student, along with an occupational advisor, designs an occupational degree program into a unique Associate degree. The Individualized Studies Degree has two objectives:

• Provide flexibility in programming in order to meet the educational needs of individuals based on their particular career goals;
• Emphasize an individual’s career goals which cannot be achieved through enrollment in any single instructional program currently available at the college.

As part of the educational process, each student is required to complete a personal program portfolio outlining his or her career objectives and the courses required to meet those objectives. This student portfolio, together with a completed application for admission, becomes part of the review process used by the NWTC Individualized Technical Studies committee to admit the student for a customized technical studies program.

REQUIREMENTS FOR PROGRAM ENTRY

• Good reading, writing, and math skills
• Math and reading assessments
• Completion of all recommended activities to address math and reading skills deficiencies

READING LEVEL

Materials used within this program have a reading level of 12th grade or higher.

MATH LEVEL

Students should have mastered basic math before entering this program. For a description of basic math, see the Basic Education section of this catalog on page 20. Selection of specific courses within a program may have higher level math requirements and should be discussed with the program counselor.

EMPLOYMENT POTENTIAL

With the growth of employment opportunities in small and mid-sized firms, employers increasingly seek workers able to take on multiple tasks and roles that cut across traditional occupational categories. With the introduction of new kinds of technologies and work processes, occupational duties and the competencies needed in the workplace are constantly in flux.

To be productive and effective in today’s workplace, workers may need skills and knowledge drawn from a variety of traditional disciplines.

This program allows students to design a customized instructional program leading to an Associate of Applied Science Degree in Technical Studies. The individualized program will have a specific occupational focus designed by the student in consultation with an occupational mentor and district faculty and career advising staff.

The program requires identification of an occupational advisor who will assist the student in specifying skill competencies and occupational outcomes for a specific occupational area.

CURRICULUM

Total credits for the Individualized Technical Studies program will range from 64-72 credits depending upon the personal program portfolio selected. Admission to the program must be approved prior to completion of 32 credit hours.

Program requirements must include:

Course No. Description Credit

Individualized Technical Studies Core 40-48

A minimum of 40 credits of individualized technical studies is required and may be drawn from all divisions of the college. A minimum of 20 credits must be focused on one discipline. The selection of courses must be relevant to the student’s career goals and should provide sufficient hours of concentration in one or two specific technical areas to ensure technical competence in achieving the desired occupational goals. Prerequisites must be met.

Course No. Description Credit

Communications (Select at least two) 6

801-195 Communications - Written 3
801-196 Communications - Oral/Interpersonal 3
801-197 Technical Reporting (Prerequisite: Written Communication) 3

Social Science (Select at least one) 3

809-195 Economics 3
809-196 Introduction to Sociology 3
809-197 Contemporary American Society 3

Behavioral Science (Select one) 3

809-198 Introduction to Psychology 3
809-199 Psychology of Human Relations 3

The remaining three General Education credits shall be chosen from any of the remaining courses listed above.

Math/Science 3

ELECTIVES 6

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide the opportunity for the student to develop the knowledge, skills, and understanding of:

801-195 COMMUNICATION-WRITTEN ...the nature and scope of technical writing, document design, graphics, ethics of writing process, definition, description, memos, business letters, resume and cover letter, instructions, summaries, and short reports.

801-196 COMMUNICATION-INTERPERSONAL ...the communication process, perception and self-concept, language, listening, nonverbal communication, interpersonal relationships, communication in groups and public communication; prepare and deliver two speeches and one group presentation.

801-197 REPORTING-TECHNICAL ...principles of report writing and correspondence, proposals, feasibility reports, progress reports, investigation reports, evaluation reports, meeting reports, memos, and correspondence. (Prerequisite: 801-195).

801-198 SPEECH ...fundamentals of effective oral presentation to small and large groups: topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and the listening process.

809-195 ECONOMICS ...scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment, and global economic issues.

809-196 SOCIOLOGY-INTRODUCTION ...the nature and variety of groups; inequality, race, and ethnicity; family, population, social integration and change; collective behavior; politics, economics, religion and education, and the effects of technology.

809-197 SOCIETY-AMERICAN CONTEMPORARY ...the major social institutions within American society: government, family, education religion, and our economic system.

809-198 PSYCHOLOGY-INTRODUCTION ...involves survey of theoretical foundations of human behavior such as sensation and perception, motivation, emotions, learning, personality, psychological disorders, therapy, stress, and human diversity in personal, social, and vocational settings.

809-199 PSYCHOLOGY-HUMAN RELATIONS ...decision-making, motivation, conflict resolution, learning strategies, growth and adjustment, diversity, psychological theories, relationships, psychological disorders, stress, career analysis, social psychology, and lifespan development.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Industrial Mechanic  Program Code 314622

TECHNICAL DIPLOMA - ONE YEAR
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-6823 or (800)422-NWTC ext. 823.

PROGRAM DESCRIPTION
Industrial Mechanics prepares students to evaluate machine performance, identify trouble areas, and repair systems.

Graduates of this program will be able to:
• Interpret the elements of mechanics.
• Use of measuring devices.
• Use hand, stationary, and portable power tools.
• Prepare mounting bases for machine installation.
• Identify threaded fasteners and various locking and holding devices.
• Apply safety requirements to rigging an object.
• Install pipe. Identify pipe classification and demonstrate correct assembly and installation procedures.
• Classify valves used in a piping system.
• Describe the difference between machine, carbon, and alloy steels.
• Identify types of bearings.
• Apply lubricants.
• Demonstrate parallel shaft alignment.
• Use chain drive component terminology.
• Identify types of gears.
• Identify types of coupling
• Use electrical motors.

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent (Equivalency may established through GED testing or other tests.)
• High school background in mathematics, science, and industrial education

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL:
A graduate of the program will have the potential for employment as Industrial or Maintenance Mechanic, Machine Adjuster, Machine Assembler, Machinery Erector, and Machinery Repairer.

INDUSTRIAL OR MAINTENANCE MECHANIC: installs, repairs, and maintains the operating condition of industrial production and processing machinery.

MACHINE ADJUSTER: adjusts and maintains machinery for optimum manufacturing production.

MACHINE ASSEMBLER: assembles machines, equipment, and their subassemblies following blueprints and assembly procedures.

MACHINERY ERECTOR: erects and tests machinery and heavy equipment, replaces defective parts of a machine, adjusts clearances and alignment of moving parts, and dismantles machinery and equipment for shipment to the installation site.

MACHINERY REPAIRER: inspects, maintains, repairs, and adjusts machinery and equipment in order to insure its proper operation in the various industries.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Lead Mechanic
• Maintenance Supervisor
• Master Mechanic
• Millwright

CURRICULUM
The Industrial Mechanic Technical Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 34 credits.

FIRST SEMESTER
Course No. Description Credits
420-314 Machine Shop-Basic 4
421-355 Blueprint Rdg/Sket-Indus 2
462-305 Mechanic 1-Industrial 10
804-315 Math-Basic 1
804-324 Math 1-Industrial 1
SEMESTER TOTAL 18

SECOND SEMESTER
442-365 Welding-Industrial 3
462-325 Mechanic 2-Industrial 10
462-356 Hydraulics-Industrial 2
801-385 Communicating-Writing 1
SEMESTER TOTAL 16

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

420-314 MACHINE SHOP-BASIC
.. lathe/drilling/milling machines, shapers, grinding machines, tool sharpening, bench work layout, measuring, inspection techniques, and machine part repair/fabrication.

421-355 BLUEPRINT READING/SKETCHING-INDUSTRIAL MECHANIC ..tolerancing, section/auxiliary views, weld symbols, piping/hydraulic prints, and electric motor prints.

442-365 WELDING-INDUSTRIAL ..oxyacetylene process, oxyacetylene welding, brazing, cutting, metal arc welding, gas metal arc welding, and gas tungsten arc welding (ferrous and non-ferrous metals).

462-305 MECHANIC 1-INDUSTRIAL ..basic elements of mechanics: forces, friction, work/energy, lubrication, tools use; area/volume measurements, precision measurement; threaded fastener identification; structural steel installation and rigging; and piping and tubing identification/installation.

462-325 MECHANIC 2-INDUSTRIAL ..basic metallurgy, machine/mechanical device maintenance, machine drive component, installation/alignment/timing/synchronization, defective machine part ordering/replacement, machine rigging, drive components, bearings, belts, chain drives, and gears. (Prerequisite: 462-305).

462-356 HYDRAULICS-INDUSTRIAL ..hydraulic/pneumatic system maintenance, hydraulic pump repair, motors, controls, actuators, and pneumatic components.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Industrial Model Building  Program Code 106142

ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay Campus at (920)498-6823 or (800)422-NWTC ext. 823.

PROGRAM DESCRIPTION

Industrial Model Building prepares students to be model builders in a variety of fields such as architectural, topographic, mechanical, research and development, process piping, prototype, legal, and special effects.

Graduates of this program will be able to:
• Operate stationary woodworking tools.
• Operate machine tools.
• Operate all of the hand and portable power tools in a model shop.
• Use appropriate safety measures.
• Plan the stages to translate 2D information into a 3D model and estimate time and cost of the model.
• Choose appropriate techniques to complete a three dimensional model.
• Construct a variety of models.
• Select proper materials.
• Select the proper adhesives.
• Implement a variety of tips & techniques.
• Use technical vocabulary.
• Use critical thinking & problem solving techniques.
• Set up for special machining operations.
• Build patterns for molds and vacuum forming.
• Construct rigid molds, flexible molds and cast short run parts.
• Solve math problems during the construction of a model.
• Use rapid prototyping processes.
• Create and read blueprints using manual drafting + computer aided drafting.
• Use computer system hardware and terminology.
• Apply a variety of industrial finishes on various materials.
• Mix custom colors.
• Work in a team or independently.
• Perform basic machinery maintenance.
• Prepare a portfolio.

REQUIREMENTS FOR PROGRAM ENTRY

• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
• High school background in mathematics and science
• High school algebra or equivalent

READING LEVEL

Materials used within this program have an average reading level of 13th grade.

MATH LEVEL

Students should have mastered algebra skills before entering this program. For a description of algebra skills, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL

A graduate of the program will have the potential for employment as a Model Builder in the following areas: Architectural, Prototype, Engineering Design, Legal, Props and Special Effects, and Pattern and Mold Making.

ARCHITECTURAL MODEL BUILDER: translates all architectural drawings, sketches, and renderings; uses plot plans; elevations, sections, details, and topographical drawings to construct models using a wide variety of materials, processes, and tools.

PROTOTYPE MODEL BUILDER: provides research and development on new products, works with molding, and makes models for all types of industry such as toy and automobile manufacturers so that the model will look like the finished product before production begins.

ENGINEERING DESIGN: translates engineering data and vendor information into scale models or CAD models for use with Rapid Prototyping Processes; usually employed in design and development of new products or systems.

LEGAL MODEL BUILDER: creates models that help win court cases by allowing a judge and jury to see a three-dimensional representation of the scene of an accident, injury, or crime.

PROPS AND SPECIAL EFFECTS MODEL BUILDER: makes models for the movie, television, and stage play industries.

PATTERN AND MOLD MAKER: fabricates wood, plastic, or metal patterns for molding processes.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Architectural Design Model Builder
• Mechanical Prototype Designer
• Piping Design Model Builder
• Computer Numerical Control Machinery Operator (Programmer)
• Rapid Prototyping Operator
• Free-Lance Model Builder
• Model Shop Supervisor

CURRICULUM

The Industrial Model Building Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>420-151</td>
<td>Model Const-Metal 1</td>
<td>3</td>
</tr>
<tr>
<td>606-112</td>
<td>Engineering Applications</td>
<td>1</td>
</tr>
<tr>
<td>606-113</td>
<td>CAD</td>
<td>2</td>
</tr>
<tr>
<td>606-119</td>
<td>Sketching-Technical</td>
<td>2</td>
</tr>
<tr>
<td>614-114</td>
<td>Model Building-Intro</td>
<td>4</td>
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<tr>
<td>801-196</td>
<td>Communication-Interpers</td>
<td>3</td>
</tr>
<tr>
<td>804-130</td>
<td>Algebra/Trigonometry</td>
<td>3</td>
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<td>SEMESTER TOTAL</td>
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SECOND SEMESTER

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<th>Course No.</th>
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<tbody>
<tr>
<td>420-161</td>
<td>Model Const-Metal 2</td>
<td>3</td>
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<tr>
<td>614-122</td>
<td>Model Layout/Design</td>
<td>3</td>
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<tr>
<td>614-124</td>
<td>Design Visualization</td>
<td>5</td>
</tr>
<tr>
<td>804-131</td>
<td>Algebra-Inter</td>
<td>3</td>
</tr>
<tr>
<td>809-197</td>
<td>Society-Amer Contemp</td>
<td>3</td>
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<td>SEMESTER TOTAL</td>
<td>17</td>
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THIRD SEMESTER

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<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>614-132</td>
<td>CAD-Process Piping</td>
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<tr>
<td>614-134</td>
<td>Engineering Models</td>
<td>5</td>
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<tr>
<td>801-195</td>
<td>Communication-Written</td>
<td>3</td>
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<tr>
<td>806-150</td>
<td>Science 1-Tech</td>
<td>3</td>
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<td>SEMESTER TOTAL</td>
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</table>

FOURTH SEMESTER

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<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>614-144</td>
<td>Model Problems</td>
<td>4</td>
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<tr>
<td></td>
<td>OR</td>
<td></td>
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<tr>
<td>614 145</td>
<td>Model Building Internship</td>
<td>4</td>
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<tr>
<td>801-197</td>
<td>Reporting-Technical</td>
<td>3</td>
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<tr>
<td>806-160</td>
<td>Science 2-Tech</td>
<td>3</td>
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<tr>
<td>809-199</td>
<td>Psychology-Human Relations</td>
<td>3</td>
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<td></td>
<td>ELECTIVE</td>
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<td>SEMESTER TOTAL</td>
<td>16</td>
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</tbody>
</table>


This program is fully eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

420-151 MODEL CONSTRUCTION-METAL 1
...non-precision and precision measuring tools, angular measurement, power saws, engine lathes, drill presses, and foundry application.

420-161 MODEL CONSTRUCTION-METAL 2
...milling machines, CNC milling, grinders, metal working tools, foundry, machining castings, precision and non-precision measuring tools, working with a variety of metals and plastics. (Prerequisite: 420-151).

606-112 ENGINEERING APPLICATIONS ...basics of a computer system, computer terminology, DOS, Windows NT, Microsoft Word, Microsoft Excel, and AutoCAD Release 13.

606-113 CAD (COMPUTER AIDED DRAFTING) ...AutoCAD terminology, drawing preliminaries, basic inquiry and setting commands, layer setting and manipulation, basic drawing and display commands, basic edit commands, plotting, blocks, and attributes. (Prerequisite: 606-112, 606-119).

606-119 SKETCHING-TECHNICAL ...design and communication, basic freehand sketching, lettering techniques, geometric constructions, modeling basics, orthographic and pictorial sketching, section and auxiliary views, and dimensioning basics.

614-114 MODEL BUILDING-INTRODUCTION ...introduction to model building and basic techniques using a variety of tools, materials, and processes, emphasis on accuracy and working within specified tolerances; CNC milling introduction using EZ Cam software.

614-122 MODEL LAYOUT/DESIGN ...creating computer aided drawings using AutoCAD software with a focus on architectural, mechanical, and 3-dimensional drawings. 2-D and 3-D milling will be covered using Bridgeport’s EZ-Mill software. (Prerequisite: 606-113, 614-114).

614-124 DESIGN VISUALIZATION ...planning stages of architectural models, fabrication methods, material selection, simulated building materials, painting/finishing techniques, landscaping, special effects, model photography and CNC milling using Bridgeport’s EZ-Cam software. (Prerequisite: 614-114).

614-132 CAD-PROCESS PIPING ...equipment and terms, process plant, pipe and valves, piping drawing, pipe and fitting, valves, and isometric drawing; spools, dimensions, flow diagrams; and plot plans and vessel drawing. (Prerequisite: 606-113).

614-134 ENGINEERING MODELS ...engineering/design modeling, power and hand tools, materials and techniques; job responsibilities and relations with other disciplines; construct engineering/design models; basic mold making; and Rapid Prototyping model processes.

614-144 MODEL PROBLEMS ...safe use of hand and power tools; plastics; materials and techniques; patterns, mold making, and flexible molds; limited run parts; training models; product/prototype model; rapid prototyping.

614-145 MODEL BUILDING INTERNSHIP ...cooperative agreement with a professional model making facility in which the student is paid to work for the company while learning on the job to be a professional model maker.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Jewelry Repair and Fabrication

TECHNICAL DIPLOMA - NINE MONTHS

Offered at the Green Bay campus. For more information, call the Green Bay Campus at (920)498-5498 or (800)422-NWTC ext. 498.

PROGRAM DESCRIPTION
Jewelry Repair and Fabrication Program prepares students to design, create, and repair jewelry by applying a variety of manufacturing and fabrication processes and techniques.

Graduates of this program will be able to:
• Find employment in the jewelry field.
• Perform basic bench jeweler tasks/functions.
• Explain repair work to customer.
• Set stones
• Produce jewelry items using basic jewelry manufacturing skills.
• Identify characteristics of precious metals and gem stones.
• Produce finished jewelry pieces.
• Express ideas through jewelry illustrations.
• Perform jewelry sales associate skills.
• Adapt computer skills acquired as a student to the jewelry industry standards.

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
• Tools Required: Available in NWTC Bookstore

READING LEVEL:
Materials used within this program have an average reading level of 10th grade.

MATH LEVEL:
Students should have mastered basic math skills and have an awareness of algebraic formulas. For a description of algebra skills, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have potential for employment as Stone Setter, Bench Jeweler, Goldsmith, Silversmith, Jewelry Designer, and Jewelry Sales Representative. Graduates in these occupations repair and/or fabricate jewelry according to customer and/or owner specifications.

STONE SETTER: specializes in the setting of stones in mountings, and demonstrates a high skill level, achieved with practice.
BENCH JEWELER: repairs jewelry, with fabrication, stone setting, and manufacturing skills.
GOLDSMITH: works with gold in the repair and manufacture of jewelry.
SILVERSMITH: works with silver in the repair and manufacture of jewelry, utilitarian, and decorative items.
JEWELRY DESIGNER: provides artistic drawings of jewelry designs that meet customer and/or owner approval.
JEWELRY SALES REPRESENTATIVE: sells retail or wholesale jewelry, tools, and/or equipment.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Appraiser
• Graduate Gemologist
• Certified Gemologist
• Metallurgist
• Hand Engraver
• Jewelry Department Manager
• Jewelry Store Owner
• Trade Shop Owner
• Jewelry Equipment Representative

CURRICULUM
The Jewelry Repair and Fabrication Technical Diploma is a nine month, two-semester program. Upon graduation, a student will have completed 33 credits.

FIRST SEMESTER
Course No. Description Credits
111-310 Jewelry Design/Illustrate 2
441-310 Jewelry Repair/Manuf 1 9
441-315 Gemology/Precious Metals 4
801-386 Communicating-Interpers 1
804-381 Computer: Micro Software 1
SEMESTER TOTAL 17

SECOND SEMESTER
104-313 Retail Merchandising 3
441-320 Jewelry Repair/Manuf 2 9
441-327 Gemology/Power Engraving 3
801-385 Communicating-Writing 1
SEMESTER TOTAL 16

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

104-313 RETAIL MERCHANDISING
...characteristics of a small business, planning and organizing a new jewelry business, marketing and selling the jeweler's product or service, profit planning and control, and jewelry merchandising.

111-310 JEWELRY DESIGN/ILLUSTRATION
...basic drawing skills, use of templates, shading, drawing stones, basic jewelry design, designing an original piece of jewelry from concept through presentation and promotional illustration.

441-310 JEWELRY REPAIR/MANUFACTURING 1
...common metals, hand tools, equipment; casting, fabricating, basic jewelry repair, basic stone setting, fabrication of rings, and production of finished jewelry pieces in brass alloy, silver, and/or gold.

441-315 GEMOLOGY/PRECIOUS METALS
...gemological equipment classification, stone physical/optical property determination, stone setting procedures, precious metal content, soldering determination, gold alloys, and gold refinement.

441-320 JEWELRY REPAIR/MANUFACTURING 2
...a variety of manufacturing techniques, different jewelry repair, advanced stone setting techniques on brass alloy, silver, and/or gold objects. (Prerequisite: 441-310).

441-327 GEMOLOGY/POWER ENGRAVING
...scroll design layout, power hand engraver cutting, power graver stone setting, physical/optical property gem stone identification, and gem stone setting procedures. (Prerequisite: completion of 1st semester).

804-381 COMPUTER: MICRO SOFTWARE APPLICATIONS
...microcomputer use in a small business environment: computer hardware and terminology, electronic worksheet, file handling package, and word processing package.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Logistics

Program Code 101822

ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5440 or (800)422-NWTC ext. 440.

PROGRAM DESCRIPTION

Logistics trains students in all the activities involved in the flow of goods from the point of origin to the point of consumption. It includes transportation, inventory control, materials management, purchasing, packaging, and customer service.

Graduates of this program will be able to:
• Compare major transportation modes.
• Respond appropriately to requests for transportation services.
• Perform inventory control.
• Demonstrate familiarity with global trade processes.
• Develop a global business perspective.
• Plan a product using a manufacturing resource planning process.
• Perform supplier selections and evaluation.
• Demonstrate negotiation skills.
• Track commodity market trends.
• Perform logistical mathematical calculations.
• Apply legal and ethical standards pertaining to logistics.
• Monitor service, quality and cost performance.
• Demonstrate knowledge of the application of supply chain concepts.

REQUIREMENTS FOR PROGRAM ENTRY

• Basic math
• Ability to use computer keyboard

READING LEVEL

Materials used within this program have an average reading level of 14th grade.

MATH LEVEL

Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL

A graduate in the program will have the potential for employment as Logistics Technician, Transportation/Purchasing Buyer, Production Scheduler, Transportation Dispatcher, Customer Service Representative, Shipper and Receiver, Warehouse Specialist, Freight Claims Analyst, and Cost Rate Analyst.

LOGISTICS TECHNICIAN: coordinates activities in the logistics operation of an organization.

TRANSPORTATION/PURCHASING BUYER: performs purchasing activities including vendor qualification, negotiation, contracting, selection, certification, and evaluation.

PRODUCTION SCHEDULER: creates production schedules and work orders, establishes priorities for customer demand and capacity of workers, parts, machinery, and equipment.

TRANSPORTATION DISPATCHER: assigns freight to routes, assigns vehicles and routes to drivers, and handles expedited shipments.

CUSTOMER SERVICE REPRESENTATIVE: communicates with customers in order to match customer needs with vehicle and driver availability, deals with customer inquiries, expedites freight, and tracks orders.

SHIPPER AND RECEIVER: coordinates the flow of raw materials and finished goods to meet production and customer requirements and works with transportation carriers to assure timely and accurate pickup and delivery.

WAREHOUSE SPECIALIST: manages the flow of inventory into and out of a storage facility or distribution center and works with owners of the inventory to meet inventory level and customer service needs.

FREIGHT CLAIMS ANALYST: performs duties in the risk management process including claims, short, and damage incidents and claims.

COST RATE ANALYST: compiles and computes production and vendor costs, and other charges of goods and services.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Logistics Manager
• Terminal Manager
• Transportation Manager
• Materials Manager
• Purchasing Manager
• Production Manager

CURRICULUM

The Logistics Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 66 credits.

FIRST SEMESTER

Course No. Description Credits
103-103 Micro Basics MS Office 1 3
105-101 Business Math 3
182-110 Resource Planning/Control 3
182-150 Global Business 3
182-157 Logistics Management 3
SEMESTER TOTAL 15

SECOND SEMESTER

104-141 Accounting-Financial 3
104-191 Customer Service Mgmt 3
182-109 Transportation-Intro 3
182-120 Manufacture-Resource Plan 3
182-127 Purchasing 3
801-195 Communication-Written 3
SEMESTER TOTAL 18

THIRD SEMESTER

104-147 Marketing-Industrial 3
182-116 Transportation Admin 3
182-186 Export-Import 3
801-196 Communication-Interpers 3
809-199 Psychology-Human Relations 3
ELECTIVE 3
SEMESTER TOTAL 18

FOURTH SEMESTER

182-141 Logistics Internship 3
OR
182-140 Logistics Field Study 3
182-166 Motor Carrier-Commercial 3
809-195 Economics 3
809-197 Society-Amer Contemp 3
ELECTIVE 3
SEMESTER TOTAL 15

SUGGESTED ELECTIVES: for this program:
Negotiations (182-131), Warehousing (182-132), Systems Technologies (182-190), Just In Time (182-182), Materials and Capacity Requirements Planning (182-183), Inventory Management (182-184), Production Activity Control (182-185), Master Planning (182-187), Advanced Purchasing (182-188), and Purchasing Trends (182-189).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

104-191 CUSTOMER SERVICE MANAGEMENT
...develop professional telephone etiquette, explore customer service work environments, identify and analyze customer service failures, resolve problems cost effectively, set complaint policies and communication techniques to handle complaining customers.

182-109 TRANSPORTATION-INTRODUCTION
...framework, role, and historical development of transportation; characteristics of railroad, truck, and air transportation; and the pipeline industry.

182-110 RESOURCE PLANNING/CONTROL
...fundamentals of materials and supply chain management; basis for further APICS (American Production and Inventory Control Society) certification.

182-116 TRANSPORTATION ADMINISTRATION
...fundamentals of the administrative aspects of transportation operation; hands-on exercises in freight classification, tariffs, carrier pricing schedules, rates, bills of lading, contracts, and freight claims. (Prerequisite: 182-109).

182-120 MANUFACTURE-RESOURCE PLANNING
...philosophy and techniques used in material requirements planning and Manufacturing Resource Planning II, including hands-on use of personal computer software to enhance understanding.

182-127 PURCHASING
...role of purchasing in business, industry, and the community; legal and ethical aspects of purchasing including systems, staffing, price/cost analysis, forecasting, and dealing with vendors.

182-140 LOGISTICS FIELD STUDY
...an alternative to the internship: in-depth study of an industry, business, career, or project. (Prerequisite: last semester in program).

182-141 LOGISTICS INTERNSHIP
...training and experience through actual work experience and observation. (Prerequisite: last semester in program).

182-150 GLOBAL BUSINESS
...exploration of entire breadth of international business including basic concepts, economic and financial environments, various institutions and markets, and trade policy issues.

182-157 LOGISTICS MANAGEMENT
...basic concepts, management levels, elements of inventory control, transportation, warehousing, packaging, material handling and purchasing, and the role order processing plays in the distribution cycle.

182-166 MOTOR CARRIER-COMMERCIAL
...fundamental understanding of motor carrier transportation: equipment, DOT requirements for driver and hours of service, cargo documentation, dispatching, legal limits, fuel tax, licensing, contracting, and hazardous material. (Prerequisite: 182-109).

182-186 EXPORT/IMPORT
...overview of international trade: entering the overseas market, distribution, payment, letters of credit, shipping documents, importing, customs house brokers, government requirements, and sources of assistance and information.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Machine Tool Operation  Program Code 314201

TECHNICAL DIPLOMA - ONE YEAR
Offered at the Green Bay campus. For more information, the Green Bay campus at (920)498-6823 or (800)422-NWTC ext. 823.

PROGRAM DESCRIPTION
Machine Tool Operations prepares students to operate machine tools: engine lathes, milling machines, drill presses, and numerical control machines.

Graduates of this program will be able to:
• Be successfully employed in the trade.
• Safely setup and operate drill presses.
• Safely setup and operate engine lathes.
• Safely setup and operate horizontal and vertical milling machines.
• Safely setup and operate grinding machines.
• Safely setup, operate, and program Computer Numerical Control milling machines.
• Safely setup, operate, and program Computer Numerical Control turning machines.
• Use semi-precision and precision measuring tools to create parts that meet dimensional specifications shown on part prints.
• Accurately read and interpret blueprints.
• Make mathematical calculations as they relate to trade functions.
• Use a Computer Aided Manufacturing (CAM) program to create part profiles and machine code.

REQUIREMENT FOR PROGRAM ENTRY
• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on Page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Computer Numerical Controlled (CNC) Operator, Machine Set-Up Operator, Machine Tool Operator, Machinist, or Maintenance Machinist.

CNC OPERATOR: sets up and operates computer numerical controlled machine tools working from blueprints and set-up sheets, sets up fixtures and tooling, produces and inspects parts, and edits CNC programs on lathes and machine centers.

MACHINE SET-UP OPERATOR: sets up and operates a variety of machine tools such as radial drill presses, lathes, milling machines, and grinders; machines metal work pieces, tool, or die parts; analyzes specifications; and determines tooling.

MACHINE TOOL OPERATOR: shapes metal to precise dimensions by using machine tools and operates machines such as lathes, milling machines, drill presses, and computer numerical-controlled (CNC) machine equipment.

MASSCHINIST: analyzes specifications, lays out metal stock; sets up and operates machine tools, and operates a variety of machine tools such as radial drill presses, lathes, milling machines, and grinders, to machine a variety of metal work pieces.

MAINTENANCE MACHINIST: sets up and operates a variety of machine tools and fits and assembles parts to fabricate or repair machine tools and to maintain industrial machines.

With additional education and/or work experience, graduates may find other opportunities for employment.
• All-Around Machinist
• Journey level Machinist
• Pattern Maker
• Set-Up Machinist
• Shop Supervisor

CURRICULUM
The Machine Tool Operation Technical Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 34 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No. Description</th>
<th>Credits</th>
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<tr>
<td>420-310 CNC Theory 1</td>
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<tr>
<td>420-311 CNC Practice 1</td>
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<tr>
<td>420-318 Machine Shop Practice 1</td>
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<tr>
<td>420-319 Machine Shop Practice 2</td>
<td>3</td>
</tr>
<tr>
<td>421-352 Blueprint Rdg/Skt-Mach 1</td>
<td>2</td>
</tr>
<tr>
<td>806-360 Metallurgy-Applied</td>
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</tr>
<tr>
<td>804-315 Math-Basic</td>
<td>1</td>
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<tr>
<td>804-324 Math 1-Industrial</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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SECOND SEMESTER

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<tr>
<th>Course No. Description</th>
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<tr>
<td>420-320 CNC Theory 2</td>
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<tr>
<td>420-321 CNC Practice 2</td>
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<td>420-327 Machine Shop Theory 4</td>
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<tr>
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<td>420-329 Machine Shop Practice 4</td>
<td>3</td>
</tr>
<tr>
<td>421-362 Blueprint Rdg/Skt-Mach 2</td>
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</tr>
<tr>
<td>801-386 Communicating-Interpers</td>
<td>1</td>
</tr>
<tr>
<td>804-334 Math 2-Industrial</td>
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</tr>
<tr>
<td>442-350 Welding-Machine Trades</td>
<td>2</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
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</tr>
</tbody>
</table>

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

420-310 CNC THEORY 1 ...lecture in basic computer controlled milling machines, basic programming operations on computer aided manufacturing (CAM) systems, and fundamental programming of computer numerically controlled (CNC) milling machines.

420-311 CNC PRACTICE 1 ...basic lab/practice in computer controlled milling machines, basic programming operations on computer aided manufacturing (CAM) systems, and fundamental programming of computer numerically controlled (CNC) milling machines.

420-316 MACHINE SHOP THEORY 1 ...lecture in basic shop safety, measuring tools and layout, power saw operation.

420-317 MACHINE SHOP THEORY 2 ...lecture in intermediate drilling machine, bench work, and engine lathe operation.

420-318 MACHINE SHOP PRACTICE 1 ...basic shop safety, measuring tools and layout, power saw operation, drilling machine, bench work, engine lathe operation, vertical, horizontal, and CNC milling machine and surface grinder.

420-319 MACHINE SHOP PRACTICE 2 ...intermediate shop safety, measuring tools and layout, power saw operation, drilling machine, bench work, engine lathe operation, vertical, horizontal, CNC milling machines and surface grinder.

420-320 CNC THEORY 2 ...advanced lecture on basic operation and set up of CNC turning machines and Vertical Machining Center (VMC), programming operations performed on Computer Aided Manufacturing (CAM) systems, programming of CNC turning machines with conversational controllers.

420-321 CNC PRACTICE 2 ...advanced lab/practice in basic operation and set up of CNC turning machines and Vertical Machining Center (VMC), programming operations performed on Computer Aided Manufacturing (CAM) systems, programming of CNC turning machines with conversational controllers.

420-326 MACHINE SHOP THEORY 3 ...lecture in advanced vertical, horizontal, and CNC milling machines.

420-327 MACHINE SHOP THEORY 4 ...lecture in advanced CNC lathes; surface and cylindrical grinders.

420-328 MACHINE SHOP PRACTICE 3 ...advanced lab/practice in vertical, horizontal, and CNC milling machines; CNC lathes; surface and cylindrical grinders; and machine maintenance.

420-329 MACHINE SHOP PRACTICE 4 ...advanced lab/practice in vertical, horizontal, and CNC milling machines; CNC lathes; surface and cylindrical grinders; and machine maintenance.

421-352 BLUEPRINT READING/SKETCHING-MACHINE 1 ...fundamentals of sketching, orthographic projection, auxiliary views, sectional views, dimensioning, precision and non-precision measurement, and general print reading.

421-362 BLUEPRINT READING/SKETCHING-MACHINE TRADES 2 ...blueprint reading, tolerancing, and surface finishes, fits (inch & metric), basic welding symbols, casting, stamping, gearing and cam drawings, and basic geometric tolerancing and dimensioning. (Prerequisite: 421-352).

442-350 WELDING-MACHINE TRADES ...oxyacetylene welding; brazing; soldering; cutting; hardsurfacing; out-of-position welding; arc welding; machines/accessories, running beads; and types of
PROGRAM DESCRIPTION

Machine Tooling Technics prepares students to perform advanced machining applications for: molds, dies, jigs, fixtures, tooling, CNC programming, and electrical discharge machining. This program provides a second year of advanced training for graduates of the Machine Tool Operation program.

Graduates of this program will be able to:
• Set-up and operate milling machines.
• Know and apply Statistical Process Control (SPC).
• Set-up and operate electrical discharge machines.
• Design and construct jigs, fixtures, dies and molds.
• Set-up and operate grinding machines.
• Set-up and operate sawing machines.
• Complete basic welding processes.
• Use precision measuring practices.
• Program and operate computerized numerical control milling machines.
• Program and operate computerized numerical control lathes.
• Identify fluid power components.
• Know and apply ISO 9000 quality practices.
• Know and apply mathematics.
• Set-up and operate engine lathes.
• Interpret working drawings.
• Work from blueprints and sketches.
• Know and apply basic metallurgy.
• Know and apply shop safety practices.
• Understand and apply cutting tool speeds and feeds.
• Perform basic CAM operations.

REQUIREMENT FOR PROGRAM ENTRY

• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)

READING LEVEL

Materials used within this program have an average reading level of 12th grade.

MATH LEVEL

Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL

A graduate of the program will have the potential for employment as Computer Numerical Controlled (CNC) Operator, Jig and Fixture Apprentice or Trainee, Machine Set-Up Operator, Machinist Apprentice or Trainee, Maintenance Machinist, Mold Maker Apprentice or Trainee, Tool and Cutter Grinder, Tool and Die Apprentice or Trainee, Electrical Discharge Machining (EDM) Operator.

CNC OPERATOR: sets up and operates computer numerical controlled machine tools working from blueprints and set-up sheets, sets up fixtures and tooling, produces and inspects parts, and edits CNC programs on CNC lathes and machining centers.

ELECTRICAL DISCHARGE MACHINING (EDM) OPERATOR: uses units and Wire Electrical Discharge Machines to produce molds, dies and mating parts from a variety of materials.

JIG AND FIXTURE APPRENTICE/TRAINEE: lays out, fits, and assembles parts to make and repair cutting tools, jigs, fixtures, gauges, or machine's hand tools by analyzing specifications.

MACHINE SET-UP OPERATOR: sets up and operates a variety of machine tools such as radial drill presses, lathes, milling machines, and grinders; machines metal work pieces such as patterns and machine tool or die parts; analyzes specifications; and determines tooling.

MACHINIST APPRENTICE/TRAINEE: sets up and operates machine tools, fits and assembles parts to make or repair metal parts, mechanisms, tools, or machine.

MAINTENANCE MACHINIST: sets up and operates a variety of machine tools, fits and assembles parts to fabricate or repair machine tools and to maintain industrial machines.

MOLD MAKER APPRENTICE/TRAINEE: lays out, machines, fits, assembles, and finishes metal products and metal molds for injection or compression molding of plastic or rubber products.

TOOL AND CUTTER GRINDER: sets up and operates cutter grinding machines used for sharpening tools and cutters that are needed in the manufacturing industry and inspects sharpened tooling.

TOOL AND DIE APPRENTICE OR TRAINEE: lays out, machines, fits and assembles tooling used to produce dies, jigs and fixtures; also produces dies, jigs and fixtures to specifications using hand and machine tools.

With additional education and/or work experience, graduates may find other opportunities for employment:
• All-Around Machinist
• Journey Level Machinist
• Pattern Maker
• Mold Maker
• Tool and Die Maker
• CNC Programmer
• Machine Shop Foreman/Supervisor

CURRICULUM

The Machine Tooling Technics program is a two-year, four-semester program. Upon graduation, a student will have completed 66 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
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<td>Blueprint Rdg/Skt-Mach 1</td>
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<td>Welding-Machine Trades</td>
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SECOND SEMESTER

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<td>806-360</td>
<td>Metallurgy-Applied</td>
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THIRD SEMESTER

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<tbody>
<tr>
<td>420-332</td>
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<tr>
<td>420-333</td>
<td>Die Construction-Mold</td>
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<td>420-334</td>
<td>Tool Making</td>
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<td>804-374</td>
<td>Math 3-Industrial</td>
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FOURTH SEMESTER

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<td>CNC Fundamentals 4</td>
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<tr>
<td>420-343</td>
<td>Die Construction-Stamping</td>
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<td>420-344</td>
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<td>420-345</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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</table>

Students enrolled in this program should contact the NWTC Veteran's Office at (920)498-5445 if Veteran's information is needed.

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

420-310 CNC THEORY 1 ...lecture in basic computer controlled milling machines, basic programming operations on computer aided manufacturing (CAM) systems, and fundamental programming of computer numerically controlled (CNC) milling machines.

420-311 CNC PRACTICE 1 ...basic lab/practice in computer controlled milling machines, basic programming operations on computer aided manufacturing (CAM) systems, and fundamental programming of computer numerically controlled (CNC) milling machines.

420-316 MACHINE SHOP THEORY 1 ...basic shop safety, measuring tools and layout, power saw operation.

420-317 MACHINE SHOP THEORY 2 ...intermediate drilling machine, bench work, and engine lathe operation.

420-318 MACHINE SHOP PRACTICE 1 ...basic lab/practice in shop safety, measuring tools and layout, power saw operation, drilling machine, bench work, engine lathe operation, vertical, horizontal, and CNC milling machine and surface grinder.

420-319 MACHINE SHOP PRACTICE 2 ...intermediate lab/practice in shop safety, measuring tools and layout, power saw operation, drilling machine, bench work, engine lathe operation, vertical, horizontal, CNC milling machines and surface grinder.

420-320 CNC THEORY 2 ...lecture in intermediate operation and set up of CNC turning machines and Vertical Machining Center (VMC), programming operations performed on Computer Aided Manufacturing (CAM) systems, programming of CNC turning machines with conversational controllers.

420-321 CNC PRACTICE 2 ...intermediate lab/practice in operation and set up of CNC turning machines and Vertical Machining Center (VMC), programming operations performed on Computer Aided Manufacturing (CAM) systems, programming of CNC turning machines with conversational controllers.

420-322 MACHINE SHOP THEORY 3 ...lecture in advanced vertical, horizontal, and CNC milling machines.

420-327 MACHINE SHOP THEORY 4 ...lecture in advanced CNC lathes; surface and cylindrical grinders.

420-328 MACHINE SHOP PRACTICE 3 ...advanced lab/practice in vertical, horizontal, and CNC milling machines; CNC lathes; surface and cylindrical grinders; and machine maintenance.

420-329 MACHINE SHOP PRACTICE 4 ...advanced lab/practice in vertical, horizontal, and CNC milling machines; CNC lathes; surface and cylindrical grinders; and machine maintenance.

420-332 CNC FUNDAMENTALS 3 ...3 dimensional CNC production planning, advanced 2-D mill programming, 3-D surface programming for CNC milling, conversational and G-Code programming for milling machines, and computer assisted CNC programming for milling operations.

420-333 DIE CONSTRUCTION-MOLD ...interpreting mold die prints, designing a mold die, performing various precision machining operations required to construct mold die components, assembling those components into a finished mold die until that will produce finished product.

420-334 TOOL MAKING ...interpreting tool and fixture prints, designing a tool or fixture, performing various machining, heat treating and assembly operations necessary to produce a tool or fixture to be used in a typical manufacturing process.

420-342 CNC FUNDAMENTALS 4 ...advanced 3 dimensional CNC process modeling, 4th axis indexing, advanced CNC lathe programming, 4th axis CNC wire EDM programming, and CNC fabrication punch/burner programming applications.

420-343 DIE CONSTRUCTION-STAMPING ...interpreting stamping die prints, designing a stamping die, performing precision machining operations including heat treating, jig grinding, and CNC wire electrical discharge machining (EDM) to produce stamping die components, and assembling those components into a functional die.

420-344 MACHINING APPLICATIONS-ADVANCED ...electrical discharge machining (EDM) theory, high speed machining concepts utilizing superabrasive tooling (PCD & CBN), and rapid setup and quick die change applications. Students will specify, design, and complete an advanced project utilizing concepts from this and previous courses. Examples could be advanced mold, CNC programming, tooling system, robotic application, 4th axis EDM.

420-345 METROLOGY ...ISO 9000 concepts, Statistical Process and Control (SPC) theory and applications, coordinate measuring machine setup and applications, surface texture measurement concepts, and applications for geometric dimensioning and tolerancing (GD&T).

421-352 BLUEPRINT READING/SKETCHING-MACHINE 1 ...fundamentals of sketching, orthographic projection, auxiliary views, sectional views, dimensioning, precision and non-precision measurement, and general print reading.

421-362 BLUEPRINT READING/SKETCHING-MACHINE TRADES 2 ...blueprint reading, tolerancing, and surface finishes, fits (inch & metric), basic welding symbols, casting, stamping, gearing and cam drawings, and basic geometric tolerancing and dimensioning. (Prerequisite: 421-352).

442-350 WELDING-MACHINE TRADES ...oxyacetylene welding; brazing; soldering; cutting; hard surfacing; out-of-position welding; arc welding; machines/accessories, running heads; and types of joints, welding thin gauge, arc cutting, and heating.
MARKETING

ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5440 or (800)422-NWTC ext. 440.

PROGRAM DESCRIPTION
Marketing prepares students to perform basic marketing functions in industrial, wholesale, retail, and service areas. Specific areas of study are sales, promotion principles, market research, and customer service.

Graduates of this program will be able to:
• Recommend a pricing plan.
• Evaluate alternative distribution strategies.
• Develop a product and service mix.
• Generate marketing information for effective decision making.
• Apply continuous improvement strategies to solve marketing problems.
• Assess emerging global trade activities that impact on business and marketing.
• Create a personal professional development plan.
• Manage resources and risks to contribute to profitability of the organization.
• Manage marketing within an enterprise.
• Apply technology to marketing and marketing information systems.
• Apply legal and ethical principles to personal, social, and professional behaviors.
• Develop long-term strategic marketing plans.
• Formulate selling strategies.
• Apply effective leadership skills.
• Design a promotion plan.

REQUIREMENT FOR PROGRAM ENTRY
• Ability to use computer keyboard

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Customer Service Representative, Marketing Assistant, Marketing Research Assistant, Sales Promotion Coordinator, or Sales Representative.

CUSTOMER SERVICE REPRESENTATIVE:
initiates follow-up work with current customer, processes and tracks customer orders, acts as an internal contact for customer inquiries as well as a liaison to field sales organizations, and uses telecommunications skills extensively.

MARKETING ASSISTANT: assists department head by performing similar duties; directs and coordinates department activities and functions in commercial, industrial, or service establishments; reviews and analyzes reports, records, and directives; confers with supervisory personnel; and performs administrative tasks such as pricing schedules.

MARKET RESEARCH ASSISTANT: researches market conditions to determine potential sales of product or service, examines and assists in analyzing data to forecast future marketing trends, and prepares reports and graphic illustrations of findings.

SALES PROMOTION COORDINATOR:
develops a calendar of promotional events, analyzes media utilization, reviews media rates and cost-effectiveness, performs follow-up detail work on promotion implementation, coordinates internal communication, and develops internal promotional support material.

SALES REPRESENTATIVE: sells mainly to other businesses such as factories, wholesalers, retailers, and institutions; sells business, financial, and consumer products and services; sets up displays; visits customers; does paperwork; writes correspondence; and studies literature relating to products.

CURRICULUM
The Marketing Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 67 credits.

FIRST SEMESTER
Course No. Description Credits
102-158 Business-Intro 3
103-103 Micro Basics MS Office 1 3
104-101 Selling Principles 3
104-110 Marketing Principles 3
105-101 Business Math 3
801-195 Communication-Written 3

SEMESTER TOTAL 18

SECOND SEMESTER
101-141 Accounting-Financial 3
104-124 Marketing Applications-PC 1
104-126 Promotion Principles 3
104-191 Customer Service Mgmt 3
104-198 Market Research 3
801-198 Speech 3

SEMESTER TOTAL 16

THIRD SEMESTER
104-120 Marketing Info Mgmt 3
182-157 Logistics Management 3
809-195 Economics 3
809-197 Society-Amer Contemp 3
809-199 Psychology-Human Relations 3

ELECTIVE 3

SEMESTER TOTAL 18

FOURTH SEMESTER
102-150 Law-Business 3
104-134 Marketing Internship 3
104-140 Marketing Field Study 3
104-143 Marketing-Direct 3
104-189 Sales Management 3

ELECTIVE 3

SEMESTER TOTAL 15

SUGGESTED ELECTIVES for this program include: International Marketing (104-148), Consumer Behavior (104-176), and Selling Techniques-Advanced (104-181).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

102-158 BUSINESS-INTRODUCTION
...organization/management process of human resources, production, operations, marketing, distribution, and finances; risk management; ethics/legalistic management; international business; accounting, computers, and data processing.

104-101 SELLING PRINCIPLES ...selling as a career; success factors in selling; personality development; product knowledge; and the sales process involving preparation, approach, presentation-demonstration, handling objections, and closing the sale successfully.

104-110 MARKETING PRINCIPLES ...marketing management, consumer behavior, market segmentation, product decisions and management, distribution, promotional decisions, pricing, market research, and international marketing strategy planning.

104-120 MARKETING INFORMATION MANAGEMENT ...opportunity analysis, marketing research processes and data sources, forecasting sales of new and established products, master plan for a marketing strategy, and implementation and control of marketing programs. (Prerequisite: 104-110).

104-126 PROMOTION PRINCIPLES ...theory and techniques for an integrated promotion plan; sales promotion planning; special event coordination; trade shows; public relations; direct marketing; and advertising: media selection, budgeting, layout, and script writing.

104-134 MARKETING INTERNSHIP ...training in an appropriate setting through actual work experience and observation. (Prerequisite: last semester in program).

104-140 MARKETING-FIELD STUDY ...an alternative to the internship: in-depth study of an industry, business, career, or project. (Prerequisite: last semester in program).

104-143 MARKETING-DIRECT ...direct marketing vs. general advertising, market segmentation through databases, renting prospect lists, print and broadcast media copy, direct mail, catalogs, telemarketing skills and script writing, and interactive technology.

104-189 SALES MANAGEMENT ...sales-force organization, staffing, and operations; recruiting and processing applicants; training programs; motivating; compensation; forecasting and budgeting; territories and routing; quotas; evaluating performance; and decision-making through case study analysis. (Prerequisite: 104-101).

104-191 CUSTOMER SERVICE MANAGEMENT ...develop professional telephone etiquette, explore customer service work environments, identify and analyze customer service failures, resolve problems cost effectively, set complaint policies, and communication techniques to handle complaining customers.

104-198 MARKET RESEARCH ...identifying problems and formulating problem hypothesis, situation analysis, informal investigation and secondary research, project objectives, primary research, sampling, questionnaires, interviews, processing the written report, and conclusions and data analysis. (Prerequisite: 104-110).

182-157 LOGISTICS MANAGEMENT ...basic concepts, management levels, elements of inventory control, transportation, warehousing, packaging, material handling and purchasing, and the role order processing plays in the distribution cycle.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Marketing and Graphic Communications  Program Code 101117

ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5440 or (800)422-NWTC ext. 440.

PROGRAM DESCRIPTION
Marketing and Graphic Communications trains students in electronic publishing, image editing, printing techniques, pre-press processes, graphics photography, illustration and graphic design concepts.

Graduates of this program will be able to:
- Conduct marketing plan.
- Implement advertising campaigns.
- Create designs for print and multimedia.
- Perform electronic pre-press operations.
- Perform conventional pre-press operations.
- Operate printing presses.
- Operate finishing equipment.

REQUIREMENTS FOR PROGRAM ENTRY
- Basic math
- Ability to use computer keyboard

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for a job as Desktop Publisher, Graphic Designer, Advertising Assistant, Commercial Art Worker, Layout Designer, Printing Support Worker, or Public Relations Assistant.

DESKTOP PUBLISHER: produces professional publications using electronic publishing software, scans graphic images, places text and graphics files onto the page, and operates image setters.

GRAPHIC DESIGNER: develops advertising concepts and prepares art for the final printed piece.

ADVERTISING ASSISTANT: works with the ad director or store manager to plan and prepare advertising for print, radio, and TV use.

COMMERCIAL ART WORKER: prepares artwork and copy to be used in label production, package design, and printed materials.

LAYOUT DESIGNER: designs basic plans for print advertising, passes on work to a commercial artist or copywriter, and is responsible for final electronic files.

PRINTING SUPPORT WORKER: handles electronic and traditional pre-press operations including process cameras, PMT processing, stripping negatives, plate making, evaluating halftones, color separations, contact printing, special effects halftone production, electronic scanning, image editing, and color proofing.

PUBLIC RELATIONS ASSISTANT: assists in public relations activities by helping to produce brochures, press releases, displays, and newsletters; organizes and prepares materials for use in presentations in the form of handouts, slide art/copy, transparencies, and charts.

CURRICULUM
The Marketing and Graphic Communications Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER
<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>104-101</td>
<td>Selling Principles</td>
<td>3</td>
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<tr>
<td>105-101</td>
<td>Business Math</td>
<td>3</td>
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<tr>
<td>111-111</td>
<td>Marketing 1-Visual Design</td>
<td>3</td>
</tr>
<tr>
<td>111-124</td>
<td>Marketing Presentation</td>
<td>4</td>
</tr>
<tr>
<td>801-195</td>
<td>Communication-Written</td>
<td>3</td>
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SECOND SEMESTER
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<th>Credits</th>
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<tbody>
<tr>
<td>104-110</td>
<td>Marketing Principles</td>
<td>3</td>
</tr>
<tr>
<td>111-121</td>
<td>Marketing 2-Visual Design</td>
<td>3</td>
</tr>
<tr>
<td>111-123</td>
<td>Graphic Reproduction Tech</td>
<td>4</td>
</tr>
<tr>
<td>111-161</td>
<td>Macintosh-Publish/Ilus</td>
<td>3</td>
</tr>
<tr>
<td>801-162</td>
<td>Copywriting-Intro</td>
<td>3</td>
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<tr>
<td>TOTAL 16</td>
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THIRD SEMESTER
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<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>104-102</td>
<td>Advertising Fund</td>
<td>3</td>
</tr>
<tr>
<td>111-101</td>
<td>Macintosh-Image Editing</td>
<td>3</td>
</tr>
<tr>
<td>111-133</td>
<td>Photography-Reproduction</td>
<td>4</td>
</tr>
<tr>
<td>809-195</td>
<td>Economics</td>
<td>3</td>
</tr>
<tr>
<td>809-197</td>
<td>Society-Amer Contemp</td>
<td>3</td>
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<tr>
<td>ELECTIVE</td>
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<tr>
<td>TOTAL 19</td>
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FOURTH SEMESTER
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<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>111-141</td>
<td>Marketing Comm Internship</td>
<td>3</td>
</tr>
<tr>
<td>111-142</td>
<td>Graphic Reproduction-Adv</td>
<td>2</td>
</tr>
<tr>
<td>111-144</td>
<td>Public Relations</td>
<td>3</td>
</tr>
<tr>
<td>801-198</td>
<td>Speech</td>
<td>3</td>
</tr>
<tr>
<td>809-199</td>
<td>Psychology-Human Relations</td>
<td>3</td>
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<tr>
<td>ELECTIVE</td>
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<td>3</td>
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<tr>
<td>TOTAL 17</td>
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</tbody>
</table>

SUGGESTED ELECTIVES for this program include: Macintosh Systems Management (107-159), 35mm Photography (111-102), Macintosh Image Editing-Advanced (111-110).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

104-102 ADVERTISING FUNDAMENTALS
...advertising history; types of advertising; target marketing; multi-media approach; copy, layout, and design; the advertising agency; developing an advertising campaign; and the legal, economic, and social aspects of advertising.

111-101 MACINTOSH-IMAGE EDITING...all aspects of the software application Adobe Photoshop; scanning, manipulating, editing photos, and producing process separations. (Prerequisite: 111-124).

111-111 MARKETING 1-VISUAL DESIGN...design and drawing for graphic reproduction, design trends, and applications; brochure, advertising, and corporate I.D. package created using basic design process of thumbnails, rough, and comprehensive layout.

111-121 MARKETING 2-VISUAL DESIGN...apply basic design techniques to an advertising campaign, illustration techniques, lettering and typography, reproducing logos for print production, color for advertising, and preparation of a professional portfolio. (Prerequisite: 111-111).

111-123 GRAPHIC REPRODUCTION TECHNIQUES...basic process of reproducing images using offset lithography including electronic imaging, desktop and traditional camera ready art, film stripping, plates, press operation, estimating, and production planning. (Prerequisite: 111-111).

111-124 MARKETING PRESENTATION...desktop publishing skills on the Macintosh computer using QuarkXPress and Adobe Illustrator; preparation of brochures, newsletters, and corporate identity packages.

111-133 PHOTOGRAPHY-REPRODUCTION...graphics photography, electronic imaging, scanning, line film characteristics, halftones, duotones, posterizations, image setters, and halftone output techniques. (Prerequisite: 111-123).

111-141 MARKETING COMMUNICATIONS INTERNSHIP...classroom experience and on-the-job training concluding with an evaluation by employer and instructor. (Prerequisite: last semester in program).

111-142 GRAPHIC REPRODUCTION-ADVANCED...various techniques used to print 4-color process images including traditional and electronic separations; negative production; stripping, printing, and proofing techniques; color correction; preparing negatives for flexo, gravure, and screen printing. (Prerequisite: 111-133).

111-144 PUBLIC RELATIONS...identifying the needs of an organization's publics, public relations as an attitude, social and organizational responsibility, news releases, newsletters, and use of business communications.

111-161 MACINTOSH-PUBLISHING/ILLUSTRATING...advanced skills and techniques: prepress processing, color, paragraph formats, tabs, style sheets, keyboard shortcuts, QuarkXPress, Adobe Illustrator, and individual projects. (Prerequisite: 111-124).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Material Handling Equipment Mechanic  Program Code 314721

TECHNICAL DIPLOMA - ONE YEAR
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5823 or (800)422-NWTC ext. 823.

PROGRAM DESCRIPTION
Material Handling Equipment Mechanic prepares students to service and maintain gasoline, electric, and diesel powered material handling equipment.

Graduates of this program will be able to:
• Repair mechanical drive systems.
• Repair hydraulic systems.
• Repair electrical systems.
• Repair internal combustion engines.
• Reassemble material handling equipment.
• Assess condition, diagnose problems of material handling equipment.
• Communicate technical information.
• Perform scheduled maintenance.
• Use hand and power tools.
• Operate material handling equipment.

REQUIREMENT FOR PROGRAM ENTRY
• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)

READING LEVEL
Materials used within this program have an average reading level of 11th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMLOYMENT POTENTIAL
A graduate of the program will have potential for employment as Material Handling Equipment Mechanic, Lift Truck Mechanic, Field Service Mechanic, Scheduled Maintenance Mechanic, Farm Equipment Mechanic, Construction Equipment Mechanic, and High Reach Equipment Mechanic.

MATERIAL HANDLING EQUIPMENT MECHANIC: inspects, maintains, repairs, and adjusts mobile material handling equipment such as front-end loaders, back hoes, handling and stack loaders.

LIFT TRUCK MECHANIC: inspects, maintains, repairs, and adjusts industrial lift trucks within an equipment dealership or for an industrial manufacturing plant.

FIELD SERVICE MECHANIC: performs on-site repairs on mobile material handling equipment while traveling as a mechanic for a material handling equipment dealer.

SCHEDULED MAINTENANCE MECHANIC: performs routine maintenance such as chassis lubrication, oil changes, and engine tune-ups on material handling mobile equipment.

FARM EQUIPMENT MECHANIC: inspects, maintains, repairs, and adjusts farm mobile material handling equipment such as skid loaders, tractors, and bail handlers for equipment dealers and repair services.

CONSTRUCTION EQUIPMENT MECHANIC: inspects, maintains, and repairs construction equipment such as front-end loaders, skid steer loaders, back hoes, trollers, and dozers for construction companies and equipment dealerships.

HIGH REACH EQUIPMENT MECHANIC: inspects, maintains, and repairs equipment such as scissors lifts and boom lifts in a dealership or industrial plant.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Field Service Representative
• Journey Level Mechanic
• Lead Mechanic
• Master Mechanic
• Sales and Service Representative
• Shop Foreman
• Shop Supervisor

CURRICULUM
The Material Handling Equipment Mechanic Technical Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 32 credits.

FIRST SEMESTER
Course No. Description Credits
442-355 Welding-Maintenance 3
472-310 Mobile Equip-Engine Th/Rep 10
472-312 Mobile Equip-Electric Sys 2
804-315 Math-Basic 1
SEMESTER TOTAL 16

SECOND SEMESTER
472-320 Mobile Equip-Drive Trains 10
472-324 Electrical Vehicle Theory 3
801-386 Communicating-Interpers 1
806-311 Hydraulics-Applied 2
SEMESTER TOTAL 16

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

442-355 WELDING-MAINTENANCE ...ferrous and non-ferrous metals, oxy-acetylene, gas tungsten arc, gas metal arc, shielded metal arc, drilling and threading.

472-310 MOBILE EQUIPMENT-ENGINE THEORY/REPAIR ...industrial truck types, internal combustion engines, ignition systems, lubrication systems, cooling systems, valve trains, engine block assemblies, and fuel systems.

472-312 MOBILE EQUIPMENT-ELECTRICAL SYSTEMS ...AC/DC theory, electrical schematics, battery testing, troubleshooting, system charging/starting, instrument circuits, and electronic ignition circuits.

472-320 MOBILE EQUIPMENT-DRIVE TRAINS ...drive train theory, hydraulic systems, mast systems, engine couplers, stand transmissions, automatic transmissions, hydrostatic transmissions, differentials, brake systems, and steering systems. (Prerequisite: 472-310).

472-324 ELECTRIC VEHICLE THEORY ...electrical testing equipment, basic electric laws, electrical schematic reading, conductors, semi-conductor and insulator theory, DC motor theory, DC controls, SCR and transistor drive systems.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Mechanical Design Technician

ASSOCIATE DEGREE - TWO YEARS PLUS ONE SUMMER

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5498 or (800)422-NWTC ext. 498.

PROGRAM DESCRIPTION

Mechanical Design Technician prepares students for employment in manufacturing industries. Technicians work closely with engineers to put their ideas on paper.

Graduates of this program will be able to:
- Draw sectional and auxiliary view drawings.
- Apply scale factors to CAD drawings.
- Use mechanical, architectural, metric and civil scales.
- Draw single view and orthographic mechanical drawings.
- Maintain files on a personal computer.
- Operate a word processing program.
- Analyze displacement, velocity and acceleration of machine members.
- Analyze stresses caused by forces acting on bodies at rest.
- Analyze forces acting on bodies at rest.
- Sketch orthographic and isometric drawings.
- Use tables to select components in machine design (standard components include threaded, non-threaded fasteners and adhesives).
- Dimension mechanical drawings.
- Draw weldments and sheetmetal layouts.
- Design cams.
- Select gears from catalogs.
- Design simple mechanical devices.
- Draw assembly drawings.
- Construct ladder diagrams.
- Display attitudes consistent with the profession.

REQUIREMENTS FOR PROGRAM ENTRY

- High school background in mathematics, science, and industrial education
- High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
- High school algebra or equivalent

READING LEVEL

Materials used within this program have an average reading level of 12th grade.

MATH LEVEL

Students should have mastered algebra skills before entering this program. For a description of algebra skills, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL

A graduate of the program will have potential for employment as Detailer, Mechanical Design Technician, and Mechanical Drafter.

DETAILER: produce technical drawings of parts of machines from supplied information using manual drafting equipment and/or a CAD system, makes drawing changes to comply with Engineering Change Notices (ECN's)/Engineering Change Requests (ECR's), and works under close supervision.

MECHANICAL DESIGN TECHNICIAN: applies knowledge of mechanical engineering technology to design, develop, and test new or revised machinery; assists in component selection and sizing of machine members; has duties split between design and drafting on a conventional or CAD system; and may specialize in a specific type of machine or product.

MECHANICAL DRAFTER: has the principal duty of preparing working drawings of machinery and mechanical devices using conventional or CAD systems and drafts detail and assembly drawings indicating dimensions and tolerances, materials, surface finishes, joining requirements, and other engineering data.

With additional education and/or work experience, graduates may find other opportunities for employment.
- Mechanical Designer (Product Designer)
- Lead Designer
- Machine Designer
- Project Engineer
- Technical Sales/Service Representative

CURRICULUM

The Mechanical Design Technician Associate Degree is a two-year plus one summer, five-semester program. Upon graduation, a student will have completed 72 credits.

FIRST SEMESTER

Course No. Description Credits
606-111 Mechanical Design-Exploring 1
606-112 Engineering Applications 1
606-113 CAD 2
606-119 Sketching-Technical 2
801-196 Communication-Interpers 3
804-150 Math 1-Tech 5
809-197 Society-Amer Contemp 3

SEMICERN TOTAL 17

SECOND SEMESTER

420-111 Manufacturing Tech 1 4
606-122 CAD-Mechanical 3
606-126 Geometric Dimension/General 2
804-160 Math 2-Tech 4
806-150 Science 1-Tech 3

SEMICERN TOTAL 16

SUMMER SEMESTER

801-195 Communication-Written 3
809-199 Psychology-Human Relations 3

SEMICERN TOTAL 6

THIRD SEMESTER

420-121 Manufacturing Tech 2 4
606-135 Machine Members-Strength 5
606-138 Statics 2
606-148 Materials-Strength 3
606-137 Geometry-Descriptive 3
606-139 CAD-Electrical Control 3

SEMICERN TOTAL 18

FOURTH SEMESTER

606-141 Design Problems 3
606-143 Mechanisms 3
801-197 Reporting-Technical 3
806-170 Science-Fluid Power 3

SEMICERN TOTAL 15


This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

420-111 MANUFACTURING TECHNIQUES 1
- manufacturing techniques, quality assurance, drilling, turning/boring, cutting tools, broaching/sawing, milling/grinding, engineering materials, heat treatment, and casting processes.

420-121 MANUFACTURING TECHNIQUES 2
- automated machining processes with computer technology; metal joining and plastics processes; tool design: jig and fixture design, metal stamping, die design, injection mold die design for metals and plastics. (Prerequisite: 420-111).

606-111 MECHANICAL DESIGN-EXPLORING
- general philosophy, organization, program procedures, engineering profession overview, simple design project to illustrate basic concepts and methods of machine design.

606-112 ENGINEERING APPLICATIONS
- basics of a computer system, computer terminology, DOS, Windows NT, Microsoft Word, Microsoft Excel, and AutoCAD Release 13.

606-113 CAD (COMPUTER AIDED DRAFTING)
- AutoCAD terminology, drawing preliminaries, basic inquiry and setting commands, layer setting and manipulation, basic drawing and display commands, basic edit commands, plotting, blocks, and attributes. (Prerequisite: 606-112, 606-119).

606-119 SKETCHING-TECHNICAL
- design and communication, basic freehand sketching, lettering techniques, geometric constructions, modeling basics, orthographic and pictorial sketching, section and auxiliary views, and dimensioning basics.

606-126 GEOMETRIC DIMENSIONING/ TOLERANCING
- basic review, geometric dimensioning, datums, material condition symbols, tolerances of form and profile, tolerances of orientation and run out, location tolerances and virtual condition.

606-135 MACHINE MEMBERS-STRENGTH
- force analysis, moments, truss and frame analysis, simple stress, properties of materials, joint design, centroids and moments of inertia, beam design, shafting design, combined stresses, columns. (Prerequisite: 804-160).

606-137 GEOMETRY-DESCRIPTIVE
- orthographic projection, primary auxiliary views, points, lines, planes, successive auxiliary views, piercing points, intersection of planes and dihedral angles, parallelism and perpendicularity, angles between lines and planes, revolutions, and vectors. (Prerequisite: completion of 2nd semester).

606-138 STATICS
- force analysis, moments, resultant and equilibrant forces, nonconcurrent-noncoplanar forces, and introduction to stress. (Prerequisite: 804-160).

606-139 CAD-ELECTRICAL CONTROL
- electrical and electronic devices, drafting practices and formats, AutoCAD shape files, menu customization, Autolisp, macros. (Prerequisite: 606-123).

606-141 DESIGN PROBLEMS
- data gathering, mathematics, and document standard practices. (Prerequisite: 606-123, 606-135).

606-143 MECHANISMS
- the study of motion, vector equations and sense notation, basic motion concepts, kinematic drawing and displacement, velocities in mechanisms, accelerations in mechanisms, cam motions, and gear trains. (Prerequisite: 606-123, 804-160).

606-148 MATERIALS-STRENGTH
- effect of static loads on materials; stresses; properties; bolted, riveted, and welded joints; center of gravity; centroids; inertia; simple beams; torsion; shafts, couplings, and keys; combined stresses and columns. (Prerequisite: 606-138).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Medical Assistant  Program Code 315091

TECHNICAL DIPLOMA - ONE YEAR

Offered at the Green Bay campus. For more information call the Green Bay Campus at (920)498-5530 or (800)422-NWTC ext. 530.

PROGRAM DESCRIPTION
Medical Assistant students learn to perform business and clinical duties in the medical office. Duties include business and computer operations, patient preparation, and routine medical and laboratory procedures.

Graduates of this program will be able to:
• Obtain employment as a Medical Assistant
• Display professionalism.
• Communicate effectively as a clinician.
• Perform administrative duties.
• Perform clinical duties.
• Apply legal concepts to practice.
• Manage the office.
• Provide instruction.
• Manage practice finances.
• Pass National Medical Assistant Certification Examination.

Students will have on-the-job experience in area clinics during a five-week medical affiliation during the second semester of the program.

The Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) and the American Association of Medical Assistants' Endowment. Commission on Accreditation of Allied Health Education Programs in collaboration with the American Association of Medical Assistants' Endowment Curriculum Review Board 20 N. Wacker Drive, Suite 1575 Chicago, IL 60606 (800)228-2262

A student will be required to purchase uniforms, pay for liability insurance for the medical affiliation course, and provide his/her own transportation to the medical offices.

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent
• Satisfactory placement on the ACT assessment test
• Typing proficiency 35-words per minute
• An interview or orientation
• A satisfactory medical examination within the past three months before entering the program

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills.
For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of this program will have the potential to be employed as Medical Assistant, Claims Analyst, EKG Technician, Laboratory Assistant, Medical Records Clerk, Medical Office Assistant, Pharmacy Aide, and Transcriptionist.

MEDICAL ASSISTANT: prepares a patient for examination or treatment, takes vital signs, sterilizes instruments, performs simple lab tests, performs electrocardiograms, and assists the physician as needed.

CLAIMS ANALYST: processes insurance claims on a computer.

EKG TECHNICIAN: operates and maintains electrocardiographic machines, records the heart's electrical activity, and provides data for diagnosis and treatment of heart ailments by physicians.

LABORATORY ASSISTANT: performs simple laboratory procedures and venipunctures to collect blood specimens.

MEDICAL RECORDS CLERK: handles all patient medical records in areas such as progress notes and pulls records of patients on a daily basis.

MEDICAL OFFICE ASSISTANT: performs a variety of duties related to bookkeeping, typing, filing, record keeping, customer relations, telephoning, general correspondence, appointments, and patient accounts.

PHARMACY AIDE: prepares unit dose medication, types and labels outpatient prescriptions, and delivers medications to wards.

TRANSCRIPTIONIST: uses transcribing machines and word processing equipment, proofreads, and verifies documents.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Medical Laboratory Technician
• Medical Office Manager
• Medical Transcriptionist

CURRICULUM
The Medical Assistant program is a one-year, two-semester, plus 2-week program. Upon graduation, a student will have completed 31 credits.

FIRST SEMESTER
Course No. Description Credits
* 105-351 Medical Office Proc 1 2
106-351 Keyboarding-Mедical 2
509-306 Medical Asst-Pers/Voc Rel 2
509-307 Medical Office Th/Proc 1 2
509-308 Health/Disease 1-Human 3
509-360 Medical Terminology 2
801-385 Communicating-Writing 1
801-387 Grammar-Business Appl 1

SEMESTER TOTAL 15

SECOND SEMESTER
* 105-355 Medical Office Proc 2 2
509-325 Medical Insurance 2
509-326 Medical Affiliation 3
* 509-327 Medical Office Th/Proc 2 4
* 509-328 Medical Lab Procedures 1 5

SEMESTER TOTAL 16

No final grade lower than C is acceptable in any course marked with an asterisk. A student must repeat that particular course to achieve a C or better final grade in order to continue in, or graduate from, this program.

This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). on recommendation of the Committee on Accreditation for Medical Assistant Education. Upon graduation, a student will be eligible to take the national examination for Certified Medical Assistants.

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.

NORTHEAST WISCONSIN 114 TECHNICAL COLLEGE
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

105-351 MEDICAL OFFICE BUSINESS PROCEDURES 1 ...office procedures applicable to medical offices including receptionist responsibilities, telephoning, appointment scheduling, records management, handling mail, and office maintenance. (Prerequisite: admission to program).

105-355 MEDICAL OFFICE BUSINESS PROCEDURES 2 ...maintaining financial records/computer applications in physician's office: patient billing/recordkeeping, word processing/transcription, and payroll for medical office. (Prerequisite: 105-351).

106-351 KEYBOARDING-MEDICAL ASSISTANTS ...keying specialized medical documents; rules for technical usage of capitalization, punctuation, abbreviations, symbols, and numbers; and improvement of speed, accuracy, and word processing skills. (Prerequisite: 35 WPM touch keyboarding, admission to program).

509-306 MEDICAL ASSISTANT-PERSONAL/VOCATIONAL RELATIONS ...basic principles of human behavior, the patient/health care provider interaction, medical law and ethics, and the implications of law and ethics for the medical office employee. (Prerequisite: admission to program).

509-307 MEDICAL OFFICE THEORY/PROCEDURES 1 ...medical asepsis and infection control, vital signs, the patient examination, first aid, and basic life support. (Prerequisite: admission to program).

509-308 HEALTH/DISEASE 1-HUMAN ...structure and organization of the body, functions and interaction of all body systems, and abnormalities and diseases of the body.

509-325 MEDICAL INSURANCE ...coding and submitting claims for common medical insurance programs including Medicare, Medicaid, Blue Cross Blue Shield, CHAMPUS, workers compensation, and private commercial plans. (Prerequisite: completion of 1st semester).

509-326 MEDICAL AFFILIATION ...how to perform various clinical and administrative procedures under supervision in an affiliating medical facility. Includes practical application of all course work. (Prerequisite: all prior program courses).

509-327 MEDICAL OFFICE THEORY/PROCEDURES 2 ...clinical skills performed in the doctor's office, the eye and ear, healing through physical therapy, sterilization and disinfection, minor office surgery, administration of medication, venipuncture, x-ray examinations, and specialty examinations. (Prerequisite: 509-307).

509-328 MEDICAL LABORATORY PROCEDURES 1 ...specimen collection and handling, laboratory safety, microscope use, electrocardiography (ECG) administration; laboratory procedures including urinalysis, microbiology, hematology, coagulation, blood bank, serology, and chemistry. (Prerequisite: completion of 1st semester).

509-360 MEDICAL TERMINOLOGY ...spelling, pronunciation, definition, and abbreviation application; word roots, prefixes, and suffixes; and anatomical structure.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Medical Laboratory Technician
Program Code 105131

ASSOCIATE DEGREE - TWO YEARS PLUS ONE SUMMER
Offered at the Green Bay campus. For more information, call the Green Bay Campus at (920)498-5439 or (800)422-NWTC ext. 439.

PROGRAM DESCRIPTION
Medical Laboratory Technician students learn to perform a variety of laboratory tests to distinguish abnormal from normal results and report results to the physician to facilitate patient care.

Graduates of this program will be able to:
• Collect blood samples.
• Enter laboratory results.
• Maintain laboratory instrumentation.
• Communicate effectively.
• Work cooperatively.
• Behave in an ethical manner.
• Display the knowledge and skills necessary to increase proficiency in the field.
• Monitor quality control procedures.
• Perform routine analytical laboratory tests.
• Evaluate accuracy of test results obtained.
• Practice universal safety precautions.
• Relate clinical significance of test results.
• Demonstrate knowledge of human anatomy and physiology.
• Demonstrate proficiency in Chemistry.
• Display knowledge of general microbiology.
• Perform calculations.
• Process blood and other clinical specimens for analysis.

A student is required to purchase uniforms, provide their own transportation to clinical facilities, and pay for liability insurance for the Clinical Practicum course.

The Medical Laboratory Technician program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
8410 W. Bryn Mawr Ave., Suite 670
Chicago, IL 60631
(312) 714-8888

A graduate is eligible to take the National Medical Laboratory Technician Board of Registry examination.

REQUIREMENTS FOR PROGRAM ENTRY
• Minimum standard composite score of 20 on the ACT assessment
• High school diploma or equivalent
• High school courses which include two years of algebra or one year of advanced math (or attain a minimum of 80% on the NWTC algebra examination), one year of biology or equivalent, and one year of chemistry taken within the past 5 years or equivalent. All courses should have been completed with a C or better grade
• Have completed a medical examination satisfactorily within three months before entering program
• It is strongly recommended that the student attend the program orientation session.

NOTE: Students who do not meet the above requirements should consult an NWTC counselor about ways to make up any deficiencies through testing or course work.

READING LEVEL
Materials used within this program have an average reading level of 14th grade.

MATH LEVEL
See program requirements above for details.

CURRICULUM
The Medical Laboratory Technician Associate Degree is a two-year, one summer, five-semester program. Upon graduation, a student will have completed 72 credits.

FIRST SEMESTER
Course No. Description Credits
* 513-100 Medical Lab-Intro 3
801-195 Communication-Interpers 3
* 806-165 Chemistry-Intro 5
* 806-180 Anatomy/Physiology 4
* 806-194 Microbiology 3
SEMMESTER TOTAL 18

SECOND SEMESTER
* 513-101 Medical Lab-Microscopy Clin 3
* 513-104 Medical Lab-Hematology 5
* 513-111 Med Lab-Microbiology-Clin 5
801-195 Communication-Written 3
SEMMESTER TOTAL 16

SUMMER SEMESTER
809-195 Economics 3
809-196 Sociology-Intro 3
SEMMESTER TOTAL 6

THIRD SEMESTER
* 513-107 Medical Lab-Instrumentation 2
* 513-108 Medical Lab-Immunology-Clin 5
* 513-109 Medical Lab-Chemistry-Clin 5
809-198 Psychology-Intro 3
ELECTIVE 3
SEMMESTER TOTAL 18

FOURTH SEMESTER
* 513-141 Medical Lab-Practicum 11
ELECTIVE 3
SEMMESTER TOTAL 14

No final grade lower than C is acceptable in any of the courses marked with an asterisk. A student must repeat that particular course to achieve a C or better final grade in order to continue in or graduate from this program. If the course is segmented, the successful retake must occur before continuing the sequence.

SUGGESTED ELECTIVES: Computer Applications (804-182), Keyboarding (106-145).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

513-100 MEDICAL LABORATORY-INTRODUCTION
...the Medical Laboratory Technician profession, medical terminology, patient safety and the collection of patient specimens, basic hematology techniques, laboratory safety, laboratory first aid procedures. (Prerequisite: admission to MLT program).

513-101 MEDICAL LAB-MICROSCOPY CLINICAL
...physical, chemical, and microscopic examination of urine and body fluids as performed in the clinical laboratory. (Prerequisite: admission to MLT program).

513-104 MEDICAL LABORATORY-HEMATOLOGY
...the study of blood, blood diseases, hematopoiesis, principles and procedures for routine and special hematology and coagulation tests. (Prerequisite: completion of 1st semester).

513-107 MEDICAL LAB-INSTRUMENTATION
...fundamentals of clinical laboratory instrumentation including the principles of safety, theory, and operation; routine maintenance of clinical laboratory instruments; and special procedures. (Prerequisite: completion of 2nd semester).

513-108 MEDICAL LAB-IMMUNOLOGY-CLINICAL
...basic theoretical concepts and practical application of immunohematologic and serologic laboratory tests. Laboratory test results are interpreted for clinical significance. (Prerequisite: completion of 2nd semester).

513-109 MEDICAL LAB-CHEMISTRY-CLINICAL
...study and application of manual and automated blood and body fluid chemistry procedures, solution preparation, and quality control methods; chemical analysis of specimens related to disease diagnosis and processes. (Prerequisite: completion of 2nd semester).

513-111 MEDICAL LAB-MICROBIOLOGY-CLINICAL
...bacterial culture and microscopic techniques, antimicrobial susceptibilities, anaerobic culture techniques, mycology, parasitology, and mycobacterial procedures. (Prerequisite: completion of 1st semester).

513-141 MEDICAL LAB-PRACTICUM
...clinical applications of knowledge and procedures in hematology/coagulation, urinalysis, microbiology, blood bank, chemistry/serology; preparation for MLT certification examinations. (Prerequisite: all MLT courses).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
PROGRAM DESCRIPTION
Microcomputer Applications Software Technician emphasizes problem solving using microcomputer hardware and software facilities including DOS and Windows operating systems, Microsoft Word, Microsoft Excel, and Visual BASIC.

Graduates of this program will be able to:
• Solve business problems through the application of microcomputer technology.
• Apply emerging technology.
• Maintain microcomputer hardware.
• Configure microcomputer systems.
• Manipulate file systems using DOS and Windows commands.
• Automate word processing operations using macros and programming techniques.
• Design user-friendly spreadsheet applications.
• Provide end-user support for word processing and spreadsheet software.
• Generate algorithmic solutions to business problems.
• Translate an algorithmic solution into a working program using a high level programming language.
• Document computer programs.

REQUIREMENTS FOR PROGRAM ENTRY
• One year of high school algebra or equivalency
• Ability to use computer keyboard and mouse

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic algebra skills. For a description of math, see the Basic Education section of this catalog on Page 20.

This can also be the first year of the two-year Microcomputer Specialist (CIS) program on the Green Bay campus.

CURRICULUM
The Microcomputer Applications Software Technician Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 34 credits.

FIRST SEMESTER
Course No. Description Credits
101-102 Accounting-Intro 3
107-161 Micro Software 1-Intro 4
107-162 Micro Hardware 4
801-195 Communication-Written 3
804-151 Math-Data Proc Logic 3
SEMESTER TOTAL 17

SECOND SEMESTER
102-158 Business-Intro 3
107-171 Micro Software 2-Excel 4
107-172 Micro Program-Visual BASIC 4
801-197 Reporting-Technical 3
804-161 Math-Data Proc Alg/Stats 3
SEMESTER TOTAL 17

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

101-102 ACCOUNTING-INTRODUCTION  what accounting information is, why it is important, and how it is used by economic decision-makers.

107-161 MICRO SOFTWARE 1-INTRODUCTION  elementary DOS commands, the DOS shell, EDIT, batch file programming, advanced DOS commands, basic Windows 3.1 operation, beginning Microsoft Word features, and PC configuration files.

107-162 MICRO HARDWARE  function, installation, and configuration of basic microcomputer hardware components including peripheral devices; basic maintenance procedures; use of diagnostic and utility software; memory management; and telecommunications concepts. (Prerequisite: 107-161 or 107-165).

107-171 MICRO SOFTWARE 2-EXCEL  comprehensive and rigorous coverage of spreadsheet concepts using Microsoft Excel: evaluation, user design, development, testing, documentation, macros, and automation of spreadsheets. (Prerequisite: 107-161).

107-172 MICRO PROGRAMMING-VISUAL BASIC  program definition and design, coding, testing, debugging, interactive programs, sequential and random access files, and an introduction to data structures. (Prerequisite: 107-161).

804-151 MATH-DATA PROCESSING LOGIC  algorithms, percent applications, interest applications, inventory, depreciation, payroll, hexadecimal arithmetic, flow diagrams, sets, logic, and decision tables. (Prerequisite: Algebra).
Microcomputer Specialist (CIS)  
ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5479 or (800)422-NWTC ext. 479.

PROGRAM DESCRIPTION

Microcomputer Specialist emphasizes problem solving using current software packages, programming in BASIC, hardware configurations, networking, operating systems, and software system design.

Graduates of this program will be able to:

• Apply emerging technology.
• Train end users.
• Manipulate a DOS-based file system using DOS commands.
• Document computer programs.
• Maintain microcomputer hardware.
• Configure microcomputer systems.
• Design user-friendly spreadsheet applications.
• Implement customized relational database systems.
• Automate word processing operations using macros and programming techniques.
• Perform network operations within a UNIX environment.
• Design effective presentations using presentation management software.
• Provide end-user support for word processing software.
• Control the operations of a Novell network.
• Differentiate between various network topologies and protocols.
• Generate algorithmic solutions to business problems.
• Maintain users' Windows-based environments.
• Design batch files in a DOS or network environment.
• Secure employment in the field.
• Develop computer-based training modules.
• Solve business problems through the application of microcomputer technology.
• Research technological advances.
• Translate an algorithmic solution into a working program using a high level programming language.

REQUIREMENTS FOR PROGRAM ENTRY

• One year of high school algebra or equivalency
• Ability to use computer keyboard and mouse

READING LEVEL

Materials used within this program have an average reading level of 12th grade.

MATH LEVEL

Students should have mastered basic algebra skills. For a description of math, see the Basic Education section of this catalog on page 20.

CURRICULUM

The Microcomputer Specialist Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>101-102</td>
<td>Accounting-Intro</td>
<td>3</td>
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<tr>
<td>107-161</td>
<td>Micro Software 1-Intro</td>
<td>4</td>
</tr>
<tr>
<td>107-162</td>
<td>Micro Hardware</td>
<td>4</td>
</tr>
<tr>
<td>801-195</td>
<td>Communication-Written</td>
<td>3</td>
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<tr>
<td>804-151</td>
<td>Math-Data Proc Logic</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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SECOND SEMESTER

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<tr>
<td>102-158</td>
<td>Business-Intro</td>
<td>3</td>
</tr>
<tr>
<td>107-171</td>
<td>Micro Software 2-Excel</td>
<td>4</td>
</tr>
<tr>
<td>107-172</td>
<td>Micro Program-Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td>801-197</td>
<td>Reporting-Technical</td>
<td>3</td>
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<tr>
<td>804-161</td>
<td>Math-Data Proc Alg/Stats</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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THIRD SEMESTER

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<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>107-181</td>
<td>Micro Software 3-Access</td>
<td>4</td>
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<tr>
<td>107-182</td>
<td>Micro Operating Systems</td>
<td>4</td>
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<tr>
<td>809-197</td>
<td>Society-Amer Contemp</td>
<td>3</td>
</tr>
<tr>
<td>809-199</td>
<td>Psychology-Human Relations</td>
<td>3</td>
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<td></td>
<td>ELECTIVE</td>
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<td><strong>SEMESTER TOTAL</strong></td>
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FOURTH SEMESTER

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<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>107-191</td>
<td>Micro Software 4-Adv</td>
<td>4</td>
</tr>
<tr>
<td>107-192</td>
<td>Micro Document/Training</td>
<td>4</td>
</tr>
<tr>
<td>107-193</td>
<td>Micro Internship</td>
<td>3</td>
</tr>
<tr>
<td>809-195</td>
<td>Economics</td>
<td>3</td>
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<td></td>
<td>ELECTIVE</td>
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<td></td>
<td><strong>SEMESTER TOTAL</strong></td>
<td><strong>17</strong></td>
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</tbody>
</table>

SUGGESTED ELECTIVES for this program include: Micro Programming "C" (107-173), Introduction to Midrange Systems (107-174), Micro Hardware Troubleshooting (107-177), Micro Networking (107-179).

A student desiring a strong financial background or a student planning to double major in Accounting is advised to substitute the four-credit Accounting I (101-110) for the three-credit Introduction to Accounting (101-102). To discuss this further, please contact the NWTC program counselor.

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

107-161 MICRO SOFTWARE 1-INTRODUCTION
...elementary DOS commands, the DOS shell, EDIT, batch file programming, advanced DOS commands, basic Windows 3.1 operation, beginning Microsoft Word features, and PC configuration files.

107-162 MICRO HARDWARE ...function, installation, and configuration of basic microcomputer hardware components including peripheral devices; basic maintenance procedures; use of diagnostic and utility software; memory management; and telecommunications concepts. (Prerequisite: 107-161 or 107-165).

107-171 MICRO SOFTWARE 2-EXCEL
...comprehensive and rigorous coverage of spreadsheet concepts using Microsoft Excel: evaluation, user design, development, testing, documentation, macros, and automation of spreadsheets. (Prerequisite: 107-161).

107-172 MICRO PROGRAMMING-VISUAL BASIC
...program definition and design, coding, testing, debugging, interactive programs, sequential and random access files, and an introduction to data structures. (Prerequisite: 107-161).

107-181 MICRO SOFTWARE 3-ACCESS
...database management and application development including design, automation, and use of relational database management systems using Microsoft Access. (Prerequisite: 107-171, 107-172).

107-182 MICROCOMPUTER OPERATING SYSTEMS ...creation of microcomputer systems: single machine systems including advanced MS-DOS commands and Windows, and multi-user systems including Novell Netware and Unix. (Prerequisite: 107-161, 107-162).

107-191 MICRO SOFTWARE 4-ADVANCED
...exploration, evaluation, and comparison of specialized software packages: advanced word processing with Microsoft Word, presentation graphics with Microsoft PowerPoint, and telecommunications with Telix 3.2. (Prerequisite: 107-171, 107-172).

107-192 MICRO DOCUMENTATION/TRAINING
...developing technical and nontechnical software documentation; documenting cost/benefit analysis, projects, and proposals; formal and informal training exercises; and documenting software and hardware needs and specifications. (Prerequisite: last semester in program).

107-193 MICRO INTERNSHIP ...individual on-the-job training: consulting with users in design, development, testing, debugging, and documentation problems; training in uses of software packages; configuring and installing hardware and networks. (Prerequisite: last semester in program).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Network Specialist (CIS)  Program Code 101078

ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5479 or (800)422-NWTC Ext. 479.

PROGRAM DESCRIPTION

Network Specialist teaches students to design, install, configure, and support computer networks.

Graduates of this program will be able to:
• Design a local area network (LAN) per specifications.
• Construct a local area network using the required physical components.
• Install network hardware including modems, interface cards, and cabling.
• Install network operating system software, application software, and databases.
• Configure software and databases per specifications.
• Assign network security and access privileges per specifications.
• Apply diagnostic tools to troubleshoot and resolve problems.
• Fine-tune network performance based upon analysis of statistical data.
• Perform network functions for Novell, UNIX, and Windows-NT environments including user account, access, and resource management.
• Differentiate between various network topologies and protocols.
• Use word processing, spreadsheet, and database software to solve business problems.
• Develop internet, intranet, and extranet facilities and interfaces per specifications.
• Develop technical documentation on network configuration, security, and maintenance.
• Design effective presentations using presentation management software.
• Apply project management techniques.
• Utilize emerging technology to upgrade existing networks and improve performance.
• Maintain microcomputer hardware and peripherals.
• Develop a wide area network (WAN) proposal per specifications.

REQUIREMENTS FOR PROGRAM ENTRY

• One year of high school algebra or equivalency
• Ability to use computer keyboard and mouse

READING LEVEL

Materials used within this program have an average reading level of 13th grade.

MATH LEVEL

Students should have mastered basic algebra skills.

For a description of math, see the Basic Education section of this catalog on page 20.

CURRICULUM

The Network Specialist Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER

Course No. Description                              Credits
103-103 Micro Basics MS Office 1                    3
107-162 Micro Hardware                               4
107-165 Network: Data Comm                          4
801-195 Communication-Written                       3
804-151 Math-Data Proc Logic                        3

SEMESTER TOTAL                                      17

SECOND SEMESTER

102-158 Business-Intro                               3
103-109 Micro Basics MS Office 2                     3
107-175 Network: Data Comm                          3
107-176 Network: Administration 1                   3
107-178 Network: Network Hardware                    2
801-197 Reporting-Technical                          3

SEMESTER TOTAL                                      17

THIRD SEMESTER

107-186 Network: Administration 2                   4
107-188 Network: Applications                        4
809-197 Society-Amer Contemp                         3
809-199 Psychology-Human Relations                   3
ELECTIVE                                            3

SEMESTER TOTAL                                      17

FOURTH SEMESTER

107-192 Micro Document/Training                      4
107-196 Network: Administration 3                    4
107-198 Network: Internship                         3
809-195 Economics                                   3
ELECTIVE                                            3

SEMESTER TOTAL                                      17

SUGGESTED ELECTIVES for this program include: Microprocessing-Visual Basic (107-172), Micro-Hardware Troubleshooting (107-177).

This program is fully eligible for financial aid.
These courses provide the opportunity for the student to develop the knowledge, skills, and understanding of:

107-162 MICRO HARDWARE, function, installation, and configuration of basic microcomputer hardware components including peripheral devices; basic maintenance procedures; use of diagnostic and utility software; memory management; and telecommunications concepts. (Prerequisite: 107-161 or 107-165).

107-165 NETWORK: DATA COMMUNICATION 1, computer information science concepts, the architecture and configuration of computer operating systems, and the transmission of data between computer systems.

107-175 NETWORK: DATA COMMUNICATION 2, Lan architectures, data communication protocol analysis, TCP/IP addressing and the Internet, voice/data/video integration, WAN service alternatives, and Internetworking. (Prerequisite: 107-165).

107-176 NETWORK: ADMINISTRATION 1, user accounts, password security, login scripts, spooled print services, directory services, resource rights, file rights, server based resources, and peer-to-peer networks. (Prerequisite: 107-165).

107-178 NETWORK: NETWORK HARDWARE, LAN cabling systems (coaxial, UTP, STP, fiber optic), network interface cards, file server hardware, network peripherals, UPS systems, file backup systems, and diagnostic tools. (Prerequisite: 107-162).

107-186 NETWORK: ADMINISTRATION 2, UNIX, directory services, NOS installation, domains, multi-vendor networks, DHCP, server troubleshooting and tuning, host networks (AS/400). (Prerequisite: 107-175, 107-176).

107-188 NETWORK: APPLICATIONS, copyright and licensing, shared software, client server applications, email, GroupWare, HTML applications, Java applets. (Prerequisite: 107-176).

107-192 MICRO DOCUMENTATION/TRAINING, developing technical and nontechnical software documentation; documenting cost/benefit analyses, projects, and proposals; formal and informal training exercises; and documenting software and hardware needs and specifications. (Prerequisite: last semester in program).

107-196 NETWORK: ADMINISTRATION 3, voice/data integration, network management, firewalls and proxy servers, business uses of the Internet, intranets and extranets, document archival and retrieval, data warehousing and mining. (Prerequisite: 107-186, 107-188).

107-198 NETWORK: INTERNSHIP, individual on-the-job training: consulting with users in design, development, testing, debugging, and documentation problems; training in uses of network facilities; and/or configuring and installing network hardware and software. (Prerequisite: last semester in program).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Nursing Assistant  Program Code 305101

TECHNICAL DIPLOMA-120 HOURS, 3 CREDITS
Offered throughout the District. For more information, call the Green Bay campus at (920)498-5530 or (920)498-5434, the Marinette campus at (715)735-9361 or the Sturgeon Bay campus at (920)743-2207, or (800)422-NWTC.

PROGRAM DESCRIPTION
Nursing Assistants assist in the care of sick and injured patients under the supervision of the nursing and/or medical staff.

Graduates of this program will be able to:
• Obtain employment as a Nursing Assistant or Home Health Aid
• Display behavior which supports and promotes clients rights.
• Perform basic nursing/personal care skills.
• Assist clients in attaining and maintaining independence.
• Interact effectively with clients experiencing dementias.
• Interact on a one-to-one basis with clients, with sensitivity to their emotional, social and mental health.
• Pass the written exam for the Nursing Assistant Registry.

This program is approved by the Wisconsin Department of Health and Family Services.

REQUIREMENTS FOR PROGRAM ENTRY
• Be at least 16 years old
• Have a medical examination satisfactorily completed within three months before entering program
• Placement in the NWTC mathematics and reading tests

READING LEVEL
Materials used within this program have an average reading level of 10th grade.

MATH LEVEL
Students should have mastered basic math skills.
For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as a Nursing Assistant or Home Health Aide. Individuals with abuse records may not be eligible for employment in nursing homes.

NURSING ASSISTANT: performs simple basic nursing tasks under the supervision and direction of the Registered Nurse in a nursing home, home health environment, and hospital setting.

HOME HEALTH AIDE: performs simple basic nursing tasks under the supervision and direction of the Registered Nurse in a home health environment.

Individuals with criminal abuse, theft, or misuse of property records are denied access to nursing homes and therefore cannot complete this program.

CURRICULUM
The Nursing Assistant Technical Diploma is a 120-hour program. Upon graduation, a student will have completed three credits.

FIRST SEMESTER
Course No. Description Credits
510-355 Nursing Assistant-Basic 3
SEMESTER TOTAL 3

Some employers do provide tuition scholarships; call (920) 498-5434 for information.

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is not eligible for financial aid.
COURSE DESCRIPTIONS
This course provides an opportunity for the student to develop the knowledge, skills, process, and understanding of:

510-355 NURSING ASSISTANT-BASIC
...preparation for employment as an entry level nursing assistant and home health aide in a health care facility for selected tasks under the supervision of a licensed nurse. (Prerequisite: admission to program).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
PROGRAM DESCRIPTION
Nursing - Associate Degree graduates plan, provide, and evaluate patient care. They act as liaisons between physicians, other health care workers, and the patient. They supervise other health care providers.

Graduates of this program will be able to:
• Pass NCLEX-RN at or above the State or National average.
• Transfer credits from ADN to BSN programs.
• Acquire employment as a Registered Nurse.
• Demonstrate the roles & competencies required of the RN as described by the NLN Council of Associate Degree Programs.

The Nursing-Associate Degree program is accredited by the National League for Nursing (NLNAC) and Wisconsin State Board of Nursing. National League for Nursing (NLNAC) Accrediting Commission 350 Hudson St. New York, NY 10015 (212)989-9393

Wisconsin Board of Nursing Dept. of Regulation & Licensing 1400 East Washington St. P.O. Box 8935 Madison, WI 53708-8935 (608)266-2112

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent
• One year of biology, chemistry (if taken more than 5 years ago, student must take Basic Chemistry or demonstrate proficiency), algebra and advanced math or attain 80% on the NWTC mathematics placement test. If course(s) taken more than 5 yrs. ago, must attain 80% on the NWTC tests.
• Minimum standard composite score of 20 on the ACT assessment.
• If math or reading is 16 or below, remediation is required.
• Complete an interview or orientation
• Have satisfactorily completed a medical examination within three months before beginning the program
• Current CPR card required the first day of the first nursing course.
• Nursing assistant skills desirable.
• Keyboarding skills recommended.

Grades of this program are eligible to take the Wisconsin State Board Examination for licensure as a Registered Nurse (RN).

Individuals with criminal records may be ineligible for licensure.

Individuals with criminal abuse records may be ineligible for employment in nursing homes.

Individuals with criminal abuse, theft or misuse of property records are denied access to nursing homes and therefore can not complete this program.

Grades are eligible to apply for direct transfer of credit to the nursing program at the University of Wisconsin-Green Bay, and private colleges and universities.

READING LEVEL
Materials used within this program have an average reading level of 14th grade.

MATH LEVEL
Students should have mastered basic math plus algebra skills. For a description of basic math and algebra skills, see the Basic Education section of this catalog on page 20.

Note: A student who does not meet the above requirements should consult an NWTC counselor about ways to meet deficiencies through testing or course work.

CURRICULUM
The Nursing Associate Degree program is a two-year, one-summer, six-semester program. Upon graduation a student will have completed 72 credits.

SUMMER OR PRIOR SEMESTER

<table>
<thead>
<tr>
<th>Course No. Description</th>
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<tbody>
<tr>
<td>806-163 Chemistry-BioOrganic</td>
<td>3</td>
</tr>
<tr>
<td>806-182 Anatomy/Physiology 1</td>
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SEMMESTER TOTAL 6

FIRST SEMESTER

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<tr>
<td>510-113 Nursing Process 1</td>
<td>3</td>
</tr>
<tr>
<td>510-114 Nursing Process 2</td>
<td>4</td>
</tr>
<tr>
<td>801-196 Communication-Interpers</td>
<td>3</td>
</tr>
<tr>
<td>806-187 Anatomy/Physiology 2</td>
<td>3</td>
</tr>
<tr>
<td>809-198 Psychology-Intro</td>
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SEMMESTER TOTAL 16

SECOND SEMESTER

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</tr>
<tr>
<td>510-122 Nursing Process 4</td>
<td>4</td>
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<tr>
<td>801-195 Communication-Written</td>
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<td>886-194 Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>809-190 Human Growth/Development</td>
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SEMMESTER TOTAL 17

THIRD SEMESTER

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<tr>
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<td>510-134 Nursing Process 6</td>
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<tr>
<td>510-136 Nursing Pharmacology-Appl</td>
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<td>510-141 Nursing Process 7</td>
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<td>809-196 Sociology-Intro</td>
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SEMMESTER TOTAL 17

FOURTH SEMESTER

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<tr>
<td>510-152 Nursing Process 9</td>
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<td>ELECTIVE</td>
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</table>

SEMMESTER TOTAL 16

** 510-111 Introduction AD Nursing-2 credits
Second & Summer semesters are combined for a student beginning in August.

*No final grade lower than a C is acceptable in the nursing or natural science courses. A student must repeat the particular course with C or better final grade to continue in or graduate from this program. If the course is sequential, the successful retake must occur before continuing the sequence.

Licensed Practical Nurses may receive advanced standing for nursing courses in the first year of the program. Call (920)498-5530 for information.

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

510-113 NURSING PROCESS 1...health care delivery system; the nursing profession and various nursing roles; the nursing process; and the concepts of health promotion, wellness, cultural awareness, and applied communication. (Prerequisite: 806-163, 806-182).

510-114 NURSING PROCESS 2...client oriented information systems, basic biopsychosocial needs of clients, determination of health status, identification of health resources, and application of the nursing process to meet these needs. (Prerequisite: 510-113, current CPR certificate).

510-120 NURSING PROCESS 3...trends/issue in maternal child nursing; the healthy and at risk woman, her newborn, and family, during pregnancy, labor/delivery, and following delivery; and family planning. (Prerequisite: completion of 1st semester, current CPR certificate).

510-122 NURSING PROCESS 4...the nursing process used to meet patient's psychosocial needs; and role of the nurse as provider of care, manager of care, and member of discipline of nursing. (Prerequisite: Complete 1st semester, current CPR certificate).

510-132 NURSING PROCESS 5...the nursing process as a method to meet needs of clients with surgical requirements, fluid and electrolyte imbalance, respiratory dysfunction, altered cellular metabolism, and endocrine dysfunction, excluding diabetes mellitus. (Prerequisite: Complete 2nd semester, current CPR certificate).

510-134 NURSING PROCESS 6...using the nursing process in meeting the biopsychosocial needs of children/families, preventing illness, restoring health, and implementing teaching/learning needs. (Prerequisite: completion of 2nd semester).

510-136 NURSING PHARMACOLOGY-APPLIED...application of the nursing process to introduce safe clinical drug therapy. (Prerequisite: completion of 1st semester).

510-141 NURSING PROCESS 7...nursing process as a method to meet needs of clients with endocrine dysfunction (specifically diabetes, mellitus), peripheral vascular disease, hypertension, alterations in coronary conduction, cardiac disease, urological disorder, gastrointestinal dysfunctions, and visual impairment. (Prerequisite: 510-132, 510-134 or concurrent).

510-150 NURSING PROCESS 8...nursing process used to meet the client's biopsychosocial needs in neurology, rehabilitation, mobility, burns, emergency care; member of the nursing discipline, valuing ethics, legal guidelines, professional practice, and change agent behaviors. (Prerequisite: completion of 3rd semester).

510-152 NURSING PROCESS 9...attitudes toward aging, manager of care role, biopsychosocial needs of older adults, assessment, clients with complex needs, community-based health care systems, and home health care management. (Prerequisite: 510-150).

510-154 NURSING PROCESS 10...refinement of the NLN roles of the nurse in a semi-dependent realistic clinical environment. Employability traits, role transition strategies, and NCLEX-RN preparation. (Prerequisite: 510-152).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Office Assistant Program Code 311061

TECHNICAL DIPLOMA - ONE YEAR
Offered at the Green Bay and Marinette campuses. For more information, call the Green Bay campus at (920)498-5440, the Marinette campus at (715)735-9361 or (800)422-NWTC Ext. 440.

PROGRAM DESCRIPTION
Office Assistant prepares students for entry-level office positions. Skills are developed in word processing, machine transcription, telephone, records management, machine calculation, and keyboarding. Credits earned in the program can be applied to the Administrative Assistant Associate Degree program.

Grades of this program will be able to:
• Provide customer service.
• Manage information.
• Maintain financial records.
• Create presentation materials.
• Maintain supplies and equipment.
• Arrange travel.
• Process documents.
• Coordinate meeting activities.
• Process mail.

REQUIREMENTS FOR PROGRAM ENTRY
• Basic math
• Demonstrate a keyboarding skill of 20 wpm using the TOUCH method.

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

CURRICULUM
The Office Assistant Technical Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 32 credits.

FIRST SEMESTER
Course No. Description Credits
105-101 Business Math 3
106-103 Information Process Prin 3
106-105 Keyboard Skillbuilding 1 2
106-108 Word Processing Application 3
106-153 Professional Profile 3
106-172 Telephone Skills 1
801-387 Grammar-Business Appl 1
SEMESTER TOTAL 16

SECOND SEMESTER
Course No. Description Credits
101-310 Bookkeeping 1-Office 2
106-137 Software Appl 1-Office 3
106-143 Office Techniques-Applied 3
106-152 Records Management 2
106-156 Keyboard Skillbuilding 2 2
106-159 Document Formatting 3
801-385 Communicating Writing 1
SEMESTER TOTAL 16

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

101-310 BOOKKEEPING 1 ...accounting cycle, journalizing, posting, and end-of-cycle activities.

105-101 BUSINESS MATH ...percentage, interest, promissory notes, borrowing, credit charges, payroll records and deductions, property tax, sales tax, inventory valuation, depreciation, mark-up, cash and trade discounts, stocks and bonds, and financial statement analysis.

106-103 INFORMATION PROCESSING PRINCIPLES ...information processing cycle and workflow, terminology, hardware, software, ergonomics, security, systems, Internet, and career opportunities.

106-105 KEYBOARD SKILLBUILDING 1 ...skill development on the alphabetic keyboard to a minimum of 35 words per minute and on the ten-key pad to a minimum of 170 numbers per minute using analytic/diagnostic software. (Prerequisite: 20 WPM touch keyboarding).

106-108 WORD PROCESSING APPLICATIONS ...enhancement of keyboarding skills and basic document formatting techniques while applying decision-making skills; word processing functions used to create, revise, and print documents. (Prerequisite: 30 WPM touch keyboarding, OR concurrent with 106-105).

106-137 SOFTWARE APPLICATIONS 1-OFFICE ...functions of the Windows NT/95 operating system, Microsoft Excel 97 worksheets, and Microsoft PowerPoint 97 presentation graphics. (Prerequisite: Basic Windows NT/95).

106-143 OFFICE TECHNIQUES-APPLIED ...processing documents, maintaining supplies/equipment, processing mail, coordinating meeting activities, and arranging travel. (Prerequisite: all prior program courses).

106-152 RECORDS MANAGEMENT ...organization and management of records departments, staffing, and equipment; and major systems of classification: alphabetic, numeric, geographic, subject, chronologic, and micro systems.

106-153 PROFESSIONAL PROFILE ...workplace attributes such as attitude, appearance, habits, and techniques for success and promotion; leadership and organizational skills; and current trends/issues in the workplace.

106-156 KEYBOARD SKILLBUILDING 2 ...skill development on the alphabetic keyboard to a minimum of 45 words per minute and on the ten-key pad to a minimum of 195 numbers per minute using analytic/diagnostic software. (Prerequisite: 106-105).

106-159 DOCUMENT FORMATTING ...enhancement of keyboarding skills and advanced document formatting while applying decision-making skills; advanced word processing functions: macros, merges, sort/select, and tables. (Prerequisite: 106-108).

106-172 TELEPHONE SKILLS ...using the telephone effectively and efficiently in the world of work; telephone features, equipment, message taking, cellular technology, pagers, and electronic and voice mail.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Paralegal  Program Code 101101

ASSOCIATE DEGREE - FIVE YEARS, PART-TIME, WITH SHORTER OPTIONS AVAILABLE
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5616 or (800)422-NWTC ext. 616.

PROGRAM DESCRIPTION
The Paralegal program prepares students to research and draft legal documents for use in legal transactions.

Graduates of this program will be able to:
• Describe law office systems and organization.
• Describe state and federal court systems.
• Identify roles and responsibilities of lawyers and paralegals.
• Compare civil, criminal, and administrative procedures.
• Use legal terminology.
• Conduct client interviews.
• Conduct investigations.
• Organize facts and evidence.
• Prepare legal documents.
• Conduct legal and factual research.
• Use correct citation form.
• Comply with rules regarding unauthorized practice of law and professional responsibility.

REQUIREMENTS FOR PROGRAM ENTRY
• Basic math
• Ability to use computer keyboard
• Successful completion of reading and language assessment prior to admission

READING LEVEL
Materials used within this program have an average reading level of 14th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

The Paralegal Program is accredited by the American Bar Association (ABA). American Bar Association, 750 North Lake Shore Drive, Chicago, IL 60611 Phone: (312)988-5618.

This program is fully eligible for financial aid.

EMPLOYMENT POTENTIAL
A graduate of this program will have the potential for employment as Paralegal or Legal Assistant.

A Paralegal position requires knowledge of law and legal procedures in order to perform a variety of legal tasks.
• Render assistance to lawyers engaged in legal research and litigation
• Prepare, interpret, and organize legal documents
• Select, compile, and use information from digests, encyclopedias, and practice manuals
• Analyze procedural problems that involve independent decisions
• Interview clients and witnesses

A graduate may be employed by a private law firm, insurance company, corporation, bank, private business, legal clinic, agency of a federal, state, or local government; legal service or legal aid office; law departments; special interest group or association; criminal law office; service company or consulting firm; or as a freelance paralegal.

With additional education and/or work experience, graduates may find other opportunities for employment:
• Law Librarian
• Law Office Administrator
• Law Office Manager
• Paralegal Supervisor
• Paralegal Instructor

CURRICULUM
The Paralegal Associate Degree is offered in the day and in the evening. It is a five-year, ten-semester program, with options to complete in a shorter period of time. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER
Course No. Description Credits
102-150 Law-Business 3
110-101 Paralegal-Intro 3
SEMESTER TOTAL 6

SECOND SEMESTER
110-102 Civil Litigation 1 3
801-175 English Composition 1 3
SEMESTER TOTAL 6

THIRD SEMESTER
110-103 Civil Litigation 2 3
110-107 Law-Corporate Intro 3
SEMESTER TOTAL 6

FOURTH SEMESTER
106-166 Information Proc Theory/App 3
890-101 Critical Thinking 3
SEMESTER TOTAL 6

FIFTH SEMESTER
101-101 Accounting Principles 3
110-150 Law-Administrative 3
SEMESTER TOTAL 6

SIXTH SEMESTER
106-141 Information Process-Legal 3
110-106 Law-Family 3
110-110 Real Estate Mechanics 3
SEMESTER TOTAL 9

SEVENTH SEMESTER
110-114 Estates Administration 3
809-195 Economics 3
SEMESTER TOTAL 6

EIGHTH SEMESTER
110-104 Legal Research 3
801-196 Communication-Oral/Interper 3
SEMESTER TOTAL 6

NINTH SEMESTER
110-105 Legal Writing 3
809-199 Psychology-Human Rel 3
ELECTIVE 3
SEMESTER TOTAL 9

TENTH SEMESTER
110-135 Paralegal Internship 2
OR
110-141 Paralegal Field Study 2
809-197 Society-Amer Contemporary 3
ELECTIVE 3
SEMESTER TOTAL 8

SUGGESTED ELECTIVES for this program include: Creditor/Debtor Relations (110-122), Paralegal Criminal Procedures (110-168), and Indian Law (110-169).
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

110-101 PARALEGAL-INTRODUCTION ...introduction to the legal profession: ethics, court system structure, legal research, and roles of the paralegal.

110-102 CIVIL LITIGATION 1 ...civil procedure in the state and federal courts, and the litigation process with emphasis on the paralegal function in investigating and gathering information, and in preparing pleadings and motions.

110-103 CIVIL LITIGATION 2 ...this course continues civil litigation procedure including discovery, trial, and appellate procedure. (Prerequisite: 110-102).

110-104 LEGAL RESEARCH ...legal research strategies, locating and updating primary and secondary legal authorities, and planning and executing manual and computer-assisted legal research. (Prerequisite: 110-101).

110-105 LEGAL WRITING ...an advanced writing course which covers various internal and external legal documents. (Prerequisite: 110-101, 110-104).

110-106 LAW-FAMILY ...this course is designed to familiarize the student with basic legal concepts involved in the area of family relations. The primary emphasis will be in the field of divorce. (Prerequisite: 110-101).

110-107 LAW-CORPORATE INTRODUCTION ...formation, operation, and dissolution of principal types of business organizations; substantive and procedural law involving business organizations.

110-110 REAL ESTATE MECHANICS ...real estate transactions and conveyances: substance and form of deeds, contracts, leases, and trusts. (Prerequisite: 102-150, 110-101).

110-114 ESTATE ADMINISTRATION ...wills, trusts, estates, and probate; techniques for fact gathering; income tax and death tax principles; use of trusts; probate; and administration of terms of wills. (Prerequisite: 102-150, 110-101).

110-135 PARALEGAL INTERNSHIP ...practical, hands-on experience in an approved office. Through the internship, the paralegal student has the opportunity to apply the theories, skills, and techniques that have been studied in the program. (Prerequisite: 40 program credits completed).

110-141 PARALEGAL FIELD STUDY ...an in-depth study of an aspect of the legal field approved by the course instructor; an alternative to internship. (Prerequisite: 40 program credits completed).

110-150 LAW-ADMINISTRATIVE ...the paralegal's role in preparation and representation of cases before administrative agencies, structure and authority of administrative agencies, procedures, and substantive state and federal administrative law. (Prerequisite: 102-150, 110-101).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Paramedic - Emergency Medical Technician

TECHNICAL DIPLOMA - ONE YEAR

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-6806 or (800)422-NWTC ext. 806.

PROGRAM DESCRIPTION

Paramedic-Emergency Medical Technician performs advanced level pre-hospital care and techniques for advanced level ambulance services. These are both private and municipal ambulance services.

Graduates of this program will be able to:
• Obtain Wisconsin Paramedic Licensure.
• Perform patient assessment.
• Ventilate patients.
• Manage trauma and medical problems.
• Communicate patient information to hospital.
• Develop paramedic-patient interaction.
• Administer medications.
• Administer intravenous therapy.
• Interpret electrocardiograms.

REQUIREMENTS FOR PROGRAM ENTRY

• Be currently licensed as an EMT in the State of Wisconsin
• Have a service affiliation with a paramedic ambulance service to complete the required field experience needed to qualify for licensure

READING LEVEL

Materials used within this program have an average reading level of 15th grade.

MATH LEVEL

Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

CURRICULUM

The Paramedic Technical Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 26 credits.

FIRST SEMESTER

<table>
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<td>531-321</td>
<td>Paramedic Clinical 1</td>
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<td>531-324</td>
<td>Paramedic Lab 1</td>
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SECOND SEMESTER

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<td>Paramedic Principles 2</td>
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Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

531-320 PARAMEDIC PRINCIPLES 1 ...roles and responsibilities of the paramedic, human systems and patient assessment, shock and fluid therapy, pharmacology, assessment/management of respiratory and cardiovascular emergencies.

531-321 PARAMEDIC CLINICAL 1 ...paramedic-patient interactions, blood samples, patient assessment, intravenous therapy, airway management, medication administration, assessment/management of respiratory emergencies in supervised clinical practice, and skill development in an acute care hospital.

531-322 PARAMEDIC PRINCIPLES 2 ...cardiovascular; neurologic; obstetric and gynecologic; soft tissue; musculoskeletal; acute medical, pediatric, and psychiatric emergencies; operational aspects of EMS. (Prerequisite: 531-320).

531-323 PARAMEDIC CLINICAL 2 ...continuation of 531-321; interpretation of electrocardiograms; assessment/management of cardiovascular, medical, trauma, pediatric, and obstetric emergencies in supervised clinical practice in an acute care hospital. (Prerequisite: 531-321).

531-324 PARAMEDIC LAB 1 ...developing advanced practical skills of assessment, medication administration, endotracheal intubation, ECG monitoring and basic trauma life support.

531-325 PARAMEDIC LAB 2 ...a continuation of Paramedic Lab 1, inducing electric therapy, advanced cardiac life support and pediatric advanced life support.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
ASSOCIATE DEGREE - TWO YEARS PLUS ONE SUMMER

Offered at the Green Bay campus. For more information, call the Green Bay Campus at (920) 498-5530 or (800)422-NWTC ext. 530.

PROGRAM DESCRIPTION
Physical Therapist Assistant program educates students to carry out patients' rehabilitation programs under the supervision of a physical therapist.

Graduates of this program will be able to:
- Be employed in the field of Physical Therapy.
- Formulate a self-directed plan for career development.
- Participate in the American Physical Therapy Association.
- Pass a state licensure examination.
- Implement a comprehensive treatment program as established by a physical therapist.
- Provide psychosocial support.
- Modify methods and techniques within the physical therapist's established care plan in compliance with practice setting.
- Produce documentation to support the delivery of physical therapy services.
- Use support personnel.
- Make ethical decisions.
- Plan treatment intervention to meet the individual needs and responses of the patient within the PTA scope of practice.
- Manage time and financial resources.
- Address prevention, wellness, and health promotion needs of individuals, groups, and communities.
- Contribute to the overall effective management of the physical therapy department.
- Participate in discharge planning and assessment of additional services.
- Coordinate with the Physical Therapist and other health care professionals.
- Analyze professional literature and research.
- Perform assessments.
- Use data resources and make clinical decisions.
- Provide professional and continuing education to staff, clients, and community.
- Integrate individual and cultural differences into the delivery of physical therapy services.
- Correlate normal and abnormal physiologic functions of the human body.
- Correlate the structure and function of the human body.
- Function within the changing health care environment.

A Student will be required to purchase a name tag, provide their own transportation to clinical facilities, pay for liability insurance for each clinical course, and cover any other expenses related to their clinical experiences.

The first year general education and science courses may be taken at Fox Valley Technical College in Appleton; however, all applications must be made through Northeast Wisconsin Technical College.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as a Physical Therapist Assistant.

PHYSICAL THERAPIST ASSISTANT: carries out the program of exercise, re-teaches activities of daily living, conducts treatment using special therapeutic equipment, assists the physical therapist in evaluations and tests, and observes and reports patient's responses.

The Physical Therapist Assistant Program is fully accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE/APTA) American Physical Therapy Association 111 N. Fairfax Street Alexandria, VA 22314 (703) 684-2762

REQUIREMENTS FOR PROGRAM ENTRY
- Minimum standard composite score of 20 on the ACT assessment
- High school diploma or equivalency
- High school courses which include algebra (or attain a minimum of 80% on the NWTC algebra examination), one year of biology or equivalent, one year of advanced biology, chemistry, physics, or equivalent; all with grades of C or better
- Have a medical examination satisfactorily completed within three months before entering the program

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

NOTE: A student who does not meet the above requirements should consult with an NWTC counselor about ways to make up any deficiencies through testing or course work.

No final grade lower than C is acceptable in any of the courses marked with an asterisk. A student must repeat the particular course to achieve a C or better final grade in order to continue in or graduate from this program. If the course is segmented, the successful retake must occur before continuing the sequence.

CURRICULUM
The Physical Therapist Assistant Associate Degree is a two-year, one-summer, five-semester program. Upon graduation, a student will have completed 72 credits.

FIRST SEMESTER
Course No. Description Credits
*524-112 Physical Therapy Asst-Intro 2
*524-114 Physical Therapy Asst 1 3
*524-118 Pathology Concepts 2
801-195 Communication-Written 3
806-116 Physics-PTA 4
806-182 Anatomy/Physiology 1 3
SEMESTER TOTAL 17

SECOND SEMESTER
*524-113 Kinesiology 3
*524-124 Physical Therapy Asst 2 4
801-196 Communication-Interpers 3
*806-188 Anatomy/Physiology 2-PTA 3
809-198 Psychology-Intro 3
SEMESTER TOTAL 16

SUMMER SEMESTER
*524-132 Physical Therapy Asst 3 3
*524-133 Pediatrics 2
809-196 Sociology-Intro 3
SEMESTER TOTAL 8

THIRD SEMESTER
*524-134 Clinical Problems 1 1
*524-137 Physical Ther Asst 1A-Fldwk 1
*524-138 Physical Ther Asst 1B-Fldwk 1
*524-140 Physical Therapy Asst 4 5
*524-144 Physical Therapy Asst 5 4
809-195 Economics 3
ELECTIVE 1
SEMESTER TOTAL 16

FOURTH SEMESTER
*524-136 Health Care Systems 1
*524-145 Clinical Problems 2 1
*524-147 Physical Ther Asst 2A-Fldwk 3
*524-148 Physical Ther Asst 2B-Fldwk 3
*524-149 Ethical Decision Making 1
804-182 Computer: Applications 1
ELECTIVE 1
SEMESTER TOTAL 15

SUGGESTED ELECTIVES: Sports Medicine/ Athletic Training (524-146), and Fitness Test/ Prescription (524-151).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

524-112 PHYSICAL THERAPIST ASSISTANT INTRODUCTION...profession, APTA, physical therapy personnel, practice settings, accreditation, rehabilitation teams, legal practice, problem oriented medical system, SOAP note writing, narrative note writing, terminology, abbreviations, and progress notes. (Prerequisite: admission to PTA program).

524-113 KINESIOLOGY...the application of human anatomy, normal functional motion, techniques of goniometry, manual muscle testing, analysis of individual posture and gait patterns. (Prerequisite: 806-187, completion of 1st semester).

524-114 PHYSICAL THERAPIST ASSISTANT 1...physical therapy procedures relating to activities of daily living, patient care, assistive devices, vital signs, medical asepsis, body mechanics, correct body positioning, transfers, and basic gait patterns. (Prerequisite: admission to PTA program).

524-118 PATHOLOGY CONCEPTS...introduction to medical and pathological conditions commonly encountered in physical therapy, etiology, symptomatology, treatment concepts, and medical terminology. (Prerequisite: 806-182).

524-124 PHYSICAL THERAPIST ASSISTANT 2...theory, principles, and technical skills of modalities used in physical therapy, hydrotherapy, cryotherapy, therapeutic heat, ultrasound, ultraviolet, electrical stimulation, intermittent compression, traction, paraffin, biofeedback, and massage. (Prerequisite: 806-187, completion of 1st semester).

524-132 PHYSICAL THERAPIST ASSISTANT 3...principles and techniques of therapeutic exercise, specific pathophysiological conditions, and related therapeutic exercise programs. (Prerequisite: completion of 2nd semester).

524-133 PEDIATRICS...normal and abnormal human development, pediatric pathologies and dysfunctions, and physical therapy treatment approaches. (Prerequisite: completion of 2nd semester).

524-134 CLINICAL PROBLEMS 1...introduction to Medicare documentation, pharmacology, diversity in clinical practice, supervisory and department functions, importance of the health professional/patient relationship, writing progress notes. (Prerequisite: 524-138, summer semester completed).

524-136 HEALTH CARE SYSTEMS...current concepts, philosophy, and application of health care systems in the US and their relationships to the practice of physical therapy and health care financing models. (Prerequisite: completion of 3rd semester).

524-137 PHYSICAL THERAPIST ASSISTANT 1A-FIELDWORK...part-time clinical experience to provide learners the opportunity to apply the theoretical and technical abilities in the clinical setting that are expected of entry-level physical therapist assistants. (Prerequisite: 524-134, summer semester completed).

524-138 PHYSICAL THERAPIST ASSISTANT 1B-FIELDWORK...part-time clinical experience to provide learners the opportunity to apply the theoretical and technical abilities in the clinical setting that are expected of entry-level physical therapist assistants. (Prerequisite: 524-134, summer semester completed).

524-139 PHYSICAL THERAPIST ASSISTANT 2A-FIELDWORK...theoretical and technical abilities required in clinical settings for integration and refinement of practice as a physical therapist assistant. (Prerequisite: 524-145, completion of 3rd semester).

524-139 PHYSICAL THERAPIST ASSISTANT 2B-FIELDWORK...theoretical and technical abilities required in clinical settings for integration and refinement of practice as a physical therapist assistant. (Prerequisite: 524-145, completion of 3rd semester).

524-139 PHYSICAL THERAPIST ASSISTANT 3...introduction to Medicare documentation, pharmacology, diversity in clinical practice, supervisory and department functions, importance of the health professional/patient relationship, writing progress notes. (Prerequisite: 524-138, summer semester completed).

524-139 PHYSICAL THERAPIST ASSISTANT 4...rationale for and physical therapy techniques used in rehabilitation of persons with long term disabilities, and overview of roles and goals of various members of rehabilitation team. (Prerequisite: summer semester completed).

524-139 PHYSICAL THERAPIST ASSISTANT 5...assessment and treatment of orthopedic/musculoskeletal disorders, wound and burn care, geriatric conditions, and psychosocial aspects of the aging process and terminal illness. (Prerequisite: summer semester completed).

524-140 PHYSICAL THERAPIST ASSISTANT 2...introduction to Medicare documentation, pharmacology, diversity in clinical practice, supervisory and department functions, importance of the health professional/patient relationship, writing progress notes. (Prerequisite: 524-138, summer semester completed).

524-145 CLINICAL PROBLEMS 2...final discussion of clinical situations, interviewing and job-seeking skills, individual research project regarding a specific clinical problem, and a competency based written final examination. (Prerequisite: 524-148, completion of 3rd semester).

524-147 PHYSICAL THERAPIST ASSISTANT 2A-FIELDWORK...theoretical and technical abilities required in clinical settings for integration and refinement of practice as a physical therapist assistant. (Prerequisite: 524-145, completion of 3rd semester).

524-148 PHYSICAL THERAPIST ASSISTANT 2B-FIELDWORK...theoretical and technical abilities required in clinical settings for integration and refinement of practice as a physical therapist assistant. (Prerequisite: 524-145, completion of 3rd semester).

524-149 ETHICAL DECISION MAKING...elements of ethics, types of ethical distress and dilemmas encountered in health care, process of problem solving in ethical decision making. (Prerequisite: completion of 3rd semester).
Police Science

ASSOCIATE DEGREE - TWO YEARS

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-6806 or (800)422-NWTC ext. 806.

PROGRAM DESCRIPTION

Police Science covers the law enforcement field plus physical and behavioral sciences to meet the demands of the police profession. Areas of study include criminal investigation, traffic law, patrol procedures, and scientific crime laboratory.

Graduates of this program will be able to:
• Be prepared for entry level positions in protective services.
• Write reports.
• Apply courtroom testimony techniques.
• Demonstrate knowledge of laws and principles of arrest, search & seizure.
• Demonstrate understanding of relevant state statutes.
• Interpret selected theories of criminal behavior.
• Describe the structure and procedures of the court system.
• Describe the structure and procedures of the police organization.
• Describe the structure and procedures of corrections.
• Describe the structure and procedures of the juvenile system.
• Investigate an accident.
• Interview suspects and witnesses.
• Process a crime scene.
• Apply investigation techniques.
• Contrast the various police community relations programs.
• Make appropriate judgments on risk and other factors of police situations.
• Describe various patrol tactics.
• Contrast major social institutions within American Society.
• Demonstrate effective communication skills.
• Apply basic math skills.
• Demonstrate basic computer skills.

STUDENTS SEEKING CERTIFICATION CAN ALSO:
• Operate vehicles in emergency situations.
• Demonstrate arrest, search, and seizure practices.
• Apply first responder techniques.
• Demonstrate safe, proficient, and legal firearms practices.

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent
• Good writing and communication skills
• Strong organizational skills

READING LEVEL

Materials used within this program have an average reading level of 13th grade.

MATH LEVEL

Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL

A graduate of this program will have potential for employment as Police Officer, Deputy Sheriff, DNR Officer, State Trooper, Military Law Enforcement Officer, Private Investigator, Security Guard, or Correctional Officer.

POLICE OFFICER: performs general traffic and law enforcement duties at the municipal level.

DEPUTY SHERIFF: performs general traffic and law enforcement duties, jailer, and telecommunications responsibilities at the county level.

DNR OFFICER: enforces fish, game, forest, and environmental laws at the state level.

STATE TROOPER: performs traffic and law enforcement duties at the state level.

MILITARY LAW ENFORCEMENT OFFICER: performs criminal investigations, is responsible for traffic assignments, patrol, and general law enforcement duties in any branch of the military service at installations, forts, and bases.

PRIVATE INVESTIGATOR: conducts criminal and non-criminal investigations for private businesses and industry.

SECURITY GUARD: patrols and investigates for retail business and private industrial plants.

CORRECTIONAL OFFICER: is assigned to security and general duties in a correctional institution.

A student who completes the NWTC Police Science Associate Degree program, and the three specific electives, will be eligible for state certification as a Law Enforcement Officer upon graduating and being employed by a Wisconsin Law Enforcement Agency.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Police Administrator
• Chief Deputy
• State Agent
• Federal Agent

CURRICULUM

The Police Science Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER

Course No. | Description | Credits
--- | --- | ---
106-145 | Keyboarding | 1
504-111 | Police Organization/Admin | 3
504-112 | Police Patrol Procedures | 3
504-116 | Criminal Justice Intro | 3
801-196 | Communication-Interpers | 3
804-152 | Math-Protective Services | 3

SEMINER TOTAL | 16

SECOND SEMESTER

504-140 | Criminal Investigation | 3
504-172 | Criminology | 3
801-195 | Communication-Written | 3
801-198 | Speech | 3
804-175 | Computer: Police | 2
809-199 | Psychology-Human Relations | 3

SEMINER TOTAL | 17

THIRD SEMESTER

504-120 | Criminal Law | 3
504-131 | Interview/Interr/Confess | 3
504-132 | Courts/Jurisdiction | 3
801-170 | Writing-Protective Serv | 2
806-151 | Science-Police | 3

ELECTIVE | 3

SEMINER TOTAL | 17

FOURTH SEMESTER

504-121 | Law-Control-Traffic | 3
504-142 | Arrest/Search/Seizure | 3
504-143 | Crime Lab-Scientific | 3
504-144 | Police-Community Rel | 3
809-197 | Society-Amer Contemp | 3

ELECTIVE | 3

SEMINER TOTAL | 18

SUGGESTED ELECTIVES: Narcotics and Vice Investigation (504-151), Youth and the Changing Community (504-154), Security-Retail/Industrial (504-190), Telecommunicator-Public Safety (504-160), and Law Enforcement Internship (504-176). All Corrections Science core courses are also recommended electives. Electives required for State certification are EVOC Driving/First Responder Medical Training (504-174), Defense & Arrest Tactics (DAAT) Training (504-175), and Firearms Training (504-177).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide the opportunity for a student to develop the knowledge, skills, process, and understanding of:

504-111 POLICE ORGANIZATION/ADMINISTRATION...structure of police departments, policies, procedures, behaviors, tasks and goals; officer's role, ethics, discretion, and decision making in a democratic society; administrative concepts of leadership, management, and organizational principles.

504-112 POLICE PATROL PROCEDURES...types of patrol and philosophy, concepts, and functions; types of calls and procedures; information gathering and reporting; patrol responsibility at crime scenes; courtroom procedures; and community relations.

504-116 CRIMINAL JUSTICE-INTRODUCTION...introductory course on causes of crime, criminal law, law enforcement, courts, and corrections on the local, state, and federal levels.

504-120 CRIMINAL LAW...criminal law characteristics; terminology, history, principles, and philosophy of criminal law; use of the Wisconsin Statute Book; and examination of selected criminal offenses and identifying elements.

504-121 LAW/CONTROL-TRAFFIC...fundamentals of evaluating the traffic law, process of issuing traffic citations, investigating and completing traffic accident reports; the process for safe traffic stops: low and high risk.

504-131 INTERVIEWS/INTERROGATIONS/CONFESSIONS...process of lawfully conducting interviews and interrogations, and securing admissible confessions in accordance with individuals' constitutional rights with emphasis on U.S. court cases; verbal and nonverbal communication techniques.

504-132 COURTS/JURISDICTIONS...development of the American judicial system, the Federal and Wisconsin court structure, Wisconsin judicial rules and procedures from complaint to sentencing as they impact police or correctional officers.

504-140 CRIMINAL INVESTIGATION...principles of criminal investigation; focus on techniques of an investigation from the preliminary investigation interview, evidence procedures, and specific crime investigation.

504-142 ARREST/SEARCH/SEIZURE...arrest and search and seizure of persons, places, and things with or without warrant; cause and procedure to obtain and execute warrants; exclusionary rule and effects of illegal actions.

504-143 CRIME LABORATORY-SCIENTIFIC...processing of crime scenes and use of forensic science in criminal investigations; emphasis on collection, preservation, and court presentation of fingerprint, firearm, impression, trace, body fluid, and document evidence.

(Prerequisite: 504-140, 806-151).

504-144 POLICE-COMMUNITY RELATIONS...discrimination, police role, community awareness and involvement, professionalism in policing, police-citizen partnerships, work-related stress causes, problem-oriented policing, principles of crime prevention, and the problems of a culturally diverse society.

504-172 CRIMINOLOGY...nature, extent, and distribution of crime in the United States; biological, psychological, and sociological aspects of crime causation; and legal and political implications of crime prevention and control.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Power Engineering and Boiler Operator

PROGRAM DESCRIPTION
Power Engineering and Boiler Operator prepares students to manage, operate, and control low and high-pressure boilers and auxiliary systems in factories, plants and buildings.

Graduates of this program will be able to:
- Define industry safety standards and concepts.
- Explain operation of power engineering equipment.
- Prepare to complete the NLIULPE certification exam.
- Describe boiler operation effects on emission.
- Describe water treatment fundamentals related to power engineering equipment.
- Describe power engineering related to control fundamentals.
- Recognize power engineering related equipment type and terminology.
- Identify power engineering firing methods for different fuel types.
- Apply natural science fundamentals to power engineering industry.
- Relate electricity basics and gem principles to power engineering.

REQUIREMENT FOR PROGRAM ENTRY
- High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic math skills.
For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have potential for employment as Power Engineer/Boiler Operator, Boiler Service Technician, Boiler Installer, or Boiler Chemical Sales Representative.

POWER ENGINEER/BOILER OPERATOR:
controls the operation of a boiler by reading gauges and varying fuel and water inputs.

BOILER SERVICE TECHNICIAN:
services and repairs valves, fittings, and boiler tubes that are leaking or malfunctioning.

BOILER INSTALLER:
installs boilers, piping, controls, and auxiliary equipment.

BOILER CHEMICAL SALES REPRESENTATIVE:
tests boiler water for chemical content and recommends additives to correct the water chemical content.

With additional education and/or work experience, graduates may find other opportunities for employment.
- Boiler Fuel Consultant
- Boiler Inspector
- Field Engineer
- Power Plant Supervisor

CURRICULUM
The Power Engineering and Boiler Operator Technical Diploma is a two-year part-time program. Upon graduation, a student will have completed 13 credits.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>196-348</td>
<td>Power House-Supervision</td>
<td>1</td>
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<tr>
<td>403-338</td>
<td>Power House-Blueprint Rdg</td>
<td>1</td>
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<tr>
<td>413-345</td>
<td>Power House-Control Sys</td>
<td>1</td>
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<tr>
<td>413-347</td>
<td>Power House-Electric Sys</td>
<td>2</td>
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<tr>
<td>428-331</td>
<td>Power Eng 1-3rd Class</td>
<td>1</td>
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<td>428-332</td>
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<td>428-333</td>
<td>Power Eng 3-3rd Class</td>
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<td>428-337</td>
<td>Power House-Economics</td>
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<td>428-341</td>
<td>Power Eng 1-4th Class</td>
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<td>428-342</td>
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<tr>
<td>804-315</td>
<td>Math-Basic</td>
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</tbody>
</table>

SEMESTER TOTAL 13

NOTE: A two-year diploma completion schedule is only possible if adequate course enrollment is attained.

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is not eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

403-338 POWER HOUSE-BLUEPRINT READING
...footings and foundations, floor plans, elevations, below-grade piping, above-grade piping, isometric piping diagrams, schedules and details, electrical floor plans, ventilating, and air conditioning.

413-345 POWER HOUSE-CONTROL SYSTEMS
...boiler controls, ignition systems, analog logic symbols, burner management sequencing, flame rod and optical systems, boiler start-up/shut down, problem solving and troubleshooting techniques.

413-347 POWER HOUSE-ELECTRICAL SYSTEMS
...principles of electricity, tools required to troubleshoot, safety control, low-volt systems, utility provided power, troubleshooting power systems, motors and controller, wiring methods, transformers, and testing equipment.

428-331 POWER ENGINEER 1-3RD CLASS
...thermodynamics, fluids and mechanical basics, boiler classification, boiler construction, boiler fittings, feedwater pumps, and draft.

428-332 POWER ENGINEER 2-3RD CLASS
...firing methods, boiler rating and efficiency, boiler operation, inspection and repair, boiler control systems, boiler interlocks, water treatment and boiler cleaning, prime movers and auxiliaries, and instrumentation and control. (Prerequisite: 428-331).

428-333 POWER ENGINEER 3-3RD CLASS
...prime movers, energy machines, and auxiliaries. (Prerequisite: 428-332, 428-343).

428-337 POWER HOUSE-ECONOMICS
...boiler combustion and efficiency, heat loss solutions, boiler test procedures, boiler maintenance procedures, boiler tune-up, boiler operational modifications, scale deposit effects, load management, auxiliary equipment, and boiler oxygen control evaluation procedures.

428-341 POWER ENGINEER 1-4TH CLASS
...types of boilers and construction, heating boilers, heating accessories and systems, steam boiler fittings, boiler parts and construction, instrumentation and controls, combustion, and boiler firing.

428-342 POWER ENGINEER 2-4TH CLASS
...boiler operation and maintenance, power plant pumps, refrigeration, air compression, and types of plants. (Prerequisite: 428-341).

428-343 POWER ENGINEER 3-4TH CLASS
...lubrication, steam engines, steam turbines, internal combustion engines, gas turbines, feedwater treatment, electricity, and piping and piping fittings. (Prerequisite: 428-342).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Practical Nursing  
Program Code 315101

TECHNICAL DIPLOMA - TWO SEMESTERS PLUS ONE SUMMER
Offered at the Green Bay campus. For more information call the Green Bay Campus at (920)498-5530 or (800)422-NWTC ext. 530.

PROGRAM DESCRIPTION
Practical Nursing graduates work in hospitals, nursing homes, clinics, community health agencies, and private homes. They give bedside care to patients whose conditions are relatively stable and assist the Registered Nurse or doctor in the care of the acutely ill person.

Graduates of this program will be able to:
- Obtain employment as a practical nurse.
- Pass the NCLEX-PN.
- Participate in assisting role of the nursing process: gather patient data, etc.
- Demonstrate professional behaviors expected in the workplace.
- Become an active member of their profession.

The Practical Nursing program is approved by:
Wisconsin Board of Nursing
Dept. of Regulation and Licensing
1400 East Washington St.
P.O. Box 8935
Madison, WI 53708-8935
(608)266-2112

A student takes five basic subjects during the first semester to prepare for clinical practice in hospitals and nursing homes. During the following semester and summer session, a student experiences medical nursing, surgical nursing, care of the psychiatric patient, care of children, and care of parents and newborns.

REQUIREMENTS FOR PROGRAM ENTRY
- High school diploma or equivalent
- Math Testing - a score of 80% on math test will include general math, percentages, proportions, and decimals.
- An interview/orientation
- A medical examination form satisfactorily completed within three months before entering the program

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of this program will have the potential for employment as a Licensed Practical Nurse (LPN) or a Health Insurance Claims Approver.

LICENSED PRACTICAL NURSE: administers care to individuals whose condition is relatively stable; administers care to the acutely ill under the direct supervision of an RN or MD; teaches basic hygiene, nutrition, and aspects of good health; administers first aid, and assists with health assessment and basic health teaching in a variety of settings under the supervision of an RN or MD.

HEALTH INSURANCE CLAIMS APPROVER: processes insurance claims on a computer terminal.

CURRICULUM
The Practical Nursing Technical Diploma is a one-year, one-summer, three semester program. Upon graduation, a student will have completed 36 credits.

FIRST SEMESTER
Course No. Description Credits
510-325 Nutrition-Fam Growth/Dev 2
510-328 Personal/Voc Issues 1 1
510-330 Nursing-Basic 4
510-331 Nursing-Extended Care 5
512-312 Anatomy/Struct-Funct 2
801-386 Communication-Interpersonal 1

SEMESTER TOTAL 15

SECOND SEMESTER
510-311 Nursing-Children 3
510-324 Nursing-Parent/Newborn 3
510-326 Nursing-Mental Health 3
510-332 Nursing-Adult 1 5

SEMESTER TOTAL 14

SUMMER SEMESTER
510-327 Nutrition-Fam Growth/Dev 2
510-329 Personal/Voc Issues 2 1

SEMESTER TOTAL 7

The following courses may be taken prior to entering the program:
512-312 Anatomy Structure/Function
510-328 Personal/Vocational Issues 1
510-325 Nutrition-Family Growth/Development
801-386 Communication-Interpersonal

It is suggested that a course in Medical Terminology be taken prior to entering the program.

It is also suggested that the NWTC Skills Center be used for developing study skills, test taking skills, reading, and math skills prior to entering the program.

* A minimum grade of C is required for all nursing courses (510 & 512).

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

510-311 NURSING-CHILDREN... identifying physical, social, emotional needs; child health/welfare agencies; safety precautions, health promotion, disease prevention; child abuse; communication and play techniques; and theory and clinical practice. (Prerequisite: 510-332, completion of 1st semester).

510-324 NURSING-PARENT/NEWBORN... prenatal, delivery, and postpartum care; identifying basic physical and social needs of the emergent family; theory and clinical practice. (Prerequisite: 510-332, completion of 1st semester).

510-325 NUTRITION-FAMILY GROWTH/DEVELOPMENT... the family unit; nutrition metabolism and nutrients; nutritional needs during pregnancy; and developmental process: newborn, infant, toddler, preschool child, schoolage child, preadolescent, adolescent, young adult, and adult.

510-326 NURSING-MENTAL HEALTH... emotional and social needs, reaction to stress, nurse/patient relationships, behaviors, nursing interventions and treatment, community resources, and theory and clinical practice. (Prerequisite: 510-332, completion of 1st semester).

510-327 NURSING-ADULT 2... Practical Nurse's role assisting in evaluating care; focus on mobility, hematologic, nutritional, elimination, neurologic, and sexuality needs of adults. (Prerequisite: completion of 1st semester, completion of 2nd semester).

510-329 PERSONAL/VOCATIONAL ISSUES 1... nursing history, interpersonal relationships, employee/employer relationships, nursing ethics, Nurse Practice Act, LPN legal limitations, liability, nursing organizations, and community health organizations.

510-329 PERSONAL/VOCATIONAL ISSUES 2... finding a job, legal and ethical aspects, teamwork, leadership, health care delivery, career mobility, vocational organization, cultural and spiritual differences, and NCLEX-LPN. (Prerequisite: completion of 2nd semester).

510-330 NURSING-BASIC... orientation to nursing, patient environment, body mechanics, observing, recording and reporting, patient care, therapeutic Rx, and principles of asepsis. (Prerequisite: admission to program).

510-331 NURSING-EXTENDED CARE... assessment of needs and care of long-term patients, the aging process, role changes, societal views, safety and rehabilitation of chronically ill, administration of medicine, theory, and clinical experience. (Prerequisite: 510-330).

510-332 NURSING-ADULT 1... Practical Nurse's role in assisting with planning care; meeting needs of adults: perioperative comfort, circulatory, respiratory, and urinary needs of adults. (Prerequisite: completion of 1st semester).

512-312 ANATOMY/STRUCTURE-FUNCTION... human body systems, structural formation.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN 141 TECHNICAL COLLEGE
Press Technician ... **NEW in January, 1999!**

**TECHNICAL DIPLOMA - ONE YEAR (Pending State Approval)**
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5440 or (800)422-NWTC ext. 440.

**PROGRAM DESCRIPTION**
Press Technician trains students in pre-press operations; offset presswork and lithographic reproduction, film creation, film assembly and finishing processes; electronic publishing.

Graduates of this program will be able to:
- Analyze jobs for operations and materials costs.
- Lay out jobs and generate film for production.
- Expose and assemble proofs.
- Set up and operate sheetfed presses.
- Perform finishing operations on printed jobs.
- Perform electronic pre-press operations.

**REQUIREMENTS FOR PROGRAM ENTRY**
- Basic math
- Ability to use computer keyboard

**READING LEVEL**
Materials used within this program have an average reading level of grade 12.

**MATH LEVEL**
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

**EMPLOYMENT POTENTIAL**
A graduate of the program will have the potential for a job as:
- **Bindery/Finishing Operator, Estimator/Production Planner**
- **Image Assembler, Offset Press Assistant, Offset Press Operator**

**BINDERY/FINISHING OPERATOR:** runs machines that cut, fold, collate, staple, stitch, trim, and bind pages.

**ESTIMATOR/PRODUCTION PLANNER:** prepares price quotations, estimates for printing, and preliminary production schedules.

**IMAGE ASSEMBLER:** produces negatives, layouts and plates specific to printing.

**OFFSET PRESS ASSISTANT:** prepares press for run; runs press proof; adjusts plate speed, paper feed, tension of paper, ink and water flow.

**OFFSET PRESS OPERATOR:** sets up, prepares and runs presses; loads paper, installs printing plates, adjusts guides and controls machine operations.
Programmer/Analyst (CIS)  Program Code 101071

ASSOCIATE DEGREE - TWO YEARS
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920) 498-5479 or (800)422-NWTC ext. 479.

PROGRAM DESCRIPTION
Programmer/Analyst prepares students for employment as applications programmers. Programmers are responsible for writing computer programs to solve business problems.

Graduates of this program will be able to:
- Make oral presentations.
- Develop programs using COBOL.
- Develop programs using RPG.
- Develop applications using Oracle.
- Develop batch programs to generate business reports.
- Develop interactive programs to maintain files.
- Maintain existing programs.
- Design a normalized database.
- Use development tools.
- Manage small projects.
- Use control language.
- Develop programs to support the accounting function.
- Work within a team environment.
- Verify numerical output of computer programs.
- Use computer keyboard and mouse
- Use communications technology.
- Use core accounting terminology.
- Understand the business functions and process flow.

REQUIREMENTS FOR PROGRAM ENTRY
- One year of high school algebra or equivalent
- Ability to use computer keyboard and mouse

READING LEVEL
Materials used within this program have an average reading level of 12th grade.

MATH LEVEL
Students should have mastered basic algebra skills. For a description of math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Applications Programmer/Analyst.

APPLICATIONS PROGRAMMER/ANALYST:
- Gathers facts, analyzes them to determine the problem, writes specifications, designs a solution, and develops the program to implement the solution on the computer.

With additional education and/or work experience, graduates may find other opportunities for employment:
- Database Administrator
- Data Processing Department Manager
- Systems Analyst
- Systems Programmer
- Database Assistant

To train entry-level programmers in two years requires a rigorous academic schedule and a strong commitment by the student and by the instructors. The schedule has been carefully designed so that one semester prepares a student for the next semester. Deviation from this schedule can hinder progress and adversely affect the chances of successful completion.

A prospective student should consider taking the Programmer Orientation course (107-423). This is a short, non-credit course designed to give the student a clear understanding as to the nature of the course work, the time commitment required, and the fundamental skills needed to be successful in the first semester. To help a student make an intelligent decision about the future and prepare for the rigors of the program, a section of Programmer Orientation is strongly encouraged.

CURRICULUM
The Programmer/Analyst Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 68 credits.

FIRST SEMESTER
Course No. Description Credits
101-110 Accounting I 4
107-110 Computer: Program I-COBOL 4
107-112 Computer: Concept/App/ 3
801-195 Communication-Written 3
804-151 Math-Data Proc Logic 3
SEMESTER TOTAL 17

SECOND SEMESTER
107-120 Computer: Program II-COBOL 4
107-123 Computer: Database Concepts 4
801-196 Communication-Interpers 3
801-197 Reporting-Technical 3
804-161 Math-Data Proc Alg/Stats 3
SEMESTER TOTAL 17

THIRD SEMESTER
107-130 Computer: Program III-RPG 4
107-131 Computer: Systems Analy/Des 4
107-133 Computer: Control Language 3
809-199 Psychology-Human Relations 3
ELECTIVE 3
SEMESTER TOTAL 17

FOURTH SEMESTER
107-140 Computer: Program IV-SQL 3
107-141 Computer: Adv Prog Proc 3
107-142 Computer: Data Proc Intern 2
809-195 Economics 3
809-197 Society-Amer Contemp 3
ELECTIVE 3
SEMESTER TOTAL 17

SUGGESTED ELECTIVES for this program include: PC: Overview Word/Excel (103-101), CASE Tools-Intro (107-135), RPG Programming-Advanced (107-143), Computer Technologies-Current (107-144), Micro Programming "C" (107-173).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

107-110 COMPUTER: PROGRAMMING 1-COBOL
...programming and problem solving using the COBOL language ANSI-74 and ANSI-85, design and develop COBOL report generator programs using structured techniques, including table handling and control break concepts.
(Prerequisite: 107-112, 804-151).

107-112 COMPUTER: CONCEPTS/ APPLICATIONS
...hardware components of a computer system, computer software, file and database processing and management, communications, management information systems, the information systems life cycle, computer career opportunities, and computer trends and issues.

107-120 COMPUTER: PROGRAMMING 2-COBOL
...advanced concepts and techniques using COBOL, problem definition, job streams, sort/search, table processing, sequential/random access file processing, file update functions, data verification, on-line programming techniques.
(Prerequisite: 107-110).

107-123 COMPUTER: DATABASE CONCEPTS
...data and its function; traditional, hierarchical, network, relational data models; relational algebra, logical files, structured query language, normalization, database constraint; database management systems (DBMS) functions and applications. 
(Prerequisite: 107-110, 107-112).

107-130 COMPUTER: PROGRAMMING 3-RPG
...batch report and on-line programming techniques using the RPG 400 language, system utilities, applications systems, file maintenance techniques, subprograms, and program maintenance skills.
(Prerequisite: 107-120).

107-131 COMPUTER: SYSTEMS ANALYSIS/ DESIGN
...system development methodologies, analysis and design tools, the analysis process, overview of design considerations for user interface, traditional and database methods, testing methods, and documentation requirements.
(Prerequisite: 107-120, 107-123).

107-133 COMPUTER: CONTROL LANGUAGE
...basic functions of system/job control language; development of CL programs to utilize variables, control program flow, display menus/messages, handle error conditions, and access databases.
(Prerequisite: 107-120, 107-123).

107-140 COMPUTER: PROGRAMMING 4-SQL
...application system development using a fourth generation language (SQL), table creation/maintenance, screen designing, interactive program development, report programming/generating, menu designing/programming, and trigger processing. 
(Prerequisite: 107-130).

107-141 COMPUTER: ADVANCED PROGRAMMING PROCEDURES
...data structures and algorithms, file structure and processing techniques, principles of database systems, and complex application systems; procedural and non-procedural languages used to develop projects. 
(Prerequisite: 107-130, 107-131).

107-142 COMPUTER: DATA PROCESSING INTERNSHIP
...scheduling and management in a business environment through an individual project assignment. 
(Prerequisite: last semester in program).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Quality Assurance Technician Program Code 106232

ASSOCIATE DEGREE - FIVE YEARS, PART-TIME WITH SHORTER OPTIONS AVAILABLE
Offered at the Green Bay and Marinette campus. For more information, call the Green Bay Campus at (920)498-6823 or (800)422-NWTC ext. 823.

MISSION STATEMENT OF THE QUALITY ASSURANCE TECHNICIAN PROGRAM
To provide a learning environment for individuals who promote continuous improvement and customer satisfaction through the application of Quality concepts, principles, and methodologies using the latest scientific approaches.

A student can specialize in either the service, process or manufacturing industries.

Graduates of this program will be able to:
• Adopt a philosophy of cooperation and respect for all coworkers.
• Identify elements of good customer relations.
• Apply math skills.
• Use quality theories.
• Describe the strategic and tactical operations of a business.
• Evaluate design quality.
• Use problem solving tools.
• Integrate corrective action into a process.
• Function as a team member.
• Use supplier relations techniques.
• Communicate effectively.
• Use computer for data collection, data analysis, and word processing.
• Demonstrate leadership skills.
• Identify manufacturing processes.
• Write Q.A. policies and procedures.
• Conduct audits.
• Validate quality improvements.
• Apply statistical methods.
• Monitor manufacturing quality.

REQUIREMENT FOR PROGRAM ENTRY
• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)
• High school background in mathematics, science, industrial education, and/or service related classes.

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic algebra skills. For a description of math, see the Basic Education section of this catalog on page 20.

NOTE: Courses may be substituted for different program emphasis. For a process or service industry emphasis in Quality Assurance the following course substitution is required.

Process Emphasis
623-122 Metrology/Blueprint Rdg. --replace with 623-124 Quality-Sensory Evaluation
623-120 NDT Principles --replace with 623-135 Quality Process Appl
806-131 Materials Science --replace with 806-150 Science 1--Tech
623-142 NDT Application--replace with 623-147 Quality Issues

Service Emphasis
623-112 Manufacturing Technologies -- --replace with 104-110 Marketing Principles
623-122 Metrology/Blueprint Rdg. -- --replace with 104-198 Market Research
623-120 NDT Principles -- --replace with 623-124 Sensory Evaluation
806-131 Materials Science -- --replace with 102-158 Business Intro
623-142 NDT Application -- --replace with 623-147 Quality Issues


This program is fully eligible for financial aid.

CURRICULUM
The Quality Assurance Technician Associate Degree is offered on a late-afternoon/evening basis and is a five-year, ten-semester program, with options to complete in a shorter period of time. Upon graduation, a student will have completed 66 credits.

FIRST SEMESTER
623-110 Quality Concepts 3
804-130 Algebra/Trigonometry 3
SEMESTER TOTAL 6

SECOND SEMESTER
623-112 Manufacturing Technology 3
OR
104-110 Marketing Principles 3
623-113 Quality Documentation 3
SEMESTER TOTAL 6

THIRD SEMESTER
623-115 Customer/Vendor Rel/Audits 3
804-131 Algebra/Intro 3
SEMESTER TOTAL 6

FOURTH SEMESTER
103-103 Micro Basic MS Office 1 3
801-196 Communication-Interpers 3
806-131 Materials Science 3
OR
806-150 Science 1-Tech 3
OR
102-158 Business Intro 3
SEMESTER TOTAL 9

FIFTH SEMESTER
623-144 Statistical Proc Control 3
809-199 Psychology-Human Relations 3
SEMESTER TOTAL 6

SIXTH SEMESTER
196-110 Supervision Principles 3
623-122 Metrology/Blueprint Rdg 3
623-124 Quality-Sensory Evaluation 3
OR
104-198 Market Research 3
801-195 Communication-Written 3
SEMESTER TOTAL 9

SEVENTH SEMESTER
623-133 Quality Engineering-Intro 3
801-197 Reporting-Technical 3
SEMESTER TOTAL 6

EIGHTH SEMESTER
623-120 Nondestructive Test Prin 3
OR
623-135 Quality Process Appl 3
104-191 Customer Service Mgmt ELECTIVE 3
SEMESTER TOTAL 6

NINTH SEMESTER
623-142 Nondestructive Test-App 3
OR
623-147 Quality Issues-Industries 3
809-150 Economics ELECTIVE 3
SEMESTER TOTAL 6

TENTH SEMESTER
623-145 Quality Problem Solving ELECTIVE 3
SEMESTER TOTAL 6
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

104-110 MARKETING PRINCIPLES...marketing management, consumer behavior, market segmentation, product decisions and management, distribution, promotional decisions, pricing, market research, and international marketing strategy planning.

104-191 CUSTOMER SERVICE MANAGEMENT...develop professional telephone etiquette, explore customer service work environments, identify and analyze customer service failures, resolve problems cost effectively, set complaint policies and communication techniques to handle complaining customers.

104-198 MARKET RESEARCH...identify problems and formulate problem hypothesis, situation analysis, informal investigation and secondary research, project objectives, primary research, sampling, questionnaires, interviews, processing the written report, and conclusions and data analysis. (Prerequisite: 104-110).

196-110 SUPERVISION PRINCIPLES...modern components of a supervisor's job: motivation, job analysis, job design, group behaviors, communication skills, leadership styles, planning, policies, organizing, control, coaching/counseling, performance evaluation, discipline, and conflict resolution.

623-115 CUSTOMER/VENDOR RELATIONS/AUDITS...the quality department's role in customer relations, vendor certification programs, and performing of internal and vendor audits.

623-120 NONDESTRUCTIVE TESTING PRINCIPLES...the concepts of nondestructive testing: types of tests; procedures; and characteristics of materials for penetrant, magnetic particle, and ultrasonic testing.

623-122 METROLOGY/BLUEPRINT READING...blueprints, views, tolerances, geometric tolerancing; and use of metrology equipment: micrometers, calipers, gauges, coordinate measuring machines, and optic comparators to verify specification conformance.

623-124 QUALITY-SENSORY EVALUATION...methods for measuring product attributes, and understanding customer perceptions and needs.

623-133 QUALITY ENGINEERING-INTRODUCTION...planning for quality, quality of design, reliability, manufacture planning, and design of experiments. (Prerequisite: 804-131).

623-135 QUALITY PROCESS APPLICATIONS...process industry fundamentals including an introduction to chemical reactions, reaction kinetics, and heat and mass balances.

623-142 NONDESTRUCTIVE TEST-APPLICATION/ PRACTICE...applying the nondestructive testing method used in the student's particular work environment; emphasis on eddy current and radiographic testing along with writing test procedures for any nondestructive testing method. (Prerequisite: 623-120).

623-144 STATISTICAL PROCESS CONTROL...basic statistics, statistical inference, normal distribution, simple probability, variable and attribute control charts, and process capability. (Prerequisite: 804-130).

623-145 QUALITY PROBLEM SOLVING...working in teams, problem solving and data gathering using tools of quality, project planning tools and techniques, and practical leadership skills. (Prerequisite: 623-144).

623-147 QUALITY ISSUES-INDUSTRIES...special issues in implementing quality in process and service industries.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Respiratory Care Practitioner  Program Code 105151

ASSOCIATE DEGREE - TWO YEARS PLUS ONE SUMMER

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5530 or (800)422-NWTC ext. 530.

PROGRAM DESCRIPTION
Respiratory Care Practitioner program trains students in the diagnosis, treatment, and rehabilitation of patients with chronic and acute diseases of the heart and lungs.

Graduates of this program will be able to:
• Be employed in the field of Respiratory Therapy.
• Initiate prescribed therapeutic procedures.
• Conduct prescribed therapeutic procedures.
• Modify prescribed therapeutic procedures.
• Demonstrate a technical competence.
• Demonstrate a positive work attitude.
• Demonstrate competency in physics.
• Demonstrate competence in microbiology theory.
• Demonstrate competence in anatomy physiology.
• Demonstrate competence in phys-cardio/renal.
• Respond positively to constructive criticism.
• Demonstrate initiative.
• Demonstrate interpersonal communication skills.
• Administer quality respiratory care.

A student is required to purchase uniforms, provide his/her own transportation to clinical facilities, and pay for liability insurance for each clinical course.

The Respiratory Care Practitioner program is accredited by the Commission on Accreditation of Allied Health Education Programs in collaboration with the Committee on Accreditation for Respiratory Care
1701 W. Euless Blvd., Suite 300
Euless, TX 76040
(817) 283-2835

A graduate of the program is eligible to take the entry level and advanced practitioner examinations in Respiratory Care.

REQUIREMENTS FOR PROGRAM ENTRY
• Minimum standard composite score of 20 on the ACT assessment
• High school diploma or equivalent
• High school courses that include algebra (or attain a minimum score of 80% on the NWTC Algebra examination), one year of biology or equivalent, one year of chemistry or equivalent (within last 5 years), one year of physics or advanced mathematics, all with grades of C or better.
• A medical examination satisfactorily completed within three months before entering the program.

READING LEVEL
Materials used within this program have an average reading level of 14th grade.

MATH LEVEL
Students should have mastered basic math skills.
For a description of basic math, see the Basic Education section of this catalog on page 20.

NOTE: A student who does not meet the above requirements should consult an NWTC counselor about ways to make up any deficiencies through testing or course work.

EMLOYMENT POTENTIAL:
A graduate of the program will have potential for employment as a Respiratory Care Practitioner in the hospital setting as a Staff Therapist, Pulmonary Rehabilitation Therapist, Perinatal/Pediatric Therapist, Pulmonary Function Technologist/Therapist, Sleep Disorder Technician, Shift Supervisor, and Department Manager. Outside of the hospital setting a graduate will have potential for employment as a Home Care Therapist and/or Manager, Nursing Home Therapist, Respiratory Care Educator, and Medical Equipment Supplies Salesperson.

STAFF THERAPIST: (hospital setting) performs all respiratory care modalities and monitors life-support systems in all areas of the hospital during a twenty-four hour period.

PULMONARY REHABILITATION THERAPIST: works in conjunction with other allied health practitioners and physicians with patients affected by chronic lung/heart disease, with a goal to improve the quality of life for these special patients. A graduate would work with a variety of age groups and physical impairments.

PERINATAL/PEDIATRIC THERAPIST: (considered a specialized area of expertise) works in a neonatal intensive care unit, stepdown unit with children and their families, as well as the physicians and nurses assigned to the same units.

PULMONARY FUNCTION TECHNOLOGIST/ THERAPIST: works in a diagnostic laboratory setting that emphasizes the testing of lung dysfunction via a variety of pulmonary tests and stress tests, and may also be required to draw arterial blood samples.

SLEEP DISORDER TECHNICIAN: (considered a specialized area of practice) performs and monitors tests designed to detect specific sleep disorders, working closely with physicians, patients, and family members.

SHIFT SUPERVISOR: a first-line management position, supervises the activities and performance of respiratory care practitioners assigned to a specific shift. Many managerial skills and duties are required in this capacity.

This program is fully eligible for financial aid.
CURRICULUM
The Respiratory Care Practitioner Associate Degree is a two-year, one-summer, five-semester program. Upon graduation, a student will have completed 72 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>801-196</td>
<td>Communication-Interpers</td>
<td>3</td>
</tr>
<tr>
<td>* 806-115</td>
<td>Physics-RCP</td>
<td>3</td>
</tr>
<tr>
<td>* 806-182</td>
<td>Anatomy/Physiology 1</td>
<td>3</td>
</tr>
<tr>
<td>* 806-194</td>
<td>Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>809-198</td>
<td>Psychology-Intro</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ELECTIVE</td>
<td>2</td>
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<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td></td>
<td><strong>17</strong></td>
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</table>

SECOND SEMESTER

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<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>* 515-111</td>
<td>Respiratory Care Intro</td>
<td>2</td>
</tr>
<tr>
<td>* 515-125</td>
<td>Respiratory Care Tech 1</td>
<td>3</td>
</tr>
<tr>
<td>* 515-151</td>
<td>Pharmacology</td>
<td>2</td>
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<tr>
<td>801-195</td>
<td>Communication-Written</td>
<td>3</td>
</tr>
<tr>
<td>* 806-189</td>
<td>Physiology/Cardio/Renal</td>
<td>3</td>
</tr>
<tr>
<td>809-196</td>
<td>Sociology-Intro</td>
<td>3</td>
</tr>
<tr>
<td><strong>SEMESTER TOTAL</strong></td>
<td></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

SUMMER SEMESTER

| * 515-132  | Respiratory Care Tech 2      | 3       |
| * 515-139  | Respiratory Care Clinical 1  | 2       |
| **SEMESTER TOTAL** |                   | **5**    |

THIRD SEMESTER

| * 515-133  | Pulmonary Function           | 3       |
| * 515-134  | Cardiopulmonary Diseases     | 3       |
| * 515-138  | Ventilation-Mechanical       | 3       |
| * 515-146  | Respiratory Care Clin 2      | 6       |
|            | ELECTIVE                     | 1       |
| **SEMESTER TOTAL** |                   | **16**   |

FOURTH SEMESTER

| * 515-143  | Critical Care                | 3       |
| * 515-147  | Respiratory-Neonatal/Ped     | 2       |
| * 515-159  | Respiratory Care Clinical 3  | 6       |
| 809-195    | Economics                    | 3       |
|            | ELECTIVE                     | 3       |
| **SEMESTER TOTAL** |                   | **17**   |

SUGGESTED ELECTIVES: Clinical Simulation Review 1 (515-162), Clinical Simulation Review 2 (515-163), and Computer Applications (804-182).

No final grade lower than C is acceptable in any of the courses marked with an asterisk. A student must repeat that particular course to achieve a C or better final grade in order to continue or graduate from this program. If the course is segmented, the successful retake must occur before continuing the sequence.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Retail Management

ASSOCIATE DEGREE - TWO YEARS
Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-5440 or (800)422-NWTC ext. 440.

PROGRAM DESCRIPTION
Retail Management prepares students for entry-level management in the retail industry. Graduates are trained in merchandising techniques and management strategies pertaining to all facets of retailing.

Graduates of this program will be able to:
• Recommend a retail pricing plan.
• Evaluate alternative distribution strategies.
• Develop a retail product and service mix.
• Generate retail information for effective decision making.
• Apply continuous improvement strategies to solve retail problems.
• Assess emerging global trade activities that impact on retailing.
• Create a personal professional development plan.
• Manage resources and risks to contribute to profitability of the organization.
• Manage retailing within an enterprise.
• Apply technology to retail and retail information systems.
• Apply legal and ethical principles to personal, social, and professional behaviors.
• Develop long-term strategic retail marketing plans.
• Formulate retail selling strategies.
• Apply effective leadership skills.
• Design a retail promotion plan.

REQUIREMENTS FOR PROGRAM ENTRY
• Basic math
• Ability to use computer keyboard

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills.
For a description of basic math, see the Basic Education section of this catalog on page 20.

CURRICULUM
The Retail Management Associate Degree is a two-year, four-semester program. Upon graduation, a student will have completed 66 credits.

FIRST SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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<tbody>
<tr>
<td>102-158</td>
<td>Business Intro</td>
<td>3</td>
</tr>
<tr>
<td>104-106</td>
<td>Retail Sales Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>104-190</td>
<td>Retail Principles</td>
<td>3</td>
</tr>
<tr>
<td>105-101</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>801-195</td>
<td>Communication-Written</td>
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<tr>
<td>801-198</td>
<td>Speech</td>
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<td>18</td>
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</table>

SECOND SEMESTER

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Description</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>103-103</td>
<td>Micro Basics MS Office 1</td>
<td>3</td>
</tr>
<tr>
<td>104-110</td>
<td>Marketing Principles</td>
<td>3</td>
</tr>
<tr>
<td>104-123</td>
<td>Product Information</td>
<td>3</td>
</tr>
<tr>
<td>104-126</td>
<td>Promotion Principles</td>
<td>3</td>
</tr>
<tr>
<td>104-192</td>
<td>Merchandise Management</td>
<td>3</td>
</tr>
<tr>
<td>196-110</td>
<td>Supervision Principles</td>
<td>3</td>
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<td>SEMESTER TOTAL</td>
<td>18</td>
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</tbody>
</table>

THIRD SEMESTER

<table>
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<tr>
<th>Course No.</th>
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<tr>
<td>104-191</td>
<td>Customer Service Mgmt</td>
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<td>104-193</td>
<td>Retail Operations Mgmt</td>
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<td>809-195</td>
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<td>809-199</td>
<td>Psychology-Human Relations</td>
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<td>SEMESTER TOTAL</td>
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FOURTH SEMESTER

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<tr>
<th>Course No.</th>
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<tr>
<td>104-135</td>
<td>Retail Mgmt-Survival</td>
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<tr>
<td>104-164</td>
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<td>104-180</td>
<td>Retail Mgmt Field Study</td>
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<td>182-157</td>
<td>Logistics Management</td>
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<td>809-197</td>
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<tr>
<td></td>
<td>ELECTIVE</td>
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<tr>
<td></td>
<td>SEMESTER TOTAL</td>
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</tbody>
</table>

SUGGESTED ELECTIVES for this program include: Buying Techniques (104-105), Retail Trends (104-162), Merchandising-Visual (104-194), and Marketing-Apparel (104-197).

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

104-106 RETAIL SALES MANAGEMENT
...leadership of retail industry employees in various selling and customer service activities; sales training, tracking, and analysis specifically for retail entities.

104-110 MARKETING PRINCIPLES
...marketing management, consumer behavior, market segmentation, product decisions and management, distribution, promotional decisions, pricing, market research, and international marketing strategy planning.

104-123 PRODUCT INFORMATION
...textiles: fiber finishes, fabrics, and product care and evaluation; and non-textiles: plastics, metals, gems, leather products, wood products, and housewares.

104-126 PROMOTION PRINCIPLES
...theory and techniques for an integrated promotion plan; sales promotion planning; special event coordination; trade shows; public relations; direct marketing; and advertising; media selection, budgeting, layout, and script writing.

104-135 RETAIL MANAGEMENT-SURVIVAL SKILLS
...a review of current federal and state employment laws and employers' responsibilities; sources, consequences, and methods of handling stress; techniques and strategies of time management.

104-164 RETAIL MANAGEMENT INTERNSHIP
...professional work environment, interviewing techniques, sales, product knowledge, business operations, management awareness, inventory records/recordkeeping techniques with supervision/evaluation facilitated by instructor and contract training person. (Prerequisite: last semester in program).

104-190 RETAIL PRINCIPLES
...the nature and structure of retailing, consumer behavior, retail market segmentation, site selection, store layout, product decisions-merchandise assortments, merchandise management-pricing, inventory control, promotional decisions, and human resource management.

104-191 CUSTOMER SERVICE MANAGEMENT
...develop professional telephone etiquette, explore customer service work environments, identify and analyze customer service failures, resolve problems cost effectively, set complaint policies and communication techniques to handle complaining customers.

104-193 RETAIL OPERATIONS MANAGEMENT
...management of a retail store operation including retail planning and control; retail information systems; and human resource management including placement, orientation, evaluation, recruiting, interviewing, discipline, performance problems, and training. (Prerequisite: 104-190).

105-101 BUSINESS MATH
...percentage, interest, promissory notes, borrowing, credit charges, payroll records and deductions, property tax, sales tax, inventory valuation, depreciation, mark-up, cash and trade discounts, stocks and bonds, and financial statement analysis.

182-157 LOGISTICS MANAGEMENT
...basic concepts, management levels, elements of inventory control, transportation, warehousing, packaging, material handling and purchasing, and the role order processing plays in the distribution cycle.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Supervisory Management  Program Code 101961

ASSOCIATE DEGREE - TEN SEMESTER, PART-TIME

Offered at the Green Bay, Marinette, and Sturgeon Bay campus. For more information, call the Green Bay campus at (920)498-5616, the Marinette campus at (715)735-9361, or the Sturgeon Bay campus at (920)743-2207 or (800)422-NWTC.

The 11 occupational specific courses, those beginning with a course number 196-xxx, are delivered in an Accelerated Learning format, specifically intended for working adults. These courses have a compressed schedule of 6 weeks. Students may complete 3 courses, totaling nine credits, in the same time that one traditional 3-credit course is completed.

PROGRAM DESCRIPTION
Supervisory Management provides educational experiences with an emphasis on team concepts to individuals preparing for, or already engaged in, leadership positions; and opportunities to explore specific applications in a given occupation.

The program is offered on a flexible, part-time schedule with most hours arranged to accommodate working adults. A student may complete portions of the program through credit by examination, credit for work experience, TV home study courses, and transfer of credit from other accredited institutions. Courses may also be taken on a full-time schedule.

The occupation specific courses have classroom contact hours reduced but they deliver equivalent knowledge and skills.

Graduates of this program will be able to:
• Practice ethical leadership.
• Perform in team environments.
• Value diversity.
• Demonstrate workplace communication skills.
• Demonstrate analytical/creative thinking process.
• Understand the financial components of an organization.
• Exhibit leadership skills.
• Envision change.
• Adapt organizations for change.
• Apply continuous improvement processes.
• Affect workplace safety.
• Apply current legal workplace standards.

REQUIREMENTS FOR PROGRAM ENTRY
• Basic reading, writing, and math skills
• Math and reading assessments
• Completion of all recommended activities to address math and reading skill deficiencies

READING LEVEL
Materials used within this program have an average reading level of 13th grade or higher.

MATH LEVEL
Students should have mastered basic math skills. For description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
This program is designed to attract persons who are already engaged in, or preparing for, supervisory or leadership roles in an organization. An employee who is already in a supervisory, leadership, or other management level position will be able to expand his/her level of effective leadership skills.

An employee not currently in a first level management role, who has established a good working relationship with his/her present employer, will enhance leadership skills and increase the chance of promotion into a leadership role as an opportunity presents itself within the company.

A graduate of the program who has little or no previous leadership experience, or a short employment record, will have learned effective leadership skills to be used on the job and in the community.

Traditionally a supervisor plans, organizes, directs, and coordinates activities of non-management employees in various occupational settings; trains and evaluates employees under her or his authority; implements policy decisions and work systems established by upper management; and facilitates intra-departmental and inter-departmental communication and work flow.

In addition to traditional supervisory skills and practices, today’s leaders must understand system(s), variation, and the Quality Improvement Process; be resourceful and boisterous, effectively manage work place diversity, display leadership skills, use critical thinking skills, and use communication skills appropriate to the new team environment.

Students may take 12-15 credits per semester and complete the degree in 2 to 2 1/2 years.

CURRICULUM
These 11 occupational specific courses may be completed in four semesters. Each course is 6 weeks in length.

FIRST SEMESTER
Course No. Description Credit
196-191 Supervision 3
196-193 Human Resource Management 3
196-196 Managing Diversity and Change 3

SECOND SEMESTER
196-189 Problem Solving/Team Building 3
196-195 Legal Issues 3
196-197 Managerial Budgeting/Finance 3

THIRD SEMESTER
196-198 Organizational Development 3
196-190 Leadership Development 3
196-192 Managing for Quality 3

FOURTH SEMESTER
196-194 Safety Awareness 3
196-199 Ethics 3

Individuals may select the following traditional, semester-length, occupational support courses in any sequence while attending accelerated courses, or following completion of the occupational specific program courses.

These course requirements can also be met through credit for work experience, TV home study courses, and transfer of credit from other accredited institutions.

Course No. Description Credit
809-199 Psychology - Human Relations 3
801-195 Communications - Written 3
105-101 Business Math 3
801-196 Communications - Oral/Interpersonal 3
809-195 Economics 3
103-103 Micro Basics MS Office Part 1 3
809-197 Society - American Contemporary 3
101-141 Accounting - Financial 3
102-150 Business Law 3
Elective 3
Elective 3
TOTAL CREDITS 66

This program is fully eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for the student to develop the knowledge, skills, and understanding of:

196-189 PROBLEM SOLVING/TEAM BUILDING
...emphasis is placed on group dynamics, running productive meetings, and conflict resolution. Several problem-solving models are introduced. Students practice models on practical work and real life applications.

196-190 LEADERSHIP DEVELOPMENT
...approach to leadership skills needed in organizations. Focus is on the role of the supervisor in realizing organizational goals.

196-191 SUPERVISION
...directing individuals and the work that needs to be done within an organization; emphasis on human behavioral aspects and focuses on the supervisory principles of organizing, staffing, leading, and controlling.

196-192 MANAGING-QUALITY
...the supervisor’s role in assisting an organization to produce a quality product or service.

196-193 HUMAN RESOURCE MANAGEMENT
...foundation for development of employee effectiveness; focus on employee hiring, orientation and training, performance management, motivating employees, and related topics that affect the supervisor’s work group.

196-194 SAFETY AWARENESS
...the supervisor’s responsibility for maintaining a safe and productive workplace.

196-195 LEGAL ISSUES
...the general nature of the labor-management relationship as it currently exists in the United States.

196-196 MANAGING DIVERSITY/CHANGE
...a broadened view of diversity, including values, age, disabilities, education, and culture; action framework to gain advantage by blending/capitalizing on different skills and perspectives of people.

196-197 MANAGERIAL BUDGETING/FINANCE
...describing and assessing a business, defining management and marketing structure, summarizing business information, forecasting sales and completing financial statements, analyzing, adjusting, and presenting a business plan.

196-198 ORGANIZATIONAL DEVELOPMENT
...organizational issues related to how we work and exist within an organizational setting.

196-199 ETHICS
...an integrated overview of the legal, social ethical, and political constraints and responsibilities influencing personal and business decision making.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Surgical Technician  Program Code 315121

TECHNICAL DIPLOMA - ONE YEAR PLUS ONE SUMMER

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920) 498-5530 or (800)422-NWTC ext. 530.

PROGRAM DESCRIPTION
Surgical Technician prepares and maintains a sterile field before and during surgery, passes instruments and supplies to the surgeon, provides safe patient care, and prepares instruments for the next operative procedure.

Graduates of this program will be able to:
• Be successfully employed in the field.
• Function as a member of the surgical team.
• Apply the principles of sterile technique and safety in the operating room.
• Maintain the principles of sterile technique and safety in the operating room.
• Prepare surgical instruments, supplies, equipment, and medications.
• Care for surgical instruments, supplies, equipment, and medications.
• Use medical terminology.
• Identify basic anatomy and physiology.
• Maintain CPR certification.
• Operate a personal computer.
• Communicate effectively.
• Recognize the legal & policy limits of individual responsibility.
• Pass the Certification Test.

A student will be required to purchase his/her own scrub suit, provide his/her own transportation to clinical facilities, and pay for liability insurance for each clinical course.

The Surgical Technician Program is accredited by Commission on Accreditation of Allied Health Education Programs in collaboration with the Accreditation Review Committee on Education in Surgical Technology. Liaison Council on Certification for the Surgical Technologist 7790 E. Arapahoe Road Suite 240 Englewood, CO 80112-1274 (303) 694-9264 FAX (303) 689-0518

REQUIREMENTS FOR PROGRAM ENTRY
• High school diploma or equivalent
• Satisfactory placement in the NWTC mathematics and reading tests or satisfactory placement on the ACT assessment test
• An interview or orientation
• A satisfactory medical examination within three months before entering the program
• Current CPR card is required the first day of the first clinical course and it should remain current through the last day of last clinical course

READING LEVEL
Materials used within this program have an average reading level of 13th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

CURRICULUM
The Surgical Technician Diploma is a one-year, one-summer, three-semester program. Upon graduation, a student will have completed 33 credits.

SUMMER
Course No. Description Credits
509-360 Medical Terminology 2
512-312 Anatomy/Struct-Func 2
801-385 Communicating-Writing 1
801-386 Communicating-Interpersonal 1

SEMESTER TOTAL 6

FIRST SEMESTER
106-345 Information Process-Basic 1
512-324 Surgical Tech Proc-Adv 3
512-325 Surgical Tech Proc-Lab 3
512-326 Surgical Tech Clinical 2 6

SEMESTER TOTAL 15

SECOND SEMESTER
512-327 Surgical Tech Proc-Bed 3
512-328 Surgical Tech Clinical 3 3

SEMESTER TOTAL 12

Students enrolled in this program should contact the NWTC Veteran's Office at (920)498-5445 if Veteran's information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for a student to develop the knowledge, skills, process and understanding of:

509-360 MEDICAL TERMINOLOGY
...spelling, pronunciation, definition, and abbreviation application; word roots, prefixes, and suffixes; and anatomical structure.

512-311 SURGICAL TECHNICIAN PROCEDURES/LABORATORY
...hospital environment, surgical team, asepsis, ethical and legal responsibilities, microbiology, infection control, sterilization, anesthesia, positioning patients, draping, specimen care, scrub and circulating duties. (Prerequisite: admission to program).

512-312 ANATOMY/STRUCTURE-FUNCTION
...human body systems, structural formation.

512-315 SURGICAL TECHNICIAN CLINICAL 1
...introduction to the operating room environment, identification and proper handling of surgical instrumentation, demonstration of scrubbing and circulating duties, body substance isolation, and utilization of the sterilization process. (Prerequisite: admission to program).

512-316 SURGICAL TECHNICIAN SKILLS
...draping skills, Mayo stand and/or back table set-ups, routine surgical medications, specialized equipment and supplies utilized during surgery. (Prerequisite: admission to program).

512-324 SURGICAL TECHNICIAN PROCEDURES-ADVANCED
...clinical experience review, anatomy and terminology, references, reports, demonstrations and in-depth presentations of surgical procedures. (Prerequisite: completion of 1st semester).

512-325 SURGICAL TECHNICIAN CLINICAL 2
...supervised application of beginning level skills of a surgical technician on minor procedures; performance of second scrub role on major surgical procedures. (Prerequisite: completion of 1st semester).

512-335 SURGICAL TECHNICIAN CLINICAL 3
...supervised application of advanced skills of an entry-level surgical technician demonstrated on minor and major surgical procedures; the second scrub role will also be assumed. (Prerequisite: completion of 1st semester).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
PROGRAM DESCRIPTION
Weld Inspection prepares students in inspection and codes as well as destructive and nondestructive examinations of welds.

Graduates of this program will be able to:
• Examine metallurgical specimens.
• Examine weldments using nondestructive test methods.
• Evaluate weld test results.
• Interpret weld and nondestructive test symbols.
• Document test results for procedure and welder qualifications.
• Communicate inspection details.
• Interpret code requirements.
• Examine weldments for acceptability.
• Troubleshoot welding problems.

REQUIREMENT FOR PROGRAM ENTRY
• A one-year welding program or documentation of equivalent work experience

READING LEVEL
Materials used within this program have an average reading level of 15th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

CURRICULUM
The Weld Inspection Technical Diploma is a one-semester program. Upon graduation, a student will have completed 14 credits.

FIRST SEMESTER
Course No. Description Credits
442-341 Weld Inspection-Code 3 3
442-342 Weld Inspection-Prac 3
470-334 Nondestructive Test A 3
470-335 Nondestructive Test B 3
806-337 Weld Material Analysis 2

SEMESTER TOTAL 14

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS

These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

442-341 WELD INSPECTION-CODE ...documents governing inspection, joint geometry, terminology, welding and NDT symbols; mechanical/chemical properties of metals; welding, brazing, and cutting process; weld/base metal discontinuities; destructive and nondestructive testing; and welding codes.

442-342 WELD INSPECTION-PRACTICAL ...visual inspection techniques, procedure/welder qualification, destructive and nondestructive examination of welds, weld process inspection, and the use of inspection tools.

470-334 NONDESTRUCTIVE TEST A ...identification and classification of discontinuities; nondestructive examination of welds using dye penetrant, ultrasonic, and magnetic particle test methods; and interpretation of test results according to code.

470-335 NONDESTRUCTIVE TEST B ...nondestructive examination of welds using magnetic particle and radiographic test methods, radiation measurement and safety, and interpretation of radiographs according to AWS Code D1.1.

806-337 WELD MATERIAL ANALYSIS ...the metallurgical properties of welds as related to the welding processes, application of testing these properties as related to the welding codes, and the interpretation of the test analysis. (Prerequisite: 806-360).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Welding Program Code 314421

TECHNICAL DIPLOMA - ONE YEAR
Offered at the Marinette and Green Bay campuses. For more information, call the Green Bay campus at (920)498-6823 or the Marinette campus at (715)735-9361, or (800)422-NWTC.

PROGRAM DESCRIPTION
Welding prepares students to join metal by applying heat and pressure to melt the edges of metal sections together to form a permanent bond. Welders plan layouts or work from blueprints, drawings, or other specifications.

Graduates of this program will be able to:
• Perform procedures using plasma, carbon arc, oxyacetylene process.
• Perform procedures using the shielded metal arc process (S.M.A.W.).
• Perform procedures using the Gas Metal Arc process (G.M.A.W.).
• Perform procedures using the Gas Tungsten Arc process (G.T.A.W.).
• Perform procedures using the Flux Core Arc welding process (F.C.A.W.).
• Perform procedures using the Submerged Arc process (S.A.W.).
• Perform welding procedures using the Metal Core process.
• Interpret mechanical drawings.
• Fabricate projects from blueprints and sketches.
• Perform basic mathematical computations.
• Identify various ferrous and non-ferrous materials.
• Communicate with co-workers and supervisors.

REQUIREMENT FOR PROGRAM ENTRY
• High school diploma or equivalent (Equivalency may be established through GED testing or other tests.)

READING LEVEL
Materials used within this program have an average reading level of 10th grade.

MATH LEVEL
Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL
A graduate of the program will have the potential for employment as Maintenance Welder, Qualified Welder, Structural Welder, Welder/Fabricator, and Pipe Welder. In these jobs, the graduate will build and repair metal components using basic knowledge of blueprints, metallurgy, and layout while applying the major welding processes used by industry; and will be trained in code welding according to the A.W.S. (American Welding Society) and A.S.M.E. (American Society of Mechanical Engineers), with testing provided on campus.

Other positions might include Construction Trades Welder, Ironworker Trades Welder, Millwright, Sheetmetal Trades Welder, and Pipe Trades Welder. People in many apprenticeship programs are required to take welding classes as part of their training.

With additional education and/or work experience, graduates may find other opportunities for employment.
• Journeylevel Welder
• Welding Inspector
• Welding Supervisor
• Journeylevel Welder/Fabricator

CURRICULUM
The Welding Technical Diploma is a one-year, two-semester program. Upon graduation, students will have completed 33 credits.

FIRST SEMESTER
Course No. Description Credits
442-310 Welding Theory/Prac 1 10
442-311 Blueprint Rdg/Layout 4
801-386 Communicating-Interpers 1
804-315 Math-Basic 1
804-325 Math-Welding 1
SEMESTER TOTAL 17

SECOND SEMESTER
442-320 Welding Theory/Prac 2 10
442-324 Metal Fabrication 4
806-360 Metallurgy-Applied 2
SEMESTER TOTAL 16

Students enrolled in this program should contact the NWTC Veteran's Office at (920)498-5445 if Veteran's information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for the student to develop the knowledge, skills, process, and understanding of:

442-310 WELDING THEORY/PRACTICE 1
...welding processes, machines and accessories, oxyacetylene cutting, welding, soldering and brazing, shielded metal arc welding (stick), and gas metal arc welding (wire).

442-311 BLUEPRINT READING/LAYOUT
...orthographic projection, sketching, dimensioning, sections and conventions, auxiliary views, working drawings, welding symbols, structural shapes, geometric construction, parallel line development, radial line development, and triangulation.

442-320 WELDING THEORY/PRACTICE 2
...welding processes, gas metal welding (wire), gas tungsten arc welding (heliarc), submerged arc, plasma arc cutting, pipe and automated welding, and flux core arc welding. (Prerequisite: 442-310).

442-324 METAL FABRICATION ...metal fabrication, hazards, production, measuring tools, metal shear, forming roll, pressbrakes, box and pan brake, sawing equipment, drill press, sheet metal tools, the hydraulic ironworker, and layout of shapes. (Prerequisite: 442-311).

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Wood Technics

Program Code 314102

TECHNICAL DIPLOMA - ONE YEAR

Offered at the Green Bay campus. For more information, call the Green Bay campus at (920)498-6823 or (800)422-NWTC ext. 823.

PROGRAM DESCRIPTION

Wood Technics prepares students to enter the building construction trades as carpenters and cabinetmakers.

Graduates of this program will be able to:
- Use materials according to application.
- Adhere to safety standards.
- Use industry terminology.
- Use measuring systems in the industry.
- Visualize final products from blueprints.
- Estimate labor and material costs.
- Erect building and cabinet modules.

REQUIREMENT FOR PROGRAM ENTRY

- High school diploma or equivalent. (Equivalency can be established through GED testing or designated entrance tests.)

READING LEVEL

Materials used within this program have an average reading level of 8th grade.

MATH LEVEL

Students should have mastered basic math skills. For a description of basic math, see the Basic Education section of this catalog on page 20.

EMPLOYMENT POTENTIAL

A graduate of the program will have potential for employment as Carpenter (Cabinetmaker), Carpenter (Finisher), Carpenter (General Builder), Carpenter (Mill Worker), and Carpenter (Rough).

CARPENTER/CABINETMAKER: builds cabinets; is capable in layout, frame, fabrication, assembly, and finish preparation; applies laminated plastic and installs drawers and door hardware.

CARPENTER/FINISHER: applies wall covering, siding, sheetrock, and paneling; hangs doors; applies trim; and installs and adjusts cabinets and built-in furniture.

CARPENTER (GENERAL BUILDER): constructs wood frame floors, wall and roof systems; selects, measures and cuts raw materials; performs area volume and linear calculations; lays out building components according to blueprints; installs doors, windows, siding and interior trim.

CARPENTER/MILLWORKER: works in a factory setting; mass produces trim, cabinets, and furniture; custom planes and saws; and handles other operations that demand the use of large and specialized machinery.

CARPENTER/ROUGH: erects forms for concrete foundations, rough framing, and roofing for residential and commercial construction; erects scaffolding; installs sheathing, siding, and prepares sites for jobs.

With additional education and/or work experience, graduates may find other opportunities for employment:
- Contractor
- Carpenter journeyman
- Mill Supervisor
- Journeylevel Cabinet Maker

CURRICULUM

The Wood Technics Technical Diploma is a one-year, two-semester program. Upon graduation, a student will have completed 33 credits.

FIRST SEMESTER

Course No. Description Credits
403-350 Blueprint Rdg-Construction 2
410-301 Wood Tech-Bldg Mall Est 2
410-310 Wood Tech-Carpentry 10
804-315 Math-Basic 1
804-026 Math 1-Wood Tech 1

SECOND SEMESTER

403-360 Blueprint Rdg-Cabinetry 2
409-320 Wood Tech-Cabinet Making 10
801-385 Communicating-Writing 1
801-386 Communicating-Interpers 1
804-336 Math 2-Wood Technics 1
806-354 Science-Wood Tech 2

Total: 16 Credits

Students enrolled in this program should contact the NWTC Veteran’s Office at (920)498-5445 if Veteran’s information is needed.

This program is partially eligible for financial aid.
COURSE DESCRIPTIONS
These courses provide an opportunity for a student to develop the knowledge, skills, process, and understanding of:

403-350 BLUEPRINT READING CONSTRUCTION
...drawing development/equipment, blueprints, plot and building layout, scaling and dimensioning practices, symbols, notations, basement/floor elevations, detail-sectional drawings, residential/industrial print reading, and schedules and specifications.

403-360 BLUEPRINT READING-CABINETRY
...sectional detail, cabinet layout, blueprint reading, angle layout, and countertop layout.

409-320 WOOD TECHNICS-CABINET MAKING
...the cabinetmaker trade including tools/equipment, kitchen cabinets, materials selection/estimate, base cabinet construction, drawer construction, base cabinet drawer installation, upper wall cabinets/doors, custom cabinet installation, cornering, and cabinet hardware specialties.

410-301 WOOD TECHNICS-BUILDING MATERIAL ESTIMATES
...material and labor cost estimates of building foundations, floor systems, superstructures, and exterior and interior finish systems.

410-310 WOOD TECHNICS-CARPENTRY
...general shop safety, construction types, construction materials, softwood/hardwood, tool safety, hand tools, power machinery, framing, footings/foundations, roofing, stair construction, scaffolds, and interior/exterior finish.

Descriptions of general Occupational Support courses can be found after the program descriptions at the back of the catalog.
Occupational Support
Course Descriptions

006-101  2 Credits  AGRI-BUSINESS MARKETING ...basic knowledge of agribusiness sales and marketing, recognizing potential customers, building a positive customer relationship, designing marketing plans, and using marketing and sales databases. Concepts presented using hands-on activities.

065-185  3 Credits  FOOD/FIELD STUDY ...the work and workflow of a production laboratory, business organization and structure, job assignments, and occupational and experience reports. (Prerequisite: 806-155).

080-151  2 Credits  FARM MACHINERY-CROP ...tillage, planting, cultivation, and harvesting machines; proper operation adjustments for plows, disc, cultivator, corn planter, grain drill, forage seeder, combine, corn picker, forage harvester, haybine, hay balers, blower, and sprayer.

080-153  2 Credits  FARM MECHANICAL-MATERIAL HANDLING ...elements of modern farmstead design, livestock housing environment, animal comfort, livestock handling equipment, feeding systems, milking procedures, milking facilities, animal health concerns, and waste management.

080-157  3 Credits  DAIRY HERD MANAGEMENT ...selection, breeding, group feeding, animal health, milking, and record management; management of mature and young animals; housing and waste management; milking equipment; effective milk and livestock marketing; and professional organizations.

101-101  3 Credits  ACCOUNTING PRINCIPLES ...accounting fundamentals, recording of business transactions, preparation of financial statements, cash basis and accrual business accounting for service enterprises, and merchandising businesses with a manual and computer system.

101-102  3 Credits  ACCOUNTING-INTRODUCTION ...what accounting information is, why it is important, and how it is used by economic decision-makers.

101-105  2 Credits  ACCOUNTING-COMPUTER LEDGER ...applications on calculators and microcomputers such as addition, subtraction, multiplication, division, percent, memory, and business problems; and selected computer software to develop competency in utilization of the computers.

101-110  4 Credits  ACCOUNTING 1 ...the accounting cycle and the end of the fiscal period, specialized journals, receivables and payables, voucher system, deferrals and accruals, inventory systems, depreciation, payroll and payroll taxes, sole proprietorships, and partnerships.

101-120  4 Credits  ACCOUNTING 2 ...concepts and principles covering corporations, capital stocks, dividend bonds, amortization of bond premiums and discounts, manufacturing, job order, process cost systems; variances; managerial accounting including decision making and financial analysis. (Prerequisite: 101-110).

101-141  3 Credits  ACCOUNTING-FINANCIAL ...the accounting cycle, specialized journals, system design, inventory systems, cost-accounting process, job order and standards, management decision-making concepts, and capital investment and financial statement analysis. (Prerequisite: 101-110).

101-145  3 Credits  FINANCIAL MANAGEMENT-MEDICAL ...budgeting, operations, cash flow, capital; rate setting process; working capital management; health care credit; cash and short-term investments; inventory management; long-term financing; leasing; purchasing capital equipment; and reporting operating results.

101-151  3 Credits  ACCOUNTING-PAYROLL ...payroll and personnel records, social security, withholding tax, unemployment compensation, time sheets and time-keeping records, and legal aspects of payroll.

101-156  3 Credits  ACCOUNTING-AUTOMATED APPLICATIONS ...Windows commands, file management, worksheet applications, database applications, macros, evaluation of accounting software, installation of software, and conversion of manual accounting system to a computerized system. (Prerequisite: 101-120, 103-103).

102-101  3 Credits  MATH-FINANCE ...trade and cash discounts, use of financial calculators, time value of money/investment calculations, inventory valuation, depreciation, credit management operations, payroll, financial statement, and finance applications with reliance on financial calculation.

102-110  3 Credits  STATISTICS-BUSINESS ...applications in business and industry, relationships between variables as an aid in decision-making, measures of central tendency and dispersion, probability, sampling, distributions, index numbers, time series, correlation, and linear regression. (Prerequisite: 103-103, 804-120 or algebra checktest).

102-117  2 Credits  FINANCIAL PROBLEM SOLVING ...techniques, operations, tools, and basic concepts; time value of money; computer applications with emphasis on applications of Excel for business problem solving.

102-150  3 Credits  LAW-BUSINESS ...common law contracts and sales contracts: formation, interpretation, performance, and discharge; the law of agency; corporations; and introduction to the American legal system: criminal and tort law.

102-153  3 Credits  FINANCE-PERSONAL ...income and occupations, financial spending plan development, purchasing consumer goods and services, risk management plan development, investment plan development, retirement and estate planning, and financial advising.

102-154  2 Credits  TELLER OPERATIONS ...skills and operational areas consistent with sound job performance as tellers; for employees of financial institutions.

102-158  3 Credits  BUSINESS-INTRODUCTION ...organization/management process of human resources, production, operations, marketing, distribution, and finances; risk management; ethics/legalistic management; international business; accounting, computers, and data processing.

102-169  3 Credits  LAW-BUSINESS PATENTS ...the sources, procedures, and purpose of law; the requirements, effects, and agency relationships liability of contracts; and the methods of application and legal principles of copyrights.

102-172  3 Credits  FINANCIAL STATEMENT ANALYSIS ...types of financial statements, methods of preparation and types of financial statement analysis, statement analysis and evaluation procedures for determining financial condition of organization, and forecasting and control.
Occupational Support Course Descriptions

102-186 COLLECTION-INTRO...collection of accounts, credit techniques, analyzing credit applications, ratio analysis, and aging accounts receivable.

103-101 PC: OVERVIEW USING WORD/EXCEL...absolute beginner's course on using a microcomputer, concepts and terminology, demonstration and practice on Windows/mouse functions, creating/printing word processing documents, and building/formatting spreadsheets.

103-103 MICRO BASICS MS OFFICE 1...introduces computer software packages and applications, basics of operating a computer, Windows concepts, mouse techniques, word processing using Word, creating spreadsheets and charts using Excel. No experience required.

103-109 MICRO BASICS MS OFFICE 2...computer applications; topics include database applications using Microsoft Access, creating presentation graphics using Microsoft Power Point, and using Netscape Navigator to access the World Wide Web Resources. (Prerequisite: 103-103).

104-101 SELLING PRINCIPLES...selling as a career; success factors in selling; personality development; product knowledge; and the sales process involving preparation, approach, presentation-demonstration, handling objections, and closing the sale successfully.

104-105 BUYING TECHNIQUES...retail merchandising: objectives, functions, responsibilities, policies, and procedures; mathematics; inventory control; retail/cost price; terms and discounts; stock/sales ratio; open-to-buy report; buyer responsibility: planning and control, buying, and vendor relationships. (Prerequisite: 105-101).

104-108 CREDIT PROCEDURES...consumer credit: change account and service; installment and residential mortgage; business credit: management, terms of sale, financial institutions, Dun and Bradstreet Inc., and financial statements; and the collection function: creditor rights, extensions and adjustments, and bankruptcy.

104-110 MARKETING PRINCIPLES...marketing management, consumer behavior, market segmentation, product decisions and management, distribution, promotional decisions, pricing, market research, and international marketing strategy planning.

104-124 MARKETING APPLICATIONS-PC...the use of Microsoft Powerpoint as a tool to create effective, professional-looking marketing presentations.

104-147 MARKETING-INDUSTRIAL...strategies to reach industrial consumers, environment in organizational buying behavior, procurement, organizational behavior, logistics, strategic planning, and industrial marketing strategy components.

104-148 INTERNATIONAL MARKETING...tools necessary for the student to understand the risks, rewards, and the technical aspects of doing business in a global environment. (Prerequisite: 104-110).

104-162 RETAIL TRENDS...learning merchandise forecasting and retail management concepts by analyzing consumer behavior and past trends, and applying knowledge to current and future market environment.

104-176 CONSUMER BEHAVIOR...motivation and personality, information processing, life styles, group influences, post-purchase behavior, and other behaviors related to marketing.

104-181 SELLING TECHNIQUES-ADVANCED...professional image, listening skills, style, flexibility, ethical stances, sales activity, organization, body language, computerized records, team selling, needs assessment, selling aids, sales proposals, negotiation, objectives, response, closing, follow-up activities. (Prerequisite: 104-101).

104-191 CUSTOMER SERVICE MANAGEMENT...develop professional telephone etiquette, explore customer service work environments, identify and analyze customer service failures, resolve problems cost effectively; set complaint policies and communication techniques to handle complaining customers.

104-192 MERCHANDISE MANAGEMENT...basic theories of merchandising applied to the current retail environment. (Prerequisite: 105-101).

104-194 MERCHANDISING-VISUAL...display as a selling medium, skillful use of mannequins in a display, use of elements and principles of design in displays, and professional sign production for displays.

104-197 MARKETING-APPAREL...fashion industry, fashion theories, the role of clothing, customer history, designers: masters and current, wardrobe planning and coordination, body structure, color analysis, related and auxiliary fashion industries, and fashion consumers.

104-313 RETAIL MERCHANDISING...characteristics of a small business, planning and organizing a new jewelry business, marketing and selling the jeweler's product or service, profit planning and control, and jewelry merchandising.

105-101 BUSINESS MATH...percentage, interest, promissory notes, borrowing, credit charges, payroll records and deductions, property tax, sales tax, inventory valuation, depreciation, mark-up, cash and trade discounts, stocks and bonds, and financial statement analysis.

106-102 TRANSCRIPTION FUNDAMENTALS 1...an introduction to the use of transcribing equipment in conjunction with computers to review document formatting, spelling, punctuation, and business grammar.

106-107 KEYBOARDING-SPEED/ACCURACY...improving speed and accuracy on the alpha keyboard using diagnostic software to prescribe corrective practice to improve key-stroking patterns. (Prerequisite: 106-145).

106-109 INFORMATION PROCESSING APPLICATIONS 1...information processing cycle; introduction to Windows 3.1; MS-WORD software for creating, formatting, storing, revising, and printing documents; ACCESS software to create, revise, sort, select, and print records and reports. (Prerequisite: 40 WPM touch keyboarding).
Occupational Support Course Descriptions

106-121 INFORMATION PROCESSING APPLICATIONS 2 2 Credits
...the basics of Microsoft Windows 3.1 File Manager, Excel spreadsheet, and PowerPoint presentation graphics. (Prerequisite: 106-109).

106-135 TRANSCRIPTION-LEGAL/MEDICAL 2 Credits
...transcribing legal or medical documents from recorded dictation, producing mailable copy, and proofreading legal or medical formats and vocabulary.

106-141 INFORMATION PROCESSING-LEGAL 3 Credits
...various computerized methods used to open new client files; and organizing and maintaining documentation necessary for computerized litigation, document creation, and law office administration. (Prerequisite: 106-109).

106-145 KEYBOARDING 1 Credit
...the alpha-numeric keyboard on a microcomputer, the ability to transfer keyboarding skills to a standard typewriter keyboard, and the use of an interactive software package on a microcomputer.

106-148 WORD PROCESSING-BEGINNING 1 Credit
...basic operations: create, store, print, revise, spellcheck, and format business documents using WordPerfect 5.1.

106-149 WORD PROCESSING-INTERMEDIATE 1 Credit
...creating, storing, printing, revising, and formatting business documents; and using software on a personal computer.

106-150 TRANSCRIPTION FUNDAMENTALS 2 3 Credits
...an introduction to the use of transcribing equipment with emphasis on computers to review document formatting, proofreading, word mastery, and listening. (Prerequisite: 106-102).

106-153 PROFESSIONAL PROFILE 3 Credits
...workplace attributes such as attitude, appearance, habits, and techniques for success and promotion; leadership and organizational skills; and current trends/issues in the workplace.

106-154 PROOFAMATICS/LANGUAGE 1 Credit
...proofreading skills for documents and CRT screens, reducing errors, increasing productivity, sharpening basic language skills, and communicating more accurately.

106-157 OFFICE POLITICS 1 Credit
...tactics necessary to compete on the job including political tendencies, a campaign to boost your career, blunders, outwitting people, controlling the use of politics, and practicing sensible and ethical politics.

106-160 MANAGEMENT SKILLS FOR THE OFFICE 2 Credits
...office management processes and techniques which would include planning, organizing, staffing, budgeting, controlling, and evaluating.

106-166 INFORMATION PROCESS THEORY/APPLICATION 3 Credits
...the information processing cycle; DOS commands; basic Windows 3.1; WordPerfect software: creating, formatting, storing, revising, and printing documents; ACCESS software to create, revise, sort, select, and print records.

106-171 MEETINGS-ORGANIZING 1 Credit
...all the steps of the meeting process from pre-meeting preparations to post-meeting follow-up; a layperson's approach to parliamentary procedures; for all types of meetings.

106-172 TELEPHONE SKILLS 1 Credit
...using the telephone effectively and efficiently in the world of work; telephone features, equipment, message taking, cellular technology, pagers, and electronic and voice mail.

106-345 INFORMATION PROCESS-BASIC 1 Credit
...basics of Microsoft Windows 3.1 and Word for Windows: multi-tasking, group windows, creating, saving, printing, editing, and basic formatting.

106-350 PROFESSIONAL DEVELOPMENT 2 Credits
...attitude development, appearance and habits for success and promotion, communication strategies, stress management, and how to get along with coworkers and supervisors.

106-355 COMPUTER: CASE TOOLS-INTRODUCTION 2 Credits
...CASE concepts, terminology, methodologies, technologies, and people factors; and development of skills to design and develop business applications using CASE tools. (Prerequisite: 107-120, 107-123).

107-143 COMPUTER: RPG PROGRAMMING-ADVANCED 3 Credits
...advanced RPG operation codes, subfile programming, data and parameter passing, and integration of control language (CL) commands in RPG programs.

107-144 COMPUTER: CURRENT TECHNOLOGY 3 Credits
...current issues and trends in the computer science area; possible topics: the Internet, visual programming, multimedia, computer security and ethics, and client/server.

107-155 MICRO: SPREADSHEET-ADVANCED 1 Credit
...the complex features of Lotus: range name commands, file handling commands, and macros.

107-158 MICRO: DOS/HARDDISK 1 Credit
...using a DOS-based microcomputer; advanced DOS features: subdirectories, system files, batch files, and the DOS Shell program; and Wordperfect 5.1.

107-159 MACINTOSH SYSTEMS MANAGEMENT 3 Credits
...computer essentials, Macintosh usage in business, operating system, directory structure, file management, peripherals, and future directions in Macintosh computing.

107-173 MICRO PROGRAMMING C 3 Credits
...the Turbo "C" and C++ integrated development environment to construct programs, data types, control structures; library and user defined functions; disk I/O; and dynamic memory allocation. (Prerequisite: one programming course).

107-174 COMPUTER: MIDRANGE SYSTEMS 2 Credits
...AS/400 hardware, architecture, menus and user interface, control language and commands, work management, security, backup and recovery, data and data representation, and relational database.

107-177 MICRO HARDWARE TROUBLESHOOTING 2 Credits
...advanced microcomputer hardware maintenance, troubleshooting, diagnosis, and repair. (Prerequisite: 107-162).

107-179 MICROCOMPUTER NETWORKING 2 Credits
...installing, tuning, and documenting computer networks; how to maintain and troubleshoot networks; inter-networking and wide-area networks; and Novell NetWare network technology. (Prerequisite: 107-182).
107-351  PC OPERATIONS-INTRODUCTION  1 Credit
   The alpha-numeric keyboard on computer, interactive software package, introduction to Windows 3.1, Windows components, laptop computers in shop, and on-line with Internet.

109-162  HOSPITALITY-PURCHASING  3 Credits
   Marketing distribution systems, purchasing organization/functions, specifications, supplier selection, ordering process, receiving, storage, convenience foods, processed food, groceries, dairy, eggs, poultry, seafood, meat, non-food items, service, furniture, fixtures, and equipment.

109-163  BEVERAGE MANAGEMENT  3 Credits
   Beverage industry, equipment, facility design considerations, staffing, beverage classification, set-up, mixing, service procedures, selling techniques, purchasing, receiving, storage, budgeting, marketing, third-party liability, regulations, and licensing.

109-166  RESTAURANT OPERATIONS MANAGEMENT  3 Credits
   Restaurant organization, management functions, terminology, nutrition, truth in menu, social issues, pricing, production, staffing/scheduling, service, safety/sanitation, facility design/layout, equipment, management reports, laws and regulations, technology, and automation.

110-122  CREDITOR/DEBTOR RELATIONS  3 Credits
   Legal rights of creditors and debtors, collection of outstanding debts, execution of judgments, small claims courts, bankruptcy procedures, and filing bankruptcy petitions and schedules. (Prerequisite: 102-150, 110-111).

110-168  PARALEGAL CRIMINAL PROCEDURES  3 Credits
   Substantive and procedural criminal law, the role of paralegals in both the prosecution and defense of criminal actions, emphasis on investigations and preparation of legal documents.

110-169  INDIAN LAW  3 Credits
   Wisconsin Indians, tribal sovereignty, federal/Indian relations, treaty making, removal/reservation life, assimilation, reorganization, termination, self-determination, tribal governments, tribal courts, gaming, and other contemporary issues.

111-102  PHOTOGRAPHY-35MM  3 Credits
   Designing pictures, getting to know your camera, shutter speeds, focusing, lenses, fillers, lighting, close-ups, film processing, printing, and jobs in photography.

111-110  MACINTOSH IMAGE EDITING-ADVANCED  3 Credits
   Manipulating color in Photoshop images, preparing separations, preparing Web pages, and developing 3-D images. (Prerequisite: 111-101 or appropriate occupational experience).

111-310  JEWELRY DESIGN/ILLUSTRATION  2 Credits
   Basic drawing skills, use of templates, shading, drawing stones, and basic jewelry design, designing an original piece of jewelry from concept through presentation and promotional illustration.

182-131  NEGOTIATIONS  3 Credit
   Techniques and skills used in bargaining to maximize a company's profits and competitiveness; determining costs involved in carrying inventory, handling, and production to provide cost savings; techniques used in design.

182-132  WAREHOUSING  3 Credit
   Origins, history, development, role, functions, and management in warehousing; transportation, accountability; operations and contingency planning; protecting the warehouse operation; contracts and liability; and inventories and cycle counting.

182-180  SYSTEMS/TECHNOLOGIES  1 Credit
   The strategic integration of production and inventory management functions including master planning, production activity control, just-in-time, materials requirements planning, and new and emerging technologies in each area.

182-182  JUST IN TIME  1 Credit
   Employer involvement in continuous improvement and elimination of waste: total quality control, reduced set-up/lead time, pull systems, cellular manufacturing, supplier and networks, system interfaces, and implementation.

182-183  MATERIALS CAPACITY REQUIREMENTS PLANNING  1 Credit
   Structure and use a bill of material (BOM) to successfully develop master schedules with material requirements planning (MRP).

182-184  INVENTORY MANAGEMENT  1 Credit
   Objectives, performance measures, functions, independent/dependent demand, aggregate, multi-item, item-level, inventory accounting and physical control, and distribution inventory.

182-185  PRODUCT ACTIVITY CONTROL  1 Credit
   Objectives and organization, production environments, scheduling considerations, data implications, capacity loading, release to production, lead times, priority control and dispatching status control, measurements, and shop floor control.

182-187  MASTER PLANNING  1 Credit
   The first step that translates the business plan down to the detailed master production schedule including forecasting techniques, accuracy, demand management, and development of the master production schedule.

182-188  PURCHASING-ADVANCED  2 Credits
   Technical aspects of the purchasing functions; legal considerations in making purchasing decisions; international sourcing; negotiation strategies; and managing the buying plan.

182-189  PURCHASING TRENDS  1 Credit
   Trends in the field of purchasing; offshore sourcing, vendor analysis and certification, analyzing financial reports, and other emerging trends.

194-151  APPRAISAL-LICENSURE I  4 Credits
   A rudimentary knowledge of the Uniform Standards of Professional Appraisal Practice, the techniques for property evaluation (primarily residential) that the course meets the educational requirements for Real Estate Appraiser Licensure in Wisconsin.

194-152  APPRAISAL-LICENSURE II  1 Credit
   A continuation of Real Estate Appraisal Licensure I. The course explains statistical analysis and market analysis as well as the direct sales comparison and income approaches to appraising income property.

194-154  APPRAISAL-Ethics  1 Credit
   The Uniform Standards of Professional Appraisal Practice-Ethics: the Ethics Provision, the Competency Provision, and the Departure Provision. The provisions and the way they affect appraisal practice are fully explored.
Occupational Support Course Descriptions

194-155 2 Credits
REAL ESTATE BROKER MANAGEMENT
...contracts, approved forms, trust accounts, escrow, closing statements, business management and marketing, financial and office management, personnel, business ethics, consumer protection, and specialty areas.

196-110 3 Credits
SUPERVISION PRINCIPLES ...modern components of a supervisor's job: motivation, job analysis, job design, group behavior, communication skills, leadership styles, planning, policies, organizing, control, coaching/counseling, performance evaluation, discipline, and conflict resolution.

196-151 3 Credits
MANAGEMENT PRACTICES ...the managerial aspects common to all management positions regardless of technical specialty: planning, organizing, staffing, directing, and controlling, and their relation to the daily job of the manager.

196-160 3 Credits
SUPERVISOR/PERSONNEL MANAGEMENT ...the role and function of supervision: supervisory skills and techniques, problem analysis and decision-making, performance and motivation, communications, time and cost control, discipline, and personnel management: staffing and labor relations.

196-348 1 Credit
POWER HOUSE-SUPERVISION ...the role of the supervisor in current industrial settings, and review of the duties, skills, responsibilities, and challenges of supervision.

303-180 2 Credits
NUTRITION-BASIC ...dietary guidelines, nutrients, carbohydrates, proteins, fats, alcohol, vitamins, minerals, water, digestion, absorption, nutrient metabolism, weight control, and oral health and disease diet. (Prerequisite: 806-163).

442-350 2 Credits
WELDING-MACHINE TRADES ...oxyacetylene welding; brazing; soldering; cutting; hardsurfacing; out-of-position welding; arc welding; machines/accessories, running beads; and types of joints, welding thin gauge, arc cutting, and heating.

442-352 2 Credits
WELDING-METAL WORKING PROCESSES ...welding and machine shop safety, blueprint reading, basic arc and oxyacetylene welding techniques, precision measuring tools, layout, use of hand tools, band saw, drillpress, lathe, milling machine.

503-181 2 Credits
NICET SPRINKLERS-ADVANCED ...the NICET certification process as that relates specifically to Level II and Level III certification in the Fire Protection subfield of automatic sprinkler system design. (Prerequisite: 503-180).

503-182 2 Credits
NICET HAZARDS-ADVANCED ...how to successfully complete the exam requirements for NICET certification at Levels 2, 3, or 4 in the subfield of special hazards systems design. (Prerequisite: 503-180).

503-183 2 Credits
NICET ALARMS-ADV ...the NICET certification process and content as that relates to Level II and Level III certification in the NICET Fire Protection subfield of fire alarm systems.

504-116 3 Credits
CRIMINAL JUSTICE-INTRODUCTION ...causes of crime, criminal law, law enforcement, courts, and corrections on the local, state, and federal levels.

504-144 3 Credits
POLICE-COMMUNITY RELATIONS ...discrimination, police role, community awareness and involvement, professionalism in policing, police-citizen partnerships, work-related stress causes, problem-oriented policing, principles of crime prevention, and the problems of a culturally diverse society.

504-151 3 Credits
NARCOTICS/VICE INVESTIGATION ...historical development, organized crime, vice investigations, laws, types of drug enforcement, role of informants, clandestine labs, conspiracies, drug testing, asset seizure and forfeiture, and coordination of a drug investigation.

504-171 2 Credits
CORRECTIONS INTERNSHIP ...training in criminal and juvenile justice settings under supervised observation and participation.

504-174 2 Credits
EVC/FIRST RESPONDER ...emergency patrol vehicle use and emergency first aid at the scene.

504-175 1 Credit
DEFENSE/ARREST TACTICS ...subject control principles: theory, body mechanics, techniques, and simulation. (Prerequisite: 15 Program Credits - Police Science).

504-176 2 Credits
LAW ENFORCEMENT INTERNSHIP ..."hands-on" law enforcement phases, monitored by an agency-approved police officer and college instructor.

504-177 1 Credit
FIREARMS TRAINING ...firearm use/care, deadly force use justification, firearms-holster departmental policy, practice/comb bat handgun and shotgun use, and tactics/procedures following firearms combat. (Prerequisite: 30 Program Credits - Police Science).

504-178 1 Credit
SUBJECT CONTROL-PRINCIPLES ...subject control principles (POS). psychomotor skill development, techniques, and simulation. (Prerequisite: 15 Program Credits - Corrections Science).

504-179 1 Credit
JAIL HEALTH/FIRE SAFETY ...cardiopulmonary resuscitation, first aid, inmate health care provisions, health care record maintenance, medication control, search/inmate rescue, inmate evacuation, fire suppression/detection/alarm responses, control ignition, and fuel sources. (Prerequisite: 15 Program Credits - Corrections Science).

506-185 3 Credits
ENVIRONMENTAL/FIELD STUDY ...the work and workflow of a production laboratory, business organization and structure, job assignments, and occupational and experience reports. (Prerequisite: 806-155).

508-150 1 Credit
CLINICAL-EXTENDED ...the clinical applications of dental hygiene preventive and auxiliary procedures.

508-160 2 Credits
PERIODONTAL THERAPY-ADV ...medical/dental history, patient/operator positioning, instrumentation principles, instrument design/sharpening, sonic/ultrasonic scalers, selective/abrasive polishing devices, patient assessment, treatment planning, case management, root planing, etiology, plaque control, and chemotherapeutic agents.

508-172 2 Credits
DENTAL HYGIENE-NATIONAL BOARD REVIEW ...information pertinent to the Dental Hygiene National Board Examination, study strategies, and test-taking skills.
### Occupational Support Course Descriptions

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>510-118</td>
<td>2 Credits</td>
<td>NURSING PROCESS 3 TRANSITION...the trends and issues in maternal-child nursing; the healthy and at risk woman, her newborn, and family, during pregnancy, labor/delivery, and following delivery; and family planning. (Prerequisite: 806-163, 806-182).</td>
</tr>
<tr>
<td>510-119</td>
<td>2 Credits</td>
<td>NURSING PROCESS 4 TRANSITION...the nursing process as a method to meet needs of clients with respiratory dysfunction, fluid and electrolyte imbalance, endocrine dysfunction, including diabetes; altered cellular metabolism; and visual impairment. Theory only. (Prerequisite: 806-163, 806-182).</td>
</tr>
<tr>
<td>515-162</td>
<td>1 Credit</td>
<td>CLINICAL SIMULATION REVIEW 1...preparation for the testing processes utilized by the National Board for Respiratory Care; all testing processes will be reviewed utilizing appropriate content.</td>
</tr>
<tr>
<td>515-163</td>
<td>1 Credit</td>
<td>CLINICAL SIMULATION REVIEW 2...the diagnosis, management, and treatment received by cardiopulmonary patients.</td>
</tr>
<tr>
<td>524-146</td>
<td>3 Credits</td>
<td>SPORTS MEDICINE/ATHLETIC TRAINING...the basic principles involved in the prevention, treatment, and rehabilitation of athletic injuries (Prerequisite: 524-113, 524-132).</td>
</tr>
<tr>
<td>524-151</td>
<td>2 Credits</td>
<td>FITNESS TESTING/PRESCRIPTION...concepts of &quot;wellness,&quot; &quot;health,&quot; and &quot;fitness&quot;; nutrition and weight management; body types; ergonomic aids; sudden death syndrome; and development of fitness programs for special populations. (Prerequisite: 806-182, 806-187).</td>
</tr>
<tr>
<td>601-150</td>
<td>3 Credits</td>
<td>HVAC INTERNSHIP...applications of theory, skills, and techniques in the HVAC profession.</td>
</tr>
<tr>
<td>605-114</td>
<td>4 Credits</td>
<td>AC/DC PRINCIPLES...basic concepts of AC/DC electrical circuits including Ohm's Law, series/parallel resistance, circuit dividers, meter Kirchhoff's Laws, conductors/insulators, batteries, electromagnetic induction, and AC voltage/current. (Prerequisite: 804-150).</td>
</tr>
<tr>
<td>605-118</td>
<td>2 Credits</td>
<td>TECHNICAL SKILLS/PRACTICES...method learning and general practice experience associated with electrical/electronic parts assembly, disassembly, repair, fabrication, and documentation.</td>
</tr>
<tr>
<td>605-138</td>
<td>3 Credits</td>
<td>CONTROLS/PROGRAMMABLE SYSTEMS...control applications using ladder logic control, input devices, relay and timing control circuits, and programmable logic control (PLC).</td>
</tr>
<tr>
<td>605-195</td>
<td>3 Credits</td>
<td>INTERNSHIP...training within an appropriate setting by actual work experience and observation.</td>
</tr>
<tr>
<td>606-101</td>
<td>3 Credits</td>
<td>COMPUTER AIDED DRAFTING-ELECTRONIC TECHNICIANS...basic DOS commands, AutoCAD commands, ladder logic diagrams, control panels, control cabinets, circuit boards, and hydraulic/pneumatic circuits.</td>
</tr>
<tr>
<td>606-105</td>
<td>2 Credits</td>
<td>COURSE IN ELECTRONICS...the applications of electricity and components in the fields of automotive, residential, and industrial electrical systems.</td>
</tr>
<tr>
<td>606-106</td>
<td>2 Credits</td>
<td>LAND SURVEYING AND SITE DEVELOPMENT...transit/level use, note keeping, bearings and azimuths, distance measurement, contour maps, stadia, legal descriptions, public land subdivision, construction surveys, site plans, zoning ordinances, easements, and parking lot/street layout.</td>
</tr>
<tr>
<td>606-112</td>
<td>1 Credit</td>
<td>ENGINEERING APPLICATIONS...basics of a computer system, computer terminology, DOS, Windows NT, Microsoft Word, Microsoft Excel, and AutoCAD Release 13.</td>
</tr>
<tr>
<td>606-115</td>
<td>3 Credits</td>
<td>CAD (COMPUTER AIDED DRAFTING)...entry level computer-aided graphics with AutoCAD software; using basic and advanced drawing, display, editing, dimensioning, and plotting commands. (Prerequisite: 606-114 -OR- 614-112).</td>
</tr>
<tr>
<td>606-116</td>
<td>1 Credit</td>
<td>CAD (COMPUTER AIDED DRAFTING)-INTRODUCTION...CAD terminology, drawing preliminaries, basic inquiry and setting commands, layer setting and manipulation, basic drawing and display commands, basic edit commands, and plotting. (Prerequisite: 606-114).</td>
</tr>
<tr>
<td>606-117</td>
<td>1 Credit</td>
<td>CAD (COMPUTER AIDED DRAFTING)/DESIGN 1...drawing and display commands, edit commands, plotting, blocks, and attributes. (Prerequisite: 606-116).</td>
</tr>
<tr>
<td>606-118</td>
<td>1 Credit</td>
<td>CAD (COMPUTER AIDED DRAFTING)/DESIGN 2...CAD concepts, system operations, and basic command operations; advanced commands involving data base, display, editing, dimensioning, and plotting to create engineering drawings. (Prerequisite: 606-117).</td>
</tr>
<tr>
<td>606-120</td>
<td>2 Credits</td>
<td>CAD-ARCHITECTURAL...entry-level computer-aided graphics with AutoCAD software, using basic and advanced architectural drawing, display, editing, dimensioning, and plotting commands.</td>
</tr>
<tr>
<td>606-157</td>
<td>3 Credits</td>
<td>COMPUTER INTEGRATED MANUFACTURING...design, part programming, CNC machining, and file translation through integration of four manufacturing softwares. (Prerequisite: 606-113, Corequisite machine shop).</td>
</tr>
<tr>
<td>607-106</td>
<td>2 Credits</td>
<td>LAND SURVEYING AND SITE DEVELOPMENT...transit/level use, note keeping, bearings and azimuths, distance measurement, contour maps, stadia, legal descriptions, public land subdivision, construction surveys, site plans, zoning ordinances, easements, and parking lot/street layout.</td>
</tr>
<tr>
<td>607-144</td>
<td>3 Credits</td>
<td>SURVEYING 3...computing unknown line length/bearing computation, two-line point intersection, arc lines, subdivision map lines/points, construction surveying, latitude/longitude, plane coordinates, astronomical observation, and road/street design. (Prerequisite: 607-131).</td>
</tr>
<tr>
<td>607-182</td>
<td>3 Credits</td>
<td>SURVEYING LAW-LAND...the legal aspects of land surveying, adverse possession, lot proration, riparian rights, deed interpretation, eminent domain, planning a boundary survey, and the professional ethics of a land surveyor. (Prerequisite: 607-134).</td>
</tr>
<tr>
<td>607-195</td>
<td>3 Credits</td>
<td>CIVIL ENGINEERING INTERNSHIP...the application of theory, skills, and techniques in the civil engineering profession.</td>
</tr>
<tr>
<td>608-471</td>
<td>0.9 Credits</td>
<td>LANDCAD/INTRODUCTION...basic equipment, terminology and syntax, practice with start-up, drafting, drawing storage and shut-down procedures. No previous CAD experience required. Featuring LANDCADD for landscape design and estimating.</td>
</tr>
<tr>
<td>614-126</td>
<td>4 Credits</td>
<td>ARCHITECTURAL MECHANICAL SYSTEMS...reading building and mechanical systems plans; locating, understanding, and interpreting working drawings; and utilizing Computer Assisted Drafting (CAD) techniques to generate architectural working drawings.</td>
</tr>
<tr>
<td>614-72</td>
<td>3 Credits</td>
<td>MODELS-MACHINE...working models, preliminary through final prototype: plastic mechanisms, motions, characteristics, combinations, mechanical advantages, fits, clearances, threads, gears, levers, cams, motors, fasteners, and methods.</td>
</tr>
</tbody>
</table>
# Occupational Support Course Descriptions

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>614-175</td>
<td>3</td>
<td>ARCHITECTURAL MODELS</td>
<td>basic modeling processes, construction methods, planning considerations, and finishing techniques; fabrication of massing models and mock-ups of buildings, structural components, wall sections, and window details.</td>
</tr>
<tr>
<td>614-176</td>
<td>3</td>
<td>MODEL FINISHING</td>
<td>industrial finishes; textures and methods of applications commonly used in the profession; variety of finishes using airbrushes; spray guns, and brushes; application of several industrial finishes.</td>
</tr>
<tr>
<td>614-195</td>
<td>3</td>
<td>MODEL BUILDING INTERNSHIP</td>
<td>the application of theory, skills, and techniques in model building.</td>
</tr>
<tr>
<td>620-195</td>
<td>3</td>
<td>INTERNSHIP</td>
<td>training within an appropriate setting by actual work experience and observation.</td>
</tr>
<tr>
<td>623-197</td>
<td>3</td>
<td>QUALITY ASSURANCE INTERNSHIP</td>
<td>application of theory, skills, and techniques in the quality assurance profession.</td>
</tr>
<tr>
<td>801-101</td>
<td>3</td>
<td>GRAMMAR-PRACTICAL APPLICATIONS</td>
<td>homophones, sentence structure, agreement, pronoun usage, modifiers, parallelism, shifts in time and person, correcting wordiness, punctuation, capitalization, and active and passive voice.</td>
</tr>
<tr>
<td>801-162</td>
<td>3</td>
<td>COPYWRITING-INTRODUCTION</td>
<td>writing for advertising, writing style, principles of advertising copy, editing and rewriting, strategy, media restrictions, copy format, layouts, advertising copy for newspapers, flyers, brochures, magazines, and radio. (Prerequisite: 801-195).</td>
</tr>
<tr>
<td>801-170</td>
<td>2</td>
<td>WRITING-PROTECTIVE SERVICES</td>
<td>rationale and methods of police reporting, principles of effective reporting, principles of report writing, organizing reports, writing operational police reports based on case studies. (Prerequisite: 801-195).</td>
</tr>
<tr>
<td>801-175</td>
<td>3</td>
<td>ENGLISH COMPOSITION 1</td>
<td>major forms of nonfiction writing including narration, description, comparison, definition, causal analysis, logical argument, and research paper; writing process including planning, drafting, and revising.</td>
</tr>
<tr>
<td>801-195</td>
<td>3</td>
<td>COMMUNICATION-WRITTEN</td>
<td>the nature and scope of technical writing, document design, graphics, ethics of writing process, definition, description, memos, business letters, resume and cover letter, instructions, summaries, and short reports.</td>
</tr>
<tr>
<td>801-196</td>
<td>3</td>
<td>COMMUNICATION-INTERPERSONAL</td>
<td>the communication process, perception and self-concept, language, listening, nonverbal communication, interpersonal relationships, communication in groups and public communication; prepare and deliver up to two speeches and one group presentation.</td>
</tr>
<tr>
<td>801-197</td>
<td>3</td>
<td>REPORTING-TECHNICAL</td>
<td>principles of report writing and correspondence, proposals, feasibility reports, progress reports, investigation reports, evaluation reports, meeting reports, memos, and correspondence. (Prerequisite: 801-195).</td>
</tr>
<tr>
<td>801-198</td>
<td>3</td>
<td>SPEECH</td>
<td>fundamentals of effective oral presentation to small and large groups: topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and the listening process.</td>
</tr>
<tr>
<td>801-315</td>
<td>2</td>
<td>COMMUNICATION-ORAL</td>
<td>communication principles, perception and self-concept, language, listening, non-verbal communication, interpersonal relationships, communication in a group setting, public communication, two speeches, and one group presentation.</td>
</tr>
<tr>
<td>801-350</td>
<td>2</td>
<td>COMMUNICATION-BASIC</td>
<td>reading level screening, forms, letters, memos, job application, resume, application letter, follow-up letter, mock interview, procedures/instructions, trip report, listening skills, interpersonal skills, word processing, and job search plan preparation.</td>
</tr>
<tr>
<td>801-356</td>
<td>2</td>
<td>COMMUNICATION-APPLIED (AUTO)</td>
<td>job application process: application form, resume, interview request (cover) letter, and interview techniques; communicating with customers: service report forms and dealing with angry/frustrated customers; and small business project.</td>
</tr>
<tr>
<td>801-361</td>
<td>2</td>
<td>CORRESPONDENCE-BUSINESS</td>
<td>letter and memorandum format; business writing characteristics; and business letter proofreading techniques to achieve organization, coherence, friendliness, clarity, and conciseness.</td>
</tr>
<tr>
<td>801-364</td>
<td>1</td>
<td>WRITING-EMPLOYMENT</td>
<td>job application process: application forms, resume, interview request (cover) letter, follow-up letter, and interview techniques; and job related writing: procedures, descriptions, and forms.</td>
</tr>
<tr>
<td>801-385</td>
<td>1</td>
<td>COMMUNICATING-WRITING</td>
<td>writing techniques for memos and letters, descriptions, instructions, and job seeking documents.</td>
</tr>
<tr>
<td>801-386</td>
<td>1</td>
<td>COMMUNICATING-INTERPERSONAL</td>
<td>communication functions including needs, perceptions, self-concept, conflict resolution, language, listening, non-verbal communication, and telephone and customer services.</td>
</tr>
<tr>
<td>801-387</td>
<td>1</td>
<td>GRAMMAR-BUSINESS APPLICATIONS</td>
<td>words commonly confused, spelling rules, punctuation, sentence structure, agreement, parallelism, and modifiers.</td>
</tr>
<tr>
<td>804-120</td>
<td>3</td>
<td>MATH-TECHNICAL ALGEBRA</td>
<td>operations and properties, expressions and equations, inequalities, real numbers, polynomials, linear sentences, radicals, quadratics, and functions.</td>
</tr>
<tr>
<td>804-130</td>
<td>3</td>
<td>ALGEBRA/TRIGONOMETRY</td>
<td>numerical computation/calculators; elementary algebra concepts; linear equations and word problems; functions; graphing; geometric concepts; right triangle trigonometry; vectors; oblique triangles; arc length; linear/angular velocity. (Prerequisite: 804-120 or equivalent).</td>
</tr>
</tbody>
</table>
### Occupational Support Course Descriptions

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<tr>
<td>804-131</td>
<td>3</td>
<td>ALGEBRA-INTERMEDIATE</td>
<td>...factors/factoring, fractions/fractional equations, systems of linear equations, exponents and radicals, quadratic equations, parabolas, ratio proportion and variation, exponential and logarithmic functions. (Prerequisite: 804-130).</td>
</tr>
<tr>
<td>804-132</td>
<td>3</td>
<td>GEOMETRY-ANALYTIC</td>
<td>...trigonometric functions, graphs, trigonometric identities and equations, straight lines, circles, parabolas, and ellipses; inequalities/linear programming; introductory statistics and probability. (Prerequisite: 804-131).</td>
</tr>
<tr>
<td>804-150</td>
<td>5</td>
<td>MATH 1-TECHNICAL</td>
<td>...numerical computation/calculations, algebra concepts, linear equations, functions, graphing, geometric concepts, right triangle trigonometry, vectors, factoring, algebraic fractions, systems of linear equations, quadratic equations, oblique triangles, arc length, linear/angular velocity. (Prerequisite: 854-730 OR 804-120).</td>
</tr>
<tr>
<td>804-151</td>
<td>3</td>
<td>MATH-DATA PROCESSING LOGIC</td>
<td>...algorithms, percent applications, interest applications, inventory, depreciation, payroll, hexadecimal arithmetic, flow diagrams, sets, logic, and decision tables. (Prerequisite: Algebra).</td>
</tr>
<tr>
<td>804-152</td>
<td>3</td>
<td>MATH-PROTECTIVE SERVICES</td>
<td>...review of fractions and decimals, percentages, use of the traffic template, accident scenes, statistics, order of operations, and formula manipulation.</td>
</tr>
<tr>
<td>804-154</td>
<td>3</td>
<td>ALGEBRA-AGRIBUSINESS</td>
<td>...mathematical applications relating to agribusiness; land area, moisture, germination and seeding rates; fertilizer and pesticide application; ration problems; order of operations; linear equations; formula rearrangement; unit conversions; percent equations; statistics.</td>
</tr>
<tr>
<td>804-160</td>
<td>4</td>
<td>MATH 2-TECHNICAL</td>
<td>...trigonometric functions and graphs; exponential/logarithmic functions; complex numbers; exponents and radicals; straight lines, circles, parabolas, and ellipses; trigonometric identities and equations; ratio, proportion, and variation; introductory statistics/probability. (Prerequisite: 804-150).</td>
</tr>
<tr>
<td>804-161</td>
<td>3</td>
<td>MATH-DATA PROCESSING ALGEBRA/STATISTICS</td>
<td>...algebraic expressions, equations, functions, systems of equations, determinants, linear programming, presentation of statistical data, measures of central tendency and dispersion, normal distribution, probability * and chi-squares. * (alternative or optional topic) (Prerequisite: 804-151, Algebra).</td>
</tr>
<tr>
<td>804-170</td>
<td>4</td>
<td>MATHEMATICS 3-TECHNICAL CALCULUS</td>
<td>...derivatives of algebraic functions; applications to velocity, rate, and maximum-minimum problems; integration and application to moment of inertia, pressure, and work; and applications to technology: electrical, civil, and mechanical. (Prerequisite: 804-160).</td>
</tr>
<tr>
<td>804-175</td>
<td>2</td>
<td>COMPUTER: POLICE</td>
<td>...computer-based systems and terminology, use of word processing, incident reporting systems, and computer crime. (Prerequisite: 106-145).</td>
</tr>
<tr>
<td>804-181</td>
<td>1</td>
<td>COMPUTER: APPLICATIONS-ADN</td>
<td>...the microcomputer and its use in a medical environment; computer terminology; how to use a software program to create word processing documents, database reports, spreadsheets, and FAMIS.</td>
</tr>
<tr>
<td>804-182</td>
<td>1</td>
<td>COMPUTER: APPLICATIONS</td>
<td>...the microcomputer and its use in a medical environment; computer hardware and terminology; using software to create documents, database reports, spreadsheets, and graphs.</td>
</tr>
<tr>
<td>804-315</td>
<td>1</td>
<td>MATH-BASIC</td>
<td>...fractions, decimals, ratio, proportions, percent and percentage word problems, using calculators.</td>
</tr>
<tr>
<td>804-317</td>
<td>2</td>
<td>MATH-DATA PROCESSING</td>
<td>...algorithms; algebraic expressions; equations; percent applications; interest applications; inventory; depreciation; payroll; binary, octal, and hexadecimal arithmetic; flow diagrams; sets; logic; decision tables. (Prerequisite: Algebra).</td>
</tr>
<tr>
<td>804-320</td>
<td>1</td>
<td>MATH-AUTO BODY</td>
<td>...ratios and percent as they apply to paint mixing, calculating overlap, clearcoat, two-tone and gravel guard on an estimate; and determining voltage and current of series and parallel circuits. (Prerequisite: 804-315).</td>
</tr>
<tr>
<td>804-324</td>
<td>1</td>
<td>MATH 1-INDUSTRIAL</td>
<td>English and metric linear measurement and computations; direct and indirect proportions; gear, pulley, and taper applications; formula evaluation; plane geometry. (Prerequisite: 804-315).</td>
</tr>
<tr>
<td>804-325</td>
<td>1</td>
<td>MATH-WELDING</td>
<td>...units, prefixes, formulas, and measurements. (Prerequisite: 804-315).</td>
</tr>
<tr>
<td>804-326</td>
<td>1</td>
<td>MATH 1-WOOD TECH</td>
<td>...linear measure, perimeter, circumference, arc length, square measure; area of polygons and circles; board measure; volume measure; volume of rectangular solids, cylinders, composite figures; weight measure, ratio-proportion, and percentage applications. (Prerequisite: 804-315).</td>
</tr>
<tr>
<td>804-334</td>
<td>1</td>
<td>MATH 2-INDUSTRIAL</td>
<td>...geometric principles of parallel lines, circular concepts of chords, tangents, and secants, triangular relationships, pythagorean theorem, right triangle trigonometry, and machine tool applications using right triangle trigonometry. (Prerequisite: 804-315, 804-324).</td>
</tr>
<tr>
<td>804-336</td>
<td>1</td>
<td>MATH 2-WOOD TECHNICS</td>
<td>...the microcomputer and its use in the wood technologies environment; Windows concepts, creating spreadsheets and charts, and database development using Microsoft Office.</td>
</tr>
<tr>
<td>804-360</td>
<td>2</td>
<td>MATH 1-ELECTRICITY</td>
<td>...signed numbers, order of operations, scientific notation and metric prefixes, calculator operations, algebra and formula evaluation, Ohm's Law, combination circuits, efficiency, resistance and size of wire, trigonometry for alternating current electricity. (Prerequisite: Algebra).</td>
</tr>
<tr>
<td>804-361</td>
<td>2</td>
<td>MATH-AUTO MECHANICS</td>
<td>...simple electrical circuits, interest calculations, linear measure, perimeter, circumference, square measure, area of polygons, volume measure, volume of solids, weights of solids, proportions, gear ratios, taper, formula evaluation and graphs. (Prerequisite: 804-315).</td>
</tr>
<tr>
<td>804-362</td>
<td>2</td>
<td>MATH 1-DIESEL</td>
<td>...whole numbers, fractions, decimals, measures within the metric and US systems, rounding and estimation, ratio and proportion, gear reduction, percent, job ticket completion, formula evaluation.</td>
</tr>
</tbody>
</table>
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<tbody>
<tr>
<td>804-370</td>
<td>2</td>
<td>MATH 2-ELECTRICITY</td>
<td>Alternating current, capacitance, and parallel AC circuits, and power. (Prerequisite: 804-360).</td>
</tr>
<tr>
<td>804-372</td>
<td>2</td>
<td>MATH 2-DIESEL</td>
<td>Applications of percent, scientific notation, and special/similar triangles; work, power, and efficiency calculations. (Prerequisite: 804-362).</td>
</tr>
<tr>
<td>804-374</td>
<td>2</td>
<td>MATH 3-INDUSTRIAL</td>
<td>Algebra, trigonometry, and compound and parallel AC circuits. (Prerequisite: 804-315).</td>
</tr>
<tr>
<td>804-381</td>
<td>1</td>
<td>COMPUTER: MICRO SOFTWARE APPLICATIONS</td>
<td>Microcomputer use in a small business environment; computer hardware and terminology, electronic worksheet, file handling package, and word processing package.</td>
</tr>
<tr>
<td>804-384</td>
<td>2</td>
<td>MATHEMATICS</td>
<td>Scientific notation, metric prefixes, calculator use, review of basic algebra, mathematics applications to Ohm's Law, trigonometry for alternating current, power factors, and capacitance transformers.</td>
</tr>
<tr>
<td>804-385</td>
<td>2</td>
<td>MATHEMATICS-COMPUTER APPLICATION</td>
<td>Basic mathematics, perceptual motor ability, computer applications and applications, pre-programmed microcomputer programs, and applications of computers for the prospective electrician.</td>
</tr>
<tr>
<td>806-131</td>
<td>3</td>
<td>MATERIALS SCIENCE</td>
<td>Classification and identification; mechanical properties; microscopic and spectrographic analysis of materials; heat treatment; procedures of hardening, tempering, and annealing; surface treatment of steels; and effects of alloys on metals.</td>
</tr>
<tr>
<td>806-141</td>
<td>4</td>
<td>MICROBIOLOGY-GENERAL</td>
<td>Use of microscope; microbial growth requirements; preparation and disposal of supplies; and isolation, characterization, enumeration, and identification of microorganisms. (Prerequisite: completion of 1st semester).</td>
</tr>
<tr>
<td>806-150</td>
<td>3</td>
<td>SCIENCE 1-TECHNICAL</td>
<td>Measurement, motion, force, work, power, and energy; impulse and momentum; vectors and vector analysis; rotational mechanics; and rotational motion. (Prerequisite: 804-150).</td>
</tr>
<tr>
<td>806-151</td>
<td>3</td>
<td>SCIENCE-TECHNICAL FOR POLICE</td>
<td>Weights, measures, mechanics, sound, light, and electricity. (Prerequisite: 804-152).</td>
</tr>
<tr>
<td>806-155</td>
<td>4</td>
<td>CHEMISTRY-BASIC</td>
<td>Chemical events and their relationship to combustion, pollution, toxicity, health hazards, drugs, and environment; acidity, oxidation, nomenclature, chemical equilibrium, and radioactivity; appropriate laboratory experiments and demonstrations.</td>
</tr>
<tr>
<td>806-160</td>
<td>3</td>
<td>SCIENCE 2-TECHNICAL</td>
<td>Properties of matter, heat, sound, light, electricity, and magnetism. (Prerequisite: 804-150).</td>
</tr>
<tr>
<td>806-165</td>
<td>5</td>
<td>CHEMISTRY-INTRODUCTION</td>
<td>Modern fundamental principles: atomic structure, chemical bonding, periodic table, molecular structure and properties, solutions, chemical equilibrium, and a survey of organic and biochemistry. (Prerequisite: 806-155).</td>
</tr>
<tr>
<td>806-170</td>
<td>3</td>
<td>SCIENCE-FLUID POWER</td>
<td>Hydraulic and pneumatic principles as applied to system design; circuit designing and design, fluid power components, operations, and applications. (Prerequisite: 804-150, 806-150).</td>
</tr>
<tr>
<td>806-180</td>
<td>4</td>
<td>ANATOMY/PHYSIOLOGY</td>
<td>Principles of pharmacology; regulation and drug standards; specific drug groups; drug interactions; abuse, misuse, and adverse reactions; pharmaceutical management of drugs; oral disease entities and drugs used to treat them. (Prerequisite: 806-183).</td>
</tr>
<tr>
<td>806-182</td>
<td>3</td>
<td>ANATOMY/PHYSIOLOGY 1</td>
<td>The human body as an integrated structural and functional unit including all body systems, cell structure, and physiology; dissect fresh and preserved material and examine a human cadaver. (Prerequisite: High School Biology, Basic Chemistry).</td>
</tr>
<tr>
<td>806-183</td>
<td>4</td>
<td>MICROBIOLOGY</td>
<td>History of microbiology; microbial cellular structure; genetics of microorganisms; major bacterial, viral, parasitic, and fungal diseases; basic immunological theory; and microbiology of the oral cavity. (Prerequisite: 806-163, 806-182).</td>
</tr>
<tr>
<td>806-185</td>
<td>2</td>
<td>PHARMACOLOGY-DENTAL HYGIENIST</td>
<td>Principles of pharmacology; regulation and drug standards; specific drug groups; drug interactions; abuse, misuse, and adverse reactions; pharmaceutical management of drugs; oral disease entities and drugs used to treat them. (Prerequisite: 806-183).</td>
</tr>
<tr>
<td>806-187</td>
<td>3</td>
<td>ANATOMY/PHYSIOLOGY 2</td>
<td>The muscle system, digestive system, metabolism, circulatory system, lymphatic system, respiratory system, urinary system, body fluids and electrolytes, acid-base balance, reproductive system, and genetics. (Prerequisite: 806-182).</td>
</tr>
</tbody>
</table>
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<tr>
<td>806-188</td>
<td>3</td>
<td>ANATOMY/PHYSIOLOGY 2-PTA'S</td>
</tr>
<tr>
<td>806-189</td>
<td>4</td>
<td>PHYSIOLOGY-CARDIOPULMONARY/RENAL</td>
</tr>
<tr>
<td>806-194</td>
<td>3</td>
<td>MICROBIOLOGY</td>
</tr>
<tr>
<td>806-197</td>
<td>3</td>
<td>PATHOPHYSIOLOGY</td>
</tr>
<tr>
<td>806-311</td>
<td>2</td>
<td>HYDRAULICS-APPLIED</td>
</tr>
<tr>
<td>806-337</td>
<td>2</td>
<td>WELD MATERIAL ANALYSIS</td>
</tr>
<tr>
<td>806-353</td>
<td>2</td>
<td>SCIENCE-AUTOMECHANICS</td>
</tr>
<tr>
<td>806-354</td>
<td>2</td>
<td>SCIENCE-WOOD TECHNICS</td>
</tr>
<tr>
<td>806-360</td>
<td>2</td>
<td>METALLURGY-APPLIED</td>
</tr>
<tr>
<td>809-150</td>
<td>3</td>
<td>INTERNATIONAL ECONOMICS</td>
</tr>
<tr>
<td>809-173</td>
<td>3</td>
<td>PSYCHOLOGY-ABNORMAL</td>
</tr>
<tr>
<td>809-190</td>
<td>3</td>
<td>HUMAN GROWTH/DEVELOPMENT</td>
</tr>
<tr>
<td>809-195</td>
<td>3</td>
<td>ECONOMICS</td>
</tr>
<tr>
<td>809-196</td>
<td>3</td>
<td>SOCIOLOGY-INTRODUCTION</td>
</tr>
<tr>
<td>809-197</td>
<td>3</td>
<td>SOCIETY-AMERICAN CONTEMPORARY</td>
</tr>
<tr>
<td>809-198</td>
<td>3</td>
<td>PSYCHOLOGY-INTRODUCTION</td>
</tr>
<tr>
<td>809-199</td>
<td>3</td>
<td>PSYCHOLOGY-HUMAN RELATIONS</td>
</tr>
<tr>
<td>809-351</td>
<td>2</td>
<td>ECONOMICS-BASIC</td>
</tr>
<tr>
<td>890-101</td>
<td>3</td>
<td>CRITICAL THINKING</td>
</tr>
</tbody>
</table>
| 890-150     | 2       | CAREER DEVELOPMENT |...work attitudes, exploring entry-level career choices, determining office careers, practicing applying for a job, getting along on the job, and setting goals.
Instructional and Administrative Staff

Albee, Randy
Computer Information Systems-Programmer/Analyst
A.A., MBTI Business Institute, Milwaukee, WI

Albertson, Michael L.
Police Science
Diploma, Door-Kewaunee County Teacher's College
B.S., Silver Lake College

Anderson, Clifford H.
Welding
B.S., M.S., Northern Michigan University
Journeyman Welder-Fabricator

Anderson, Robyn
Counselor
B.S., M.S., University of Wisconsin, Milwaukee

Anderson, Sharon
Communication Skills
B.S., University of Wisconsin, Platteville
M.S., University of Wisconsin, Milwaukee

Arfit, Dan K.
Electrical Power Distribution

Ascher, Mary Beth, C.P.M., A.P.P.
Economics
B.A., St. Norbert College
M.B.A., University of Wisconsin, Oshkosh

Athey, Joanne
Center for Business and Industry
Economic Development

Barker, Rose B.
Administrative Assistant-Secretarial
B.A., Chicago Teachers College
M.S., Northern Michigan University

Barr, Jerry L.
Diesel and Heavy Equipment Technician

Begotka, James
Basic Education, WPS
B.A., University of Wisconsin, Green Bay

Bentzler, Gerry
Wood Technics
B.S., University of Wisconsin, Stout

Bergold, John E., Jr.
Automotive Maintenance Technician
Diploma, Northeast Wisconsin Technical College

Besse, Mary, RN, MSN
Nursing-Associate Degree
BSN, Marian College
MSN, University of Wisconsin, Oshkosh

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Basic Education
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Bluhm, Mark
Auto Body/Paint
ASE Master Autobody/Paint Technician

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Brenner, Jerry R.
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B.S., M.S., University of Wisconsin, Stout
Ph.D., University of Wisconsin, Madison

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M.A., Bradley University, Peoria, IL

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Communication Skills
B.A., Northern Michigan University
M.S., University of Wisconsin, Stout

Briski, Kristine
Basic Education, WPS
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Industrial Mechanic
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Machine Tool Operation
T.D., Northcentral Technical College
A.A., Gogebic Community College
B.S., Northern Michigan University
M.S., University of Wisconsin, Stout

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Dean, Business and Marketing
B.S., University of Wisconsin, Whitewater
M.S., Georgia State University
Ed.D., University of Georgia

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M.S., University of Wisconsin, Oshkosh

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Clark, James M.
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M.S., University of Wisconsin, Oshkosh

Clark, Jeffrey B.
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B.S., University of Wisconsin, Stout
M.S., University of Massachusetts, Amherst, Massachusetts

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Computer Information Systems-Microcomputer Specialist

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BSN, Mount Marty College, Yankton, SD
MSN, University of Wisconsin, Madison

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B.S., M.S., University of Wisconsin, Oshkosh

Crisp, Charles C.
Industrial Model Building
A.A.S., Northeast Wisconsin Technical College
B.A., St. Norbert College, DePere
M.S., University of Wisconsin, Milwaukee

Cryle, Tricia
Architectural
B.S., Macalester College
B.S., University of Minnesota

Cuene, Mary L.
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B.S., University of Wisconsin, Green Bay
M.S., University of Wisconsin, Milwaukee

Darula, Ruth E.
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B.S., University of Wisconsin, Whitewater
M.S., University of Wisconsin, Green Bay

DeJardin, Warren J.
Apprenticeship, Electricity
Master Electrician, Wisconsin

Delcore, Ken
Air Conditioning, Heating, & Refrigeration Technology
A.S., Western Wisconsin Technical College
### Instructional and Administrative Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Degree/Title/Institution</th>
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<tr>
<td>DeWilde, Edward</td>
<td>T.D., Lakeshore Technical College</td>
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<tr>
<td>Dolan, Debra C., RCF</td>
<td>Respiratory Care Practitioner Diploma</td>
<td>BioSystem Institute</td>
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<td></td>
<td>Diploma, California College for Health Sciences</td>
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<tr>
<td>Donati, Joseph M., PT</td>
<td>Physical Therapist Assistant B.S.</td>
<td>Marquette University</td>
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<tr>
<td>Doubek, Stephen R.</td>
<td>Industrial Model Building B.S., M.S.</td>
<td>University of Wisconsin, Stout</td>
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<tr>
<td>Duffy, Margo E.</td>
<td>ESL - Basic Education B.S., M.A.</td>
<td>Silver Lake College, Manitowoc</td>
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<tr>
<td></td>
<td>ESL Certification, University of Wisconsin, Green Bay</td>
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<tr>
<td>Dufour, Rita L., CPA</td>
<td>Accounting B.A.</td>
<td>St. Norbert College, DePere</td>
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<tr>
<td>Duginski, Steven R.</td>
<td>Instrumentation B.S., M.S.</td>
<td>University of Wisconsin, Stout</td>
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<tr>
<td></td>
<td>Milwaukee School of Engineering</td>
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<tr>
<td>Dusenske, Danene</td>
<td>Basic Education B.S.</td>
<td>University of Wisconsin, Stevens Point</td>
</tr>
<tr>
<td>Eells, Kelly, RN, MSN</td>
<td>Nursing-Associate Degree Instructor, Lab Manager</td>
<td>Northeast Wisconsin Technical College BSN, Bellin College of Nursing, M.S., University of Wisconsin, Oshkosh</td>
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<tr>
<td>Eleni, Eugene</td>
<td>Machine Tool Certificate, Milwaukee Technical College</td>
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<tr>
<td>Ellingson, Allen E.</td>
<td>Vice-President, Emeritus B.S., M.S.</td>
<td>University of Wisconsin, Stout</td>
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<tr>
<td>Emmel, James W.</td>
<td>Communication Skills B.A., B.S.</td>
<td>University of Wisconsin, Oshkosh</td>
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<td></td>
<td>M.S., University of Wisconsin, Stevens Point</td>
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<td>Exworthy, Kenneth W.</td>
<td>Electronics, Instrumentation B.S.E.</td>
<td>Michigan Technological University</td>
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<td></td>
<td>M.S.E.E., Massachusetts Institute of Technology</td>
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<tr>
<td>Falle, Joseph III</td>
<td>Air Conditioning, Heating, &amp; Refrigeration Technology</td>
<td>A.S., T.D., Milwaukee Area Technical College</td>
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<tr>
<td>Faul, Weldon A.</td>
<td>Quality Assurance Technician B.S.</td>
<td>Michigan Technological University</td>
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<tr>
<td>Fenner, Mary S.</td>
<td>Marketing and Graphics Communications B.S., University of Wisconsin, Stout</td>
<td></td>
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<tr>
<td>Fischer, Janet M., C.D.A.</td>
<td>Dental Assistant Diploma, University of North Carolina</td>
<td></td>
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<tr>
<td>Fisher, Lori</td>
<td>Associate Dean, Finance B.S., University of Miami, Florida M.B.A., University of Texas, El Paso</td>
<td></td>
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<tr>
<td>Gaywont, John J.</td>
<td>Computer Information Systems-Programmer/Analyst B.S., M.S., University of Wisconsin, Green Bay</td>
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<tr>
<td>Gemignani, Michael J.</td>
<td>Data Processing, Accounting B.S., Northern Michigan University M.S., University of Wisconsin, Stout</td>
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<tr>
<td>Gerstner, Roger J.</td>
<td>Machine Tool B.S., M.S.</td>
<td>University of Wisconsin, Stout</td>
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<tr>
<td>Giannunzio, Carolyn M.</td>
<td>Mathematics B.S., University of Wisconsin, Green Bay M.S., University of Wisconsin, Stout</td>
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<tr>
<td>Goron, Daniel</td>
<td>N.C.C., Counselor B.S., M.S.</td>
<td>University of Wisconsin, Oshkosh</td>
</tr>
<tr>
<td>Hafeman, Debra J., RN</td>
<td>Surgical Technician B.S.</td>
<td>Marian College</td>
</tr>
<tr>
<td>Haight, Robert</td>
<td>Farm Business and Production Management B.S., Cornell University</td>
<td></td>
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<tr>
<td>Hall, Mary Lyn</td>
<td>Counselor, Returning Adult Services B.A., Mount Mary College M.S., University of Wisconsin, Milwaukee</td>
<td></td>
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<tr>
<td>Halsted, Sharon L.</td>
<td>Administrative Assistant-Secretarial B.S., M.S., University of Wisconsin, Whitewater</td>
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<tr>
<td>Hardy, Deborah L., RDH</td>
<td>Associate Dean/Instructor, Health Occupations/Dental B.S., M.S., Old Dominion University, Norfolk, Va.</td>
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</tr>
<tr>
<td>Hathaway, B. J.</td>
<td>Business, Economic Development B.S., Bowling Green State University M.S., University of Wisconsin, Eau Claire</td>
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<tr>
<td>Henning, Patrick</td>
<td>Director, Information and Instructional Technology B.S., University of Wisconsin, Green Bay</td>
<td></td>
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<tr>
<td>Herold, Lynn</td>
<td>Counselor B.S., University of Wisconsin, Green Bay M.S., University of Wisconsin, Oshkosh</td>
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<tr>
<td>Hesselvan Dinter, Diane</td>
<td>Quality Assurance Technician, Math B.S., University of Wisconsin, Oshkosh M.S., Kenesaw State College</td>
<td></td>
</tr>
<tr>
<td>Hiles, Alan C.</td>
<td>Associate Dean, Trades and Industry M.S., University of Wisconsin, Stout B.S., University of Wisconsin, Stout Diploma, Northeast Wisconsin Technical College Journeyman, Machine Tool and Trimmer/Die Maker, and Die Sinker</td>
<td></td>
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<tr>
<td>Hischke, Linda S.</td>
<td>Accounting B.S., University of Wisconsin, Eau Claire M.S., Utah State University, Logan, Utah</td>
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<td>Holliman, Timothy E.</td>
<td>Social Science B.A., St. Joseph College M.A., Northern Michigan University</td>
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<tr>
<td>Holloway, Mary-Louise, RN, Ph.D.</td>
<td>Dean, Health Occupations B.S., MSN, Marquette University, Milwaukee</td>
<td>Ph.D., Ohio University, Athens, Ohio</td>
</tr>
<tr>
<td>Hopfensperger, Dick</td>
<td>Associate Dean, Marketing A.A.S., Northeast Wisconsin Technical College B.S., St. Norbert College, DePere M.B.A., University of Wisconsin, Oshkosh</td>
<td></td>
</tr>
<tr>
<td>Hoppe, Nannette B.</td>
<td>Associate Dean, Family and Service Occupations B.S., M.S., University of Wisconsin, Madison Ed.D., Nova University, Ft. Lauderdale, Florida</td>
<td></td>
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<tr>
<td>Hornett, Charlie</td>
<td>Minority Affairs Counselor A.D., Haskell Junior College B.S., University of Wisconsin, La Crosse M.S., University of New Orleans</td>
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<tr>
<td>Jansen, Lisa</td>
<td>Data Processing A.A., Fikes Peak Community College B.B.A., University of Wisconsin, Eau Claire</td>
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<td>Janusek, Fred C.</td>
<td>Mathematics B.S., Northern Illinois University M.S., University of Iowa</td>
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<td>Jaworski, Donald M.</td>
<td>Associate Dean, Agriculture B.S., University of Wisconsin, River Falls M.S., University of Wisconsin, Madison</td>
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<td>Jennings, Melvin D.</td>
<td>Science B.S., University of Wisconsin, Oshkosh M.A., University of South Dakota</td>
<td></td>
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<tr>
<td>Johnson, Gary</td>
<td>Basic Education B.A., University of Wisconsin, Green Bay M.S., University of Wisconsin, Stout</td>
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NORTHEAST WISCONSIN TECHNICAL COLLEGE
### Instructional and Administrative Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Position/Description</th>
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<tbody>
<tr>
<td>Johnson, J. Russ</td>
<td>Welding, B.S., University of Wisconsin, Stout</td>
</tr>
<tr>
<td>Johnson, S. William</td>
<td>Marketing, B.S., University of Wisconsin, LaCrosse, M.S., Voc. Ed., University of Wisconsin, Stout</td>
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<tr>
<td>Jones, Annie Carol</td>
<td>Counselor, Returning Adults, B.S., Carthage College, M.S., University of Wisconsin, Platteville</td>
</tr>
<tr>
<td>Jones, Mary Lea RN, MSN</td>
<td>Nursing, Associate Degree, B.A., St. Joseph College, BSN, Marillac College, MSN, University of Wisconsin, Oshkosh</td>
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<tr>
<td>Kalinosky, Laura</td>
<td>Communication Skills/Reading, B.S., University of Wisconsin, Madison, Teaching Certificate, Cardinal Stritch University, Milwaukee</td>
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<tr>
<td>Kaster, Elizabeth</td>
<td>Child Day Care, B.S., Dominican College, M.A., University of Hawaii</td>
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<tr>
<td>Kaufman, James L.</td>
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<tr>
<td>Kempf, Mary RN-C, MSN</td>
<td>Business Management, B.S., Maran College, MSN, University of Wisconsin-Milwaukee, Certified, Inpatient Obstetrics, NAACOG</td>
</tr>
<tr>
<td>Kientop, Robert</td>
<td>Graphic Communications</td>
</tr>
<tr>
<td>Klika, Bonnie L.</td>
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</tr>
<tr>
<td>Knutson, Kathy</td>
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<tr>
<td>Kollman III, John W.</td>
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</tr>
<tr>
<td>Kolbo, Lew G.</td>
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<tr>
<td>Kroll, Judith A.</td>
<td>Marketing - Retail Management, B.S., University of Wisconsin, Stout, M.S., University of Wisconsin, Madison</td>
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<tr>
<td>Krouth, Susan J.</td>
<td>Account Clerk, B.S., University of Wisconsin, Eau Claire, M.S., University of Wisconsin, Superior</td>
</tr>
<tr>
<td>LaHaye, Dawn</td>
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</tr>
<tr>
<td>LaHaye, Patrick E.</td>
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<tr>
<td>Larson, Jill</td>
<td>Chemistry, B.S., University of Wisconsin, Green Bay, M.S., University of Wisconsin, Madison</td>
</tr>
<tr>
<td>LaRue, Lil</td>
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<tr>
<td>Laurent, Alice RN-C, MSN</td>
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</tr>
<tr>
<td>Lavine, Sharon RN-C, MSN</td>
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</tr>
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<td>LeBreck, Jean T., MT (ASCP)</td>
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<tr>
<td>Ledvina, Dennis A.</td>
<td>Mathematics, B.S., St. Norbert College, DePere, M.Ed., Lesley College</td>
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<tr>
<td>Lemke, Lois M.</td>
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</tr>
<tr>
<td>Luder, Diana L., RRT</td>
<td>Respiratory Care Practitioner, B.S., University of Kansas, M.S., State University of New York, Ph.D., Nova University, Ft. Lauderdale, Florida</td>
</tr>
<tr>
<td>Madl, Dawn M., MT (ASCP)</td>
<td>Microbiology/Medical Laboratory Technician/Medical Assistant, B.S., Michigan Technological University</td>
</tr>
<tr>
<td>MaGee, Gary E.</td>
<td>Architectural, A.A.S., Northeast Wisconsin Technical College, B.S., M.S., University of Wisconsin, Stout</td>
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<tr>
<td>Manley, Fred C.</td>
<td>Associate Dean, Data Processing and Center for Business &amp; Industry, B.S., University of Wisconsin, Stevens Point, M.S., University of Wisconsin, Madison, Ed.D., Western Michigan University, Kalamazoo, Michigan</td>
</tr>
<tr>
<td>Mastrocola, Rose Marie</td>
<td>Communication Skills, Reading, B.S., M.S., University of Wisconsin, Oshkosh, Ed.D., Western Michigan University, Kalamazoo, Michigan</td>
</tr>
<tr>
<td>Mayer, Lisa</td>
<td>Paralegal, B.A., Ph.D., University of Wisconsin, Madison</td>
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<tr>
<td>Mazur, Pamela Orem</td>
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</tr>
<tr>
<td>McArthur, Randall E.</td>
<td>Accounting, B.S., Lake Superior State College, M.S., University of Wisconsin, Stout, M.S., Silver Lake College, M.S., Silver Lake College</td>
</tr>
<tr>
<td>McDonald, Cindy J., ST, RN, CNOR</td>
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</tr>
<tr>
<td>McKenney, Nancy, RDH</td>
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<tr>
<td>Meister, Marvin L.</td>
<td>Mechanical Design Technician, B.S., University of Wisconsin, Stout</td>
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<tr>
<td>Miller, Jerome L.</td>
<td>Special Needs Counselor, B.S., Northern Michigan University, M.S., University of Wisconsin, Oshkosh</td>
</tr>
</tbody>
</table>
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Plog, James
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M.S., Ph.D., Institute of Paper Chemistry

Rok, Adam A., RN, M.Ed.
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Rose, Debra
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A.A.S., Fox Valley Technical College, Appleton
Journeyman Maintenance Mechanic

Schmitt, Mary A., CDA
Dental Assistant
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<td>Wilting</td>
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<td>Zellner</td>
<td>John</td>
<td>Masonry Apprenticeship</td>
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Certificate Options

Northeast Wisconsin Technical College Certificates are designed to help you get skills quickly. This fast track approach allows a student to acquire specific skills targeted at a specific industry. The length of commitment and skill sets vary with each certificate. Call the phone number listed below to receive specific course information or to have the specific brochure sent.

Chemical & Instrumental Analysis Technician Certificate...Learn procedures of environmental testing using high tech laboratory equipment such as Fourier Transform Infrared Spectrometer (FTIR), High Performance Liquid Chromatograph (HPLC), Gas Chromatograph (GC), and Atomic Absorption Spectrometer (AA) according to Environmental Protection Agency's (EPA) standard methods.

For more information call:
Counselor Green Bay Campus
(920)498-6823
Counselor Marinette Campus
(715)735-9361
Counselor Sturgeon Bay Campus
(920)743-2207

Child Care Administration Certificate...This credential prepares participants with administrative and supervisory skills needed by early child care administrators: roles and responsibilities, financial management and planning, operations management, external factors affecting operation, best practices for children and families in early childhood programs.

For more information call:
Counselor Green Bay Campus
(920)498-5440
Counselor Marinette Campus
(715)735-9361
Counselor Sturgeon Bay Campus
(920)743-2207

Child Care Basics Certificate...The Child Care Basics Certificate is designed for the person beginning a career in early childhood education and includes opportunities for field experience in Community Based Child Care Centers.

For more information call:
Counselor Green Bay Campus
(920)498-5440
Counselor Marinette Campus
(715)735-9361
Counselor Sturgeon Bay Campus
(920)743-2207

Crop Technician Certificate...Performance based technical education designed to meet the National Certified Crop Advisor Program (NCCA) and the Wisconsin Certified Crop Advisor Program (WCCA) testing and certification standards.

For more information call:
Counselor Green Bay Campus
(920)498-5440
Counselor Marinette Campus
(715)735-9361
Counselor Sturgeon Bay Campus
(920)743-2207

Fastrak Marketing Certificate...The Fastrak Marketing Certificate is designed for a person seeking an advanced level position in a marketing environment. Prior work experience in a marketing related position is required for this concentrated, non-traditional format.

For more information call:
Dick Hopfensperger
Associate Dean, Marketing
(920)498-6306 or
(800)422-NWTC ext. 306

Food Technician Certificate...The Food Technician is exclusively designed for the working adult seeking to upgrade their occupational skills and knowledge on a part-time basis. Learn methods of food testing using the microscope, microbiological techniques and sensory evaluation procedures.

For more information call:
Counselor Green Bay Campus
(920)498-5440
Counselor Marinette Campus
(715)735-9361
Counselor Sturgeon Bay Campus
(920)743-2207

Integrated Resource Management Certificate...The Integrated Resource Management Certificate provides multi-skilled incumbent workers the leadership, the framework, and the educational resources to help organizations meet the challenges of today's global marketplace.

For more information call:
Dick Hopfensperger
Associate Dean Marketing
(920)498-6306
(800)422-NWTC ext. 306

International Logistics Certificate...The International Logistics Certificate is designed for a person seeking entry-level or advanced-level position in a global and international environment. These credits can apply towards an Associate Degree in Logistics.

For more information call:
Dick Hopfensperger
Associate Dean Marketing
(920)498-6306
(800)422-NWTC ext. 306

Landscape Horticulture Certificate...Landscape Horticulture Servics Certificate is designed to provide job skills and knowledge for the landscape worker, park employee, nursery person, early childhood programs.

For more information call:
Liz Whalen
(920)498-5498
Karen Uhland
(920)498-5457

Registration
(920)498-5757 or (800)422-NWTC

NORTHEAST WISCONSIN TECHNICAL COLLEGE
Certificate Options

Livestock Technician Certificate ...Learn basic animal husbandry including animal anatomy, physiology, genetics, nutrition and reproduction. Credits can apply to the Agribusiness/Science Technology Program.

For more information call:
Counselor
Green Bay Campus
(920)498-5498
Marilyn Toninato, Program Director, Health Information Technology
(920)498-5577

Plant Engineering Electrical Maintenance Certificate ...The Plant Engineering Electrical Maintenance Certificate is designed for a person seeking an entry-level position in an industrial environment or for additional training in an existing electrical maintenance position.

For more information call:
Jim Rafterty, Counselor
Marinette Campus
(715)735-9361 ext. 157

Jim Shane, Dean
Marinette Campus
(715)735-9361 ext. 105

Plant Engineering Mechanical Maintenance Certificate ...The Plant Engineering Mechanical Maintenance Certificate is designed for a person seeking an entry-level position in an industrial environment or for additional training in an existing mechanical maintenance position.

For more information call:
Green Bay Campus
(920)498-6823
(800)422-NWTC ext. 823

Power Engineering & Boiler Operator Certificate ...The Power Engineering and Boiler Operator Certificate prepares students to start-up, operate and shut down low and high-pressure boilers and auxiliary systems in factories, plants and buildings.

For more information call:
Green Bay Campus
(920)498-6823
(800)422-NWTC ext. 823

Product and Inventory Technician Certificate ...The Production and Inventory Technician Certificate is designed for a person seeking new or additional training in production and inventory management processes for their organization to become more productive and competitive.

For more information call:
Dick Hopfensperger
Associate Dean, Marketing
(920)498-6306
(800)422-NWTC ext. 306

Purchasing Certificate ...The Purchasing Certificate is designed for a person seeking new or additional training in purchasing. These credits can apply to an Associate Degree in Logistics.

For more information call:
Dick Hopfensperger
Associate Dean, Marketing
(920)498-6306
(800)422-NWTC ext. 306

QUALITY CERTIFICATES

Certificates in Quality consist of the following three certificates:

Certificate in Statistical Methods ...gathering and analyzing facts to solve a problem.

Certificate in Quality Management Systems ...learn the basics of quality management systems.

Certificate in Non-Destructive Test (NDT) Methods ...making sure you are obtaining the quality you pay for; checking parts for dimensional accuracy and flaws.

For more information call:
Counselor
Green Bay Campus
(920)498-6823
(800)422-NWTC ext. 823

Counselor
Marinette Campus
(715)735-9361 ext. 157

Counselor
Sturgeon Bay Campus
(920)743-2207

Resource Planning and Control Certificate ...The Resource Planning and Control Certificate is designed for a person seeking new or additional training in production and inventory management or supply chain management environments or Certification in APICS / American Production and Inventory Control Society. These credits can apply to an Associate Degree in Materials Management.

For more information call:
Dick Hopfensperger
Associate Dean Marketing
(920)498-6306
(800)422-6982 ext. 306

Retail Marketing Certificate ...The Retail Marketing Certificate is designed for a person seeking an entry level position in a retail or merchandising environment. These credits can apply to an Associate Degree in Retail Management.

For more information call:
Dick Hopfensperger
Associate Dean Marketing
(920)498-6306
(800)422-6982 ext. 306

Transportation Certificate ...The Transportation Certificate is recognized by the Northeast Wisconsin Technical College in a specific field of study. This certificate is earned by anyone completing the required credit courses.

For more information call:
Dick Hopfensperger
Associate Dean Marketing
(920)498-6306
(800)422-6982 ext. 306
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