

AUTOMOTIVE REPAIR

AUTOMOTIVE SERVICE CERTIFICATE AUTOMOTIVE TECHNICIAN CERTIFICATE



The Automotive Technician Certificate (41 credits) applies toward the Associate of Applied Science in Technology Degree (62 credits), a flexible degree with a wide-range of experiences for the automotive technology field.

**Glen Oaks
Community College**
62249 Shimmel Rd
Centreville, MI 49032
467-9945
1-888-994-7818
www.glenoaks.edu



Automotive Service Certificate

This instructional program is designed to prepare individuals for entry-level employment in automotive service centers. Upon completion of the Automotive Service Certificate courses, the prospective service center technician will have proficiency in the fundamentals of basic electronics, tuneup, diagnosis and repair, brake service, and fuels.

19 Credits

Automotive Technician Certificate

This program of study is designed to prepare technicians for the high-tech automotive industry. It also prepares them to take state and national certification tests. Upon successful completion of the required course work, the graduate should be ready for the State of Michigan and/or ASE Certification in the following Automotive Specialty Areas: brakes, automotive transmission, engine repair, electrical, manual transmission, engine tune-up, heating and air conditioning, and front end.

41 Credits

Job Outlook

Automotive service technicians and mechanics held about 803,000 jobs in 2004. The majority working in:

- Automotive repair and maintenance shops
- Automobile dealerships
- Retail and wholesale automotive parts, accessories and supplies. **16% of service technicians are self-employed!**
- Gasoline stations
- Automotive supply stores
- Federal, state and local government garages
- Self-employed automotive establishments

Employment is expected to gradually increase through 2014 as vehicles in operation increase and multiple vehicle families grow. Employment growth will be concentrated in dealerships and independent auto repair shops. More than 16% of service technicians are self-employed, twice the number in all other installation, maintenance, and repair fields. People entering the occupation can expect steady work. Hourly earnings for technicians and mechanics range from \$8.70 to \$26.22, with the average between \$11.31 and \$20.75 per hour, according to the Bureau of Labor Statistics.

Automotive Service Certificate

Required Coursework (12 hours)

VTA 100 Introduction to Automotive Technology..... 3 Credits
 VTA 141 Engine Diagnosis and Ignition Systems*..... 5 Credits
 VTA 146 Automotive Brake Systems*..... 4 Credits

Electives (7 hours required)

Any selected automotive courses from the following certification areas totaling 7 credits or more.

VET 271 Internship I* (by special arrangement)..... 3 Credits
 VTA 142 Fuel and Exhaust Systems*..... 5 Credits
 VTA 221 Automotive Steering and Suspension..... 4 Credits
 VTA 225 Automotive Electrical Systems I*..... 4 Credits
 VTA 228 Emissions Control Systems*..... 5 Credits
 VTA 245 Automotive Valve Train & Head Rebuilding*..... 4 Credits
 VTA 246 Automotive Cylinder Block Rebuilding*... 4 Credits
 VTA 250 Introduction to Automotive Transmissions*..... 3 Credits
 VTA 251 Manual Transmissions and Transaxles*..... 4 Credits
 VTA 252 Automatic Transmissions & Transaxles*.... 5 Credits
 VTA 255 Automotive Electrical Systems II*..... 4 Credits

Minimum Hours Required.....19 Credits

*Course has a prerequisite

Effective: Fall 2005

PLEASE NOTE:

This publication is intended to provide a general overview of the program. For current specific requirements, consult with a Glen Oaks Community College academic counselor.

Automotive Technician Certificate

Required Coursework (20 hours)

VTA 100 Introduction to Automotive Technology..... 3 Credits
 VTA 141 Engine Diagnosis and Ignition Systems*..... 5 Credits
 VTA 146 Automotive Brake Systems*..... 4 Credits
 VTA 221 Automotive Steering & Suspension..... 4 Credits
 VTA 225 Automotive Electrical Systems I*..... 4 Credits

Electives (21 hours required)

VET 271 Internship I*..... 3 Credits
 VTA 142 Fuel and Exhaust Systems*..... 5 Credits
 VTA 226 Automotive Heating & Air Conditioning.. 4 Credits
 VTA 228 Emissions and Engine Controls*..... 4 Credits
 VTA 245 Automotive Valve Train & Head Rebuilding*..... 4 Credits
 VTA 246 Automotive Cylinder Block Rebuilding*.... 4 Credits
 VTA 250 Introduction to Automotive Transmissions*..... 3 Credits
 VTA 251 Manual Transmissions and Transaxles*..... 4 Credits
 VTA 252 Automatic Transmissions and Transaxles*..... 5 Credits
 VTA 255 Automotive Electrical Systems II*..... 4 Credits

Minimum Hours Required.....41 Credits

*Course has a prerequisite

ASE Certification

Upon successful completion of the required course work, the graduate should be ready for the State of Michigan and/or ASE Certification in the following Automotive Specialty Areas:

Brakes-Automatic Transmission-Engine Repair
 Electric-Manual Transmission-Engine Tune-up
 Heating and Air Conditioning-Front End

Effective: Fall 2005

Courses

Sample courses for this field are described below. For a complete list of course descriptions, see Glen Oaks' online catalog at www.glenoaks.edu

VTA 100 INTRODUCTION TO AUTOMOTIVE TECHNICIAN, 3 Credits, 3 Contacts

This course provides knowledge about safety and an introduction to other areas of automotive repair. This course will focus primarily on safety issues in the auto shop and then survey areas such as brakes, engine repair, electronics and suspensions.

Prerequisite: None

VTA 141 ENGINE DIAGNOSIS AND IGNITION SYSTEMS, 5 Credits, 6 Contacts

This course provides students with the skills to test engine condition and ignition systems. Students will use vacuum, compression, cylinder leakage, and electronic engine analyzers. Students will learn how to diagnose an on-board computer system and its components for proper operation. The opera-

tion, inspection, testing and repair of ignition system components will be practiced.

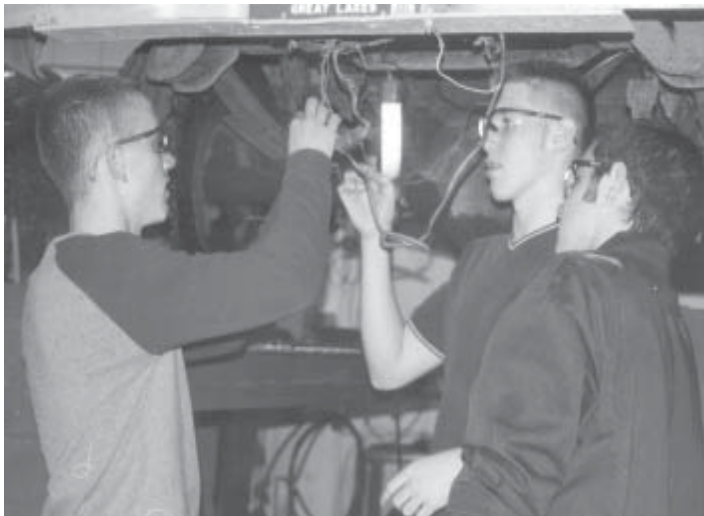
Prerequisite: VTA 100 Introduction to Automotive Technician.

VTA 146 AUTOMOTIVE BRAKE SYSTEMS, 4 Credits, 6 Contacts

This course examines the operation of automotive brake systems. The diagnosis and repair of hydraulic systems, drum brakes, disc brakes, and power assist units will be demonstrated. The operation of the parking brake, brake lights and anti-lock systems will be covered. This class is intended to prepare a student for brake repair certification tests.

Prerequisite: VTA 100 Introduction to Automotive Technician.

Other courses to consider: Electrical Systems, Fuel and Exhaust Systems, Emissions Control, Valve Train and Head Rebuilding, Cylinder Block Rebuilding, Transmissions and Transaxles.



Build on your certificate: Associate of Applied Science in Technology Degree



Students seeking an Associate of Applied Science in Technology degree generally move directly into the workplace upon graduation. This Associate degree is flexible and provides a wide range of classroom experiences in the field of automotive technology, design technology, electronics, machine repair, machine technology and computer repair. It is recommended that each student meets with a counselor to schedule classes which pertain to their chosen degree.

A Quality Training Facility

At Glen Oaks, students learn in a garage much like they might find at an automotive dealership. ASE (Automotive Service Excellence) Certification is a nationally recognized standard for programs offered by community colleges that train automotive service technicians. While ASE certification is voluntary, it does signify that the program meets uniform standards for instructional facilities, equipment, staff credentials, and curriculum. Instructors keep an eye on ever-changing technology, repair techniques, and ASE standards.

Communications (choose 10 hours)	
COM 111 Business/Technical Communications*	4 Credits
COM 121 English Composition*	3 Credits
COM 140 General Communications: Speech	3 Credits
OR COM 150 Public Speaking	3 Credits
Computer Science (4 hours required)	
EDP 101 Introduction to Computers & Software	4 Credits
Social Science (choose 7-8 hours)	
BAM 251 Organizational Behavior*	3 Credits
SSG 110 American Government & Political Science*	4 Credits
SSH 201 U.S. History I: European Colonization to 1877*	4 Credits
SSH 202 U.S. History II: Reconstruction to the Present*	4 Credits
SSP 101 Psychology	4 Credits
SSP 210 Human Growth & Development*	4 Credits
SSS 120 Principles of Sociology	4 Credits
SSS 220 Marriage and Family*	4 Credits
Industrial Studies (choose 3 hours)	
VTI 151 Manufacturing Processes	3 Credits
Mathematics (choose 3-4 hours)	
NSM 100 Introduction to Algebra*	4 Credits
NSM 104 Intermediate Algebra*	4 Credits
NSM 109 Math for Technicians I	3 Credits
NSM 111 Introductory Trigonometry*	4 Credits
NSM 119 Math for Technicians II*	3 Credits
NSM 151 College Algebra*	4 Credits
NSM 153 College Trigonometry*	4 Credits
NSM 161 Calculus I and Analytic Geometry*	4 Credits
NSM 162 Calculus II and Analytic Geometry*	4 Credits
NSM 261 Calculus III and Analytic Geometry*	4 Credits
NSM 262 Linear Algebra & Differential Equations*	4 Credits
Natural Science (4 hours + 1 hour Lab)	
NSP 151 General Physics I*	4 Credits
NSP 152 Physics I Lab*	1 Credit
OR NSP 153 General Physics II*	4 Credits
NSP 154 Physics II Lab*	1 Credit
Physical Education-Activity (choose 2 hours)	
Technology Courses (an earned Tech Certificate)....30 Credits [This can be the Automotive Technician Certificate]	
TOTAL.....62 Credits	

Problem Solvers

The work of automotive service technicians and mechanics has evolved from mechanical repair to a high technology job. Technicians must have an increasingly broad base of knowledge about how the complex components work and interact, as well as the ability to work with electronic diagnostic equipment and computer-based technical reference materials. Technicians must assess the symptoms, then take a diagnostic approach to isolate the components logically causing the problem, perhaps taking a test drive and/or using a variety of testing equipment to identify the source of the problem.

*Course has a prerequisite
Effective Fall 2004

Career Resources

**Glen Oaks Career Counseling Services
Students Services Department**
(269) 467-9945 or (888) 994-7818
www.glenoaks.edu

**Bureau of Labor Statistics Occupational Outlook
Handbook**
www.bls.gov/oco

**Michigan Occupational Information System
MOIS**
www.mois.org

**National Automotive Technicians Education
Foundation (NATEF)**
www.natef.org

**National Institute for Automotive Service
Excellence (ASE)**
www.ascert.org

National Automobile Dealers Association
www.nada.org

Affirmative Action Statement:

The Board of Trustees of Glen Oaks Community College affirms that through its admission, recruitment, employment and educational policies, practices, and programs, the College seeks to provide equal opportunity and affirmative action for everyone. The College shall not discriminate against anyone because of race, sex, color, religion, age, creed, national origin, height, weight, marital status or disability.



John Redmond, Jr., works for Tuffy Auto Service Center in Sturgis. He began working for the company as an intern with the St. Joseph County Career Technical Education program and then became a full-time employee at Tuffy. He is completing the Automotive Service certificate by building on the CTE credits he gained at Glen Oaks. "I typically work with exhausts, but I can work on everything dealing with a vehicle. I like working on all brands," said John. Local Tuffy Auto Service Center owner John Mikulenas added, "The Glen Oaks automotive program has provided us with a number of employees. We are fortunate to have the program here. Students gain work experience and we gain very good employees. We even linked a local graduate with one of our Tuffy locations in Ohio."

STUDENT SUPPORT

- Personalized educational and career planning
- Financial aid and scholarships
- Flexible schedules: day, evening, distance learning online/video classes
- Tutorial programs and free tutoring
- Modern labs and computer information classrooms
- Full-service library/computer center
- Small class size & caring, knowledgeable instructors

CALL NOW

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