



## troubleshoot

Technicians and Mechanics inspect, service and repair engines and sub-systems.

# OACES AUTOMOTIVE TECHNOLOGIES PROGRAM

The Automotive Technologies Program is designed to prepare students with the knowledge and skills needed to service, troubleshoot and repair basic automotive systems. Hands-on shop time allows students to disassemble, repair, reassemble, rebuild and test auto engines, brakes and suspension systems.

Course work includes the fuel systems, electrical, transmission, trans-axel and belt/pulley/chain drive systems. Instruction also covers safety practices, wiring diagrams, mechanical schematics and the use of technical manuals.

**Training Duration:** 624 hours (3-6 months)

**Schedule:** 9:00 a.m. - 3:30 p.m., 5 days a week schedule, Monday–Friday

**Admission/Academic Requirements:** Class open to all students. No technology experience required.

**Performance Expectations:** Exemplary attendance, ability to work well with others in a group setting, ability to follow directions and conform to safety rules.

**Costs:** Tuition for Automotive Technologies Program is \$5,000. Financial Assistance for Career Training classes will be assessed on an individual basis at Intake.

## Career Opportunities

- According to the Bureau of Labor Statistics, the average annual salary for Automotive Service Technicians and Mechanics is \$46,760 in 2020.
- Employment opportunities are available in the following areas: automotive service, oil changes, tire service, small engine service and repair, equipment service and repair and motorcycle/recreational vehicle service and repair.

### REFUND POLICY

**Class Cancellation:** If OACES cancels a class cohort for any reason and a student has paid tuition, 100% of the tuition paid will be refunded within 45 days of the scheduled class start date.

**Tuition Refund:** If a student chooses to withdraw or otherwise has their enrollment terminated, they are required to complete the Withdrawal Form including all signatures. The student will submit the form to the Registrar. The date of Withdrawal is based on the Last Date of Attendance (LDA) to class as recorded in OACES official attendance records. The refund will be based on the following chart:

- Withdrawal before the start of class: 100% of tuition.
- Withdrawal before the end of the fourth week of classes: 100% of tuition.
- Withdrawal after the end of the fourth week of classes: No tuition refund.
- Any refund of paid tuition will be refunded within 45 days of the date the Withdrawal Form was submitted to the Registrar.

# Program of Study & Technical Competencies

## LEVEL 1

### Orientation & Foundational Skills

- Demonstrate the knowledge of the role that safety plays in equipment and auto engine repair
- Demonstrate the use and care of appropriate personal protective equipment
- Add, subtract, multiply and divide numbers with and without a calculator
- Demonstrate workplace ethics
- Identify various careers related to equipment and auto engine repair and the expectations for each
- Know and interpret MSDS sheets
- Understand fires and extinguishing methods
- Maintain OACES minimum attendance standards
- Shop safety

### Basic Work Skills

- Understand and use terms connected with automotive technologies
- Identify and use measuring and calibrating tools
- Identify the basic hand tools used in automotive technologies
- Demonstrate the safe use of industry related hand tools
- Identify and use industry related power tools
- Identify and use common fasteners

### Technical Skills

- Understand and use parts management, inventory control and service orders
- Recognize and understand various engine designs
- Recognize and analyze components and operation of 4-stroke engines
- Recognize and use various parts of cooling systems
- Identify and use various parts of the fuel and lubrication system
- Identify and use basic parts of the governor system
- Identify, test and replace various parts of the electrical system
- Identify, test and replace various parts of the ignition system
- Complete oil and tire changes.

## LEVEL 2

### 4-Stroke Engines

- Define 4-stroke engine terminologies
- Know and use basic engine principals of operations of a 4-stroke engine
- Identify 4-stroke engine parts
- Diagnose 4-stroke engine problems
- Disassemble a 4-stroke engine
- Inspect components to verify that the correct problem has

been identified

- Repair/service failed components identified during the inspection
- Reassemble a 4-stroke engine
- Test a 4-stroke engine

### Basic Welding Competencies

- Identify and use basic welding tools and safety equipment
- Identify and use various types of welding simulators
- Identify and use MIG, TIG and Stick welders

### Disc and Drum Braking System

The training includes the following components:

- Handbrake assembly
- Diagonally split hydraulic circuit
- Master cylinder
- Brake fluid reservoir
- Brake pedal and light
- Front hubs, discs and calipers
- Rear hubs and drums

### 4, 6 and 8 Cylinder Gasoline Engine Training

The training includes the following:

- The position and mounting of all engine components
- The operation of crankshaft and pistons
- The operation of inlet and exhaust valves
- The timing relationships between engine components

### Steering and Suspension System Training

The training offers the following:

- Inspect steering shaft universal joint, flexible coupling, collapsible column, lock cylinder mechanism, and steering wheel.
- Disassemble, inspect, and reassemble rack and pinion steering gear.
- Inspect power steering fluid levels and condition.
- Diagnose power steering fluid leakage.
- Remove, inspect, and replace power steering pump, mounts, seals, pump belt, pump pulley, and pump belt.
- Remove, inspect, and install coil springs and spring insulators.

### Certifications/Instructional Outcomes

- Lincoln Welding Safety
- Basic Welding Competencies
- Automotive Technologies - Level I
- Automotive Technologies - Level II