

Automotive Technology

Program Code 106023

Associate Degree - Two Years

Offered at the Green Bay and Marinette campuses. For information in Green Bay: (920) 498-5444.

For information in Marinette: (715) 735-9361.

Toll-free: (800) 422-NWTC, ext. 5444. Visit the Auto Technology and Technician website at: www.nwtc.edu/Programs/AutoTech

Program Description

Automotive Technology prepares students for work in an automotive repair facility. Students learn to diagnose and service automobiles under conditions similar to an actual repair facility. Students will develop repair facility management skills such as telephone etiquette, communication techniques, operation, managing, and organization skills.

Program Outcomes

Automotive Technology graduates will demonstrate technical aptitude and proficiency by diagnosis and repair of the following ASE service areas:

- A1 Engine Repair.
- A2 Automatic Transmission/Transaxle.
- A3 Manual Drive Train & Axle.
- A4 Suspension & Steering.
- A5 Brakes.
- A6 Electric/Electronic Systems.
- A7 Heating & A/C.
- A8 Engine Performance.

In addition, graduates will also be able to:

- Communicate positively and effectively with the customer.
- Create and complete customer repair orders accurately.
- Organize a daily work schedule for him/herself and for team members.
- Tabulate a daily time sheet of technicians repair work.

Requirements for Program Entry

- Completed application.
- High school transcript or equivalent (such as an HSED or GED® Transcript).
- NWTC Academic Skills Assessment or equivalent (See Academic Skills Assessment section for details and equivalents).
- High school background in mathematics, science, and technology education.
- Students should have mastered basic math before entering this program. For a description of basic math, see the Basic Education section of this catalog.

Accreditation

- All NWTC Automotive programs are ASE Certified to NATEF (National Automotive Technicians Education Foundation) Standards.
- All instructional staff in the NWTC Automotive Programs are, at a minimum, Master, ASE Certified Technicians.
- NATEF (National Automotive Technicians Education Foundation)

We support:



Employment Potential

A graduate of the program will have the potential for employment in the following areas:

Automotive Service Technician: Diagnoses vehicle malfunctions, performs appropriate repairs, and recommends/conducts regular vehicle maintenance.

Automotive Electronics Specialist: Utilizes Hi-tech equipment to troubleshoot complex electrical and computer malfunctions. Replaces and reprograms engine, body and transmission controllers.

Brake Specialist: Performs complete brake system safety inspections, diagnoses brake system concerns and makes necessary repairs.

Steering, Suspension & Alignment Specialist: Diagnoses and repairs steering and suspension system concerns, utilizes computerized equipment to perform suspension and steering system adjustments.

Transmission and Drive Train Specialist: Diagnoses and repairs concerns related to automatic and manual transmissions, drive trains and differentials.

Engine Performance Specialist: Utilizes hi-tech equipment to diagnose and repair engine drivability concerns relating to engine mechanical, ignition and fuel systems.

Heating & Air Conditioning Specialist: Diagnoses and repairs heating and air conditioning control systems.

Engine Repair Specialist: Diagnoses engine mechanical failure. Disassembles, inspects, and measures engine components. Recommends/conducts component replacement.

Shop Foreman: Works with the technician and customer to get vehicles repaired correctly.

Parts Manager: Organizes and oversees the parts department. Works with the technicians to get the correct parts to repair the vehicles.

Warranty Claims Person: Calculates the amount of time spent repairing a vehicle compared to what the manufacturer will allow.

Owner/Operator: Owns and operates his/her own repair facility, may have employees working for them.

Recommended off campus work experiences; 20 hours in each area:

- Automotive Service Writer
- Automotive Service Manager
- Automotive Shop Foreman
- Automotive Parts Manager
- Automotive Warranty Claims Person
- Automotive Service Department Manager
- Automotive Human Relations Manager
- Other areas with instructor's approval

Curriculum

The Automotive Technology Associate Degree is a two-year, four-semester program offered on both the Green Bay and Marinette Campuses. Upon graduation, a student will have completed 68 credits.

First Semester

Catalog No.	Description	Credits
* 10-602-114	Brake Technology	5
* 10-602-115	Engine Performance I Tech	5
** 10-602-117	Wiring/Schematics Tech	1
** 10-602-118	DC Electricity Technology	1
10-602-160	Auto Preparation Technology	1
10-804-106	Intro to College Math	3
Semester Total		16

Second Semester

* 10-602-124	Steering/Suspension Tech	5
** 10-602-126	Chassis Electricity Tech	2
* 10-602-128	Auto Engine Performance II	5
10-801-195	Written Communication	3
10-809-197	Contemporary Amer Society	3
Semester Total		18

Third Semester

* 10-602-135	Heating/Cooling AC Tech	4
* 10-602-145	Engine Repair Technology	5
10-801-196	Oral/Interpersonal Comm	3
10-801-197	Technical Reporting	3
10-809-172	Race Ethnic & Diversity	3
Semester Total		18

Fourth Semester

* 10-602-129	Automotive Emission Systems	1
* 10-602-139	Auto Trans/Transaxle Tech 1	3
* 10-602-140	Auto Trans/Transaxle Tech 2	3
* 10-602-146	Manual Transmission/Differ	4
10-602-148	Automotive Computer Technology	2
10-809-199	Psychology Of Human Relations	3
Semester Total		16
Total Credits		68

- * A 3 to 5 page paper is required for each area experienced. The paper will include job title, work experience, responsibilities, normal work hours, and interpersonal skills required. Assess from your time on the job what possible classes and/or work experience would be beneficial to a person pursuing a job in this area. A grade in the work experience will be based on employer input and the paper.
- ** Specific project information to be obtained from program instructor.

This program is fully eligible for financial aid.

Please Note

- Some courses have prerequisites (listed at the end of each course description, if applicable) that need to be taken prior to enrolling in those courses.
- Many courses are offered via our Flexible Learning Options (online, accelerated, ITV, video, weekend, and self-paced) and may be taken in any order as long as prerequisites are met. To find out which program courses are offered through Flexible Learning Options, go to www.nwtc.edu or consult a counselor, (920) 498-5444.
- Descriptions of courses not found on this page can be found in the back of this catalog.

Course Descriptions

These courses provide an opportunity for students to develop the knowledge, skills, and understanding required for employment in this field.

10-602-114 BRAKE TECHNOLOGY ...brake safety, wheel bearings, brake preventive maintenance, disc and drum brake overhaul, rotor and drum machining, master cylinder, brake lines and hoses, safety switches and valves, power and anti-lock brakes, *10 hours off campus selected work experience. (Corequisite: 10-602-160, Auto Preparation Technology)

10-602-115 ENGINE PERFORMANCE I TECHNOLOGY ...engine safety, preventive maintenance, four stroke theory, ignition systems, test equipment, scopes, *10 hour off campus selected work experience. (Corequisites: 10-602-160, Auto Preparation Technology; 10-602-118 DC Electricity Technology)

10-602-117 WIRING/SCHEMATICS TECHNOLOGY ...electrical symbols, wiring diagrams, tracing wiring circuits, and diagnosing electrical problems with wiring diagrams. **design an automotive electrical circuit. (Corequisite: 10-602-118, DC Electricity Tech)

10-602-118 DC ELECTRICITY TECHNOLOGY ...ohms, amps, voltage, wire repair, series and parallel circuits, meter use, magnetism, **research paper comparing and contrasting A/C and D/C electrical applications.

10-602-124 STEERING/SUSPENSION TECHNOLOGY ...steering and suspension safety, tire types and ratings, wheel bearings, balance and alignment, wheel and tire runout, shocks, suspension components, steering components, steering gears, *10 hour off campus work experience. (Corequisite: 10-602-160, Auto Preparation Technology)

10-602-126 CHASSIS ELECTRICITY TECHNOLOGY ...batteries, starting and charging system components, lighting systems components, indicator system components, horn system components, motor driven system components, **research paper on automotive hybrids. (Prerequisites: 10-602-118, DC Electricity Tech; 10-602-117, Wiring/Schematic Tech; Corequisite: 10-602-160 Auto Preparation Technology)

10-602-128 AUTOMOTIVE ENGINE PERFORMANCE II ...engine fuel safety, fuel type ratings, fuel supply components, fuel injection systems, exhaust systems, forced induction and intake, computer input/output information and scanners. (Corequisites: 10-602-160, Auto Preparation Technology; 10-602-117, Wiring/Schematics Tech; Prerequisites: 10-602-118, DC Electricity Tech; 10-602-115, Auto Engine Performance 1 Tech)

10-602-129 AUTOMOTIVE EMISSION SYSTEMS ...vehicle emission control system theory, theory of component operation, diagnostics and typical service procedures. (Corequisites: 10-602-160, Auto Preparation Technology; 10-602-117, Wiring/Schematic Tech; Prerequisites: 10-602-118, DC Electricity Tech; 10-602-115, Engine Performance 1 Tech; 10-602-128, Auto Engine Performance II)

10-602-135 HEATING/COOLING AC TECHNOLOGY ...related system safety, engine coolant flushing/recycling, heating system components, refrigerants, A/C systems, A/C test equipment, A/C evacuation recycling and recharging, *10 hour off campus work experience. (Corequisite: 10-602-160, Auto Preparation Technology; Prerequisites: 10-602-118, DC Electricity Tech; 10-602-117, Wiring/Schematics Technology)

10-602-139 AUTO TRANS/TRANSAXLE TECHNOLOGY 1 ...transmission/transaxle safety, transmission fluid, transmission maintenance, test procedures, external transmission adjustments, and 5-hour off-campus work experience. (Prerequisites: 10-602-160, Auto Preparation Technology; 10-602-118, DC Elec Tech; 10-602-117, Wiring Schematics Tech; Corequisite: 10-602-140, Auto Trans/Transaxle Tech 2)

10-602-140 AUTO TRANS/TRANSAXLE TECHNOLOGY 2 ...test procedures, transmission removal and installation, overhaul, electronic controls, input sensors, output sensors, and scanner diagnostics, 5 hour off-campus work experience. (Prerequisites: 10-602-160, Auto Preparation Technology; 10-602-118, DC Elec Tech; 10-602-117, Wiring Schematics Tech; Corequisite: 10-602-139, Auto Transaxle Tech)

10-602-145 ENGINE REPAIR TECHNOLOGY ...engine lubrication system, four stroke theory, valve timing, engine failures, valve service, cylinder head replacement, engine replacement, engine repair, *10 hour off campus selected work experience. (Corequisite: 10-602-160, Auto Preparation Technology)

10-602-146 MANUAL TRANSMISSION/ DIFFERENTIAL TECHNOLOGY ...drivetrain safety, universal joints, half-shafts, transmission repair/overhaul, clutch, shift linkage, four-wheel drive, differential, *10 hour off campus selected work experience. (Corequisite: 10-602-160, Auto Preparation Technology)

10-602-148 AUTOMOTIVE COMPUTER TECHNOLOGY ...air bag systems, electronic control components, electronic cruise control, electronic instrument clusters/theft security, electronic transmission, electronic anti-lock breaks and electronic air conditioning.

10-602-160 AUTO PREPARATION TECHNOLOGY ...personal safety, auto equipment safety, repair order information, industry computer applications, repair tools, fasteners, chemicals, vehicle preventive maintenance, **research OSHA automotive shop safety requirements.