

# AUTOMOTIVE CAREER EDUCATION

See also **AUTOMOTIVE**

**Associate in Science Degree**

## AUTOMOTIVE CAREER EDUCATION

The Associate in Science in Automotive Career Education provides technical preparation in the skills required to maintain, inspect, service, repair, and diagnose vehicles and is suitable for students wishing to further their education and career opportunities. Students who pursue the degree option can benefit from the combination of hands-on, skills competency based education combined with general education and work experience. Further education can be pursued through transfer opportunities. Four-year degree programs can benefit automotive technicians and students who are pursuing related fields such as technical writing, engineering and manufacturing, business, and education.

### REQUIRED COURSES:

	<b>Units</b>
ACE V11 Automotive Vehicle Maintenance	3
ACE V12 Automotive Electrical Systems I	4
ACE V13 Automotive Engine Repair	4
ACE V21 Automotive Brake Systems	4
ACE V22 Automotive Steering and Suspension Systems	4
ACE V23 Automotive Electrical Systems II	4
ACE V31 Automotive Heating and Air Conditioning	4
ACE V32 Automotive Engine Management	4
ACE V33 Automotive Manual Transmissions and Transaxles	4
ACE V41 Automotive Automatic Transmissions and Transaxles	4
ACE V42 Automotive Engine Driveability	4

**TOTAL** **43**

### PROGRAM STUDENT LEARNING OUTCOMES

Upon successful completion of the **Automotive Career Education** program students will be able to:

- Identify and describe automotive system theory and operation.
- Perform maintenance service procedures in a timely manner and to industry standards.
- Practice safety in the repair and service associated with automotive systems.
- Using a systematic approach, determine the proper method of testing to be performed on automotive systems.

**Certificate of Achievement**

## AUTOMOTIVE MAINTENANCE TECHNICIAN

The Automotive Maintenance Technician Certificate of Achievement Program provides technical preparation for the skills necessary for an entry-level position as an automotive maintenance technician. Students will learn about the automotive industry, positions, pay structure, certification levels, service information and warranty procedures, shop and tool safety, multipoint inspections, maintenance services, tire repair and service procedures, engine service, and electrical system base level inspection and repair procedures. Assessments occur individually through written exams and skills competency assessments with an emphasis on maintenance procedures. Critical thinking skills, practical hands-on skills, safety, and employability (soft) skills are practiced throughout the curriculum. Students who successfully complete this program may continue their automotive education by taking additional courses that lead to higher level certificates and/or an AS degree.

### REQUIRED COURSES:

	<b>Units</b>
ACE V11 Automotive Vehicle Maintenance	3
ACE V12 Automotive Electrical Systems I	4
ACE V13 Automotive Engine Repair	4

**TOTAL** **11**

### PROGRAM STUDENT LEARNING OUTCOMES

Upon successful completion of the **Automotive Maintenance Technician** program students will be able to:

- Identify and describe automotive career opportunities and prepare a resume and cover letter in search of an entry level position in the automotive industry.
- Perform maintenance service procedures in a timely manner and to industry standards.
- Perform basic electrical and engine system maintenance procedures in a timely manner and to industry standards.





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**Certificate of Achievement**

**AUTOMOTIVE SERVICE TECHNICIAN**

The Automotive Service Technician Certificate of Achievement Program provides technical preparation in the skills necessary for a position as an automotive service technician. Internship hours as an automotive technician are required to complete this program. Students will learn how to perform maintenance, electrical, brakes, and steering and suspension system service procedures. Assessments occur individually through written exams and skills competency assessments with an emphasis on service procedures. Critical thinking skills, practical hands-on skills, safety, and employability (soft) skills are practiced throughout the curriculum. Students who successfully complete this program may continue their automotive education by taking more courses that lead to higher level certificates and an AS degree.

<b>REQUIRED COURSES:</b>		<b>Units</b>
ACE V11	Automotive Vehicle Maintenance	3
ACE V12	Automotive Electrical Systems I	4
ACE V21	Automotive Brake Systems	4
ACE V22	Automotive Steering and Suspension Systems	4
AUTO V96	Automotive Internship II	3
<b>TOTAL</b>		<b>18</b>

For other course descriptions, see Automotive

**PROGRAM STUDENT LEARNING OUTCOMES**

Upon successful completion of the **Automotive Service Technician** program students will be able to:

- Perform maintenance service procedures in a timely manner and to industry standards.
- Perform battery, starting, and charging system inspection and service procedures in a timely manner and to industry standards.
- Perform disc and brake drum inspection and service procedures in a timely manner and to industry standards.
- Perform wheel alignment, tire, steering, and suspension inspection and service procedures in a timely manner and to industry standards.

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**Certificate of Achievement**

**AUTOMOTIVE REPAIR TECHNICIAN**

The Automotive Repair Technician Certificate of Achievement Program provides technical preparation for the skills necessary for an automotive repair technician. Internship hours as an automotive technician are required to complete this program. Students will learn how to perform inspection, service, and repair procedures to electrical systems, engines, manual transmissions, automatic transmissions, transfer cases and differentials. Assessments occur through written exams and skills competency assessments with an emphasis on repair procedures. Critical thinking skills, practical hands-on skills, safety, and employability (soft) skills are practiced throughout the curriculum. Students who successfully complete this program may continue their automotive education by pursuing additional certificates, an AS degree and transfer opportunities

<b>REQUIRED COURSES:</b>		<b>Units</b>
ACE V11	Automotive Vehicle Maintenance	3
ACE V12	Automotive Electrical Systems I	4
ACE V13	Automotive Engine Repair	4
ACE V33	Automotive Manual Transmissions and Transaxles	4
ACE V41	Automotive Automatic Transmissions and Transaxles	4
AUTO V96	Automotive Internship II	3
<b>TOTAL</b>		<b>22</b>

For other course descriptions, see Automotive

**PROGRAM STUDENT LEARNING OUTCOMES**

Upon successful completion of the **Automotive Repair Technician** program students will be able to:

- Perform maintenance service procedures in a timely manner and to industry standards.
- Perform battery, starting, and charging system inspection and service procedures in a timely manner and to industry standards.
- Perform engine inspection, service, and repair procedures in a timely manner and to industry standards.

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**Certificate of Achievement**

**AUTOMOTIVE PERFORMANCE TECHNICIAN**

The Automotive Performance Technician Certificate of Achievement Program provides technical preparation for the skills necessary for a performance level technician. Internship hours as an automotive technician are required to complete this program. Students will learn how to perform inspection, service, repair, and diagnosis of engine mechanical systems, electrical and electronic systems, heating and air-conditioning systems, driver and passenger comfort systems, and drivetrain and powertrain control systems. Assessments occur through written exams and skills competency assessments with an emphasis on diagnostic procedures. Critical thinking skills, practical hands-on skills, safety, and employability (soft) skills are practiced throughout the curriculum. Students who successfully complete this program may continue their automotive education by pursuing an AS degree and transfer opportunities.

<b>REQUIRED COURSES:</b>		<b>Units</b>
ACE V12	Automotive Electrical Systems I	4
ACE V13	Automotive Engine Repair	4
ACE V23	Automotive Electrical Systems II	4
ACE V31	Automotive Heating and Air Conditioning	4
ACE V32	Automotive Engine Management	4
ACE V41	Automotive Automatic Transmissions and Transaxles	4
ACE V42	Automotive Engine Driveability	4
AUTO V96	Automotive Internship II	6
<b>TOTAL</b>		<b>34</b>

*Program note: AUTO V96 must be taken in two or more semesters to complete the six-unit total requirement for this certificate.*

For other course descriptions, see Automotive

**PROGRAM STUDENT LEARNING OUTCOMES**

Upon successful completion of the **Automotive Performance Technician** program students will be able to:

- Perform maintenance service procedures in a timely manner and to industry standards.
- Perform electrical and electronic system diagnosis in a timely manner and to industry standards.
- Perform heating, air-conditioning, and driver/passenger comfort system diagnosis in a timely manner and to industry standards.
- Perform powertrain and drivetrain diagnosis in a timely manner and to industry standards.

**COURSE DESCRIPTIONS**

**ACE V11 - AUTOMOTIVE VEHICLE MAINTENANCE 3 Units**

*Hours: 2 lecture, 4 laboratory weekly*

This course is a prerequisite for all automotive coursework and prepares students for an entry level position as a maintenance technician. The course covers automotive industry structure, successful career building techniques, employee and employer responsibilities, shop safety procedures, tools and equipment, vehicle inspections, and basic maintenance, service, and repair procedures. Partial preparation for ASE (Automotive Service Excellence) G1 (Maintenance Technician Certification) is provided. The course also determines which automotive work experience path is best suited for each student and determines the most appropriately matched program cohort. *Field trips will be required.*

**ACE V12 - AUTOMOTIVE ELECTRICAL SYSTEMS I 4 Units**

*Prerequisite: ACE V11 or concurrent enrollment*

*Hours: 2 lecture, 6 laboratory weekly*

This course provides technical preparation in the skills required to service, inspect, and repair base automotive electrical systems. *Field trips may be required.*

**ACE V13 - AUTOMOTIVE ENGINE REPAIR 4 Units**

*Prerequisite: ACE V11 or concurrent enrollment*

*Hours: 2 lecture, 6 laboratory weekly*

This course provides technical preparation in the skills required to diagnose, adjust, maintain, and repair automotive engines. *Field trips may be required.*

**ACE V21 - AUTOMOTIVE BRAKE SYSTEMS 4 Units**

*Prerequisite: ACE V11 or concurrent enrollment*

*Hours: 2 lecture, 6 laboratory weekly*

This course provides technical preparation in the skills required to inspect, service, and repair automotive brake systems.

**ACE V22 - AUTOMOTIVE STEERING AND SUSPENSION SYSTEMS 4 Units**

*Prerequisite: ACE V11 or concurrent enrollment*

*Hours: 2 lecture, 6 laboratory weekly*

This course provides technical preparation in the skills required to inspect, service, and repair automotive steering and suspension systems.

**ACE V23 - AUTOMOTIVE ELECTRICAL SYSTEMS II 4 Units**

*Prerequisite: ACE V12*

*Hours: 2 lecture, 6 laboratory weekly*

This course provides technical preparation in the skills required to diagnose automotive electronic systems. *Field trips will be required.*

**ACE V31 - AUTOMOTIVE HEATING AND AIR CONDITIONING 4 Units**

*Prerequisite: ACE V12*

*Hours: 2 lecture, 6 laboratory weekly*

This course provides technical training and skills preparation required to service, diagnose, and repair automotive heating, ventilation, and air conditioning systems. *Field trips may be required.*

**ACE V32 - AUTOMOTIVE ENGINE MANAGEMENT 4 Units**

*Prerequisite: ACE V12 AND ACE V13*

*Hours: 2 lecture, 6 laboratory weekly*

This course provides technical preparation in the skills required to diagnose base engine control management systems. *Field trips may be required.*