Automotive Mechanics Technology

Overview

The Automotive Mechanics Technology program emphasizes developing skills required for efficient diagnosis, maintenance, and repair of the automobile and its components. This program and its instructors are Automotive Service Excellence (ASE) certified. The college offers both theoretical and practical training relating to all phases of the automobile.

The Automotive Mechanics Technology and Ford ASSET programs are certified by the ASE (Automotive Service Excellence) Education Foundation (formerly NATEF) as Master Automobile Service Technology programs.

ASE Education Foundation
1503 Edwards Ferry Rd., NE
Suite 401 Leesburg, VA 20176
(703) 669-6650, (703) 669-6677
info@ASEeducationFoundation.org

Degrees and Certificates Offered

A.S. in Automotive Mechanics Technology (Ford ASSET)
A.S. in Automotive Mechanics Technology
Automatic Transmissions and Transaxles Certificate
Automatic Transmissions/Transaxles (Ford ASSET) Certificate
Automotive Brakes (Ford ASSET) Certificate
Automotive Brakes Certificate
Automotive Electrical Systems (Ford ASSET) Certificate
Automotive Electrical Systems Certificate
Automotive Emission Control Certificate
Automotive Engine Performance (Ford ASSET) Certificate
Automotive Engine Performance Certificate
Automotive Engine Repair (Ford ASSET) Certificate
Automotive Engine Repair Certificate
Automotive Heating and Air Conditioning (Ford ASSET) Certificate
Automotive Heating and Air Conditioning Certificate
Automotive Mechanics Technology (Ford ASSET) Certificate
Automotive Mechanics Technology Certificate
Automotive Suspension and Steering (Ford ASSET) Certificate
Automotive Suspension and Steering Certificate
Manual Drive Train and Axles (Ford ASSET) Certificate
Small Engine Repair Certificate

Dean
Bob Johnson
Department Chair
Kevin Rogers
Phone
(916) 525-4323
Email
johnson3@crc.losrios.edu

Associate Degrees
A.S. in Automotive Mechanics Technology (Ford ASSET)

The Ford Automotive Student Service Education Training (ASSET) Program is a two-year Associate's Degree program in Automotive Mechanics Technology. This program is designed to help students develop the skills necessary to efficiently and accurately maintain, diagnose, and service/repair all major systems of the automobile.

The Ford ASSET Program is a partnership between Cosumnes River College (CRC) and Ford Motor Company. Ford ASSET is the only program that includes an in dealership cooperative work experience component. Students will rotate between school and the dealership for the duration of the two-year program, giving them invaluable hands-on experience while they learn.

Courses within the Ford ASSET program allow students to earn Service Technician Specialty Training (STST) certifications from Ford Motor Company in the following areas:

- Electrical Systems
- Brake Systems
- Steering & Suspension
- Climate Control
- Automatic Transmissions
- Gasoline Engine Repair
- Gasoline Engine Performance
- Diesel Engine Repair
- Diesel Engine Performance
- Manual Transmissions

Instructors for this program are Ford STST certified as required by Ford Motor Company standards.

Completion of this degree also represents completion of a National Automotive Technicians Education Foundation (NATEF) accredited Master Automotive Service Technology (MAST) program. Instructors for this program are Automotive Service Excellence (ASE) certified as required by NATEF standards.

Upon successful completion of this program, students are well qualified for placement as service technicians in Ford and/or Lincoln dealerships. Students may apply units earned by the successful completion of this program to one or more of the specialized certificates as well as the Associate's degree.

Catalog Date: January 1, 2022

Degree Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year - Fall Semester:</td>
<td></td>
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</tr>
<tr>
<td>AMT 370</td>
<td>Ford ASSET Automotive Fundamentals and Dealership Practices</td>
<td>4</td>
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<tr>
<td>AMT 371</td>
<td>Ford ASSET Automotive Electrical/Electronic Systems</td>
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<td>AMT 372</td>
<td>Ford ASSET Automotive Brake Systems</td>
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<td>AMT 498</td>
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<td>First Year - Spring Semester:</td>
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<td>AMT 374</td>
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<td>AMT 375</td>
<td>Ford ASSET Automotive Wheel Alignment</td>
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<td>AMT 376</td>
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<td>First Year - Summer Semester:</td>
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<tr>
<td>AMT 378</td>
<td>Ford ASSET Automatic Transmissions/Transaxles</td>
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<tr>
<td>AMT 130</td>
<td>Ford ASSET Advanced Automatic Transmission Diagnosis</td>
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<tr>
<td>AMT 379</td>
<td>Ford ASSET Automotive Engine Repair</td>
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<td>AMT 385</td>
<td>Ford ASSET Automotive Manual Drive Train and Axles</td>
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<td>Second Year - Fall Semester:</td>
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<tr>
<td>AMT 381</td>
<td>Ford ASSET Electronic Engine Control</td>
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<td>AMT 382</td>
<td>Ford ASSET Gasoline Engine Performance</td>
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<td>AMT 383</td>
<td>Ford ASSET Advanced Gasoline Engine Performance</td>
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<td>AMT 498</td>
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<tr>
<td>Second Year - Spring Semester:</td>
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<td>AMT 131</td>
<td>Ford ASSET Diesel Engine Performance</td>
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<td>AMT 340</td>
<td>Emission Control Inspection and Repair</td>
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<td>WELD 160</td>
<td>Welding Technology for the Automotive Industry</td>
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<td>Total Units:</td>
<td>59.5</td>
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</table>

The Automotive Mechanics Technology (Ford ASSET) Associate in Science (A.S.) degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See CRC graduation requirements.

Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Eligibility for ENGWR 101.
- Eligibility for MATH 100.
- Possess a valid driver's license with a driving record that is suitable for the sponsoring dealership's insurance requirements.
• Able to operate a vehicle equipped with a manual transmission.
• Meet sponsoring dealership hiring requirements which may include submitting to a drug test and/or criminal background check.
• Completion of an application for the Ford ASSET Program (can be found at http://www.crc.losrios.edu/cars).

Enrollment Process

Eligible students are selected for the program according to the following steps:

• Students are selected from the applicant pool in the order in which they are received.
• Only students who meet the stated eligibility requirements will be considered for the program.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

• PSLO 1: Understand the fundamental purpose, components, and operation of major automotive systems to include gasoline engines, automatic transmissions and transaxles, manual transmissions, drivetrains, and axles, suspension and steering systems, brake systems, electrical and electronic systems, heating and air conditioning systems, and engine performance systems.
• PSLO 2: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
• Understand typical new car dealership hierarchy, structure, and standard procedures.
• Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
• PSLO 3: Diagnose engine mechanical concerns, conduct diagnostic testing procedures, and perform the procedures and techniques involved in typical engine repairs and overhauls.
• PSLO 4: Demonstrate the ability to diagnose, service, and repair automatic transmissions and transaxes.
• PSLO 5: Demonstrate the ability to diagnose and repair manual transmissions, transaxes, and drive train concerns.
• PSLO 6: Demonstrate the ability to diagnose and repair automotive suspension and steering concerns.
• PSLO 7: Demonstrate the ability to diagnose and repair automotive brake systems.
• PSLO 8: Demonstrate the ability to diagnose and repair automotive electrical and electronic concerns.
• PSLO 9: Demonstrate the ability to diagnose and repair automotive heating, ventilation, and air conditioning (HVAC) system concerns.
• PSLO 10: Demonstrate the ability to diagnose, service, and repair gasoline engine performance systems and their components.
• Verify the outcome of the repair through a test drive analysis or system self-test.

Career Information

• Automotive Technician • Light Duty Diesel Technician • Ford/Lincoln Specialized Technician (in any of the Service Technician Specialty Training [STST] areas) • Ford/Lincoln Engine Master Technician • Ford/Lincoln Chassis Master Technician • Ford/Lincoln Drivetrain Master Technician • Ford/Lincoln Senior Master Technician

Students who successfully complete the program will:
• Earn an Associate’s degree in Automotive Mechanics Technology.
• Be granted Ford Service Technician Specialty Training (STST) credentials.
• Be prepared for Automotive Service Excellence (ASE) certification in all Automobile series areas.
• Be eligible to sit for testing for both the California SMOG Inspector and SMOG Repair licenses.

A.S. in Automotive Mechanics Technology

This program emphasizes developing skills required for efficient diagnosis, maintenance, and repair of the automobile and its components. Completion of this degree also represents completion of a National Automotive Technicians Education Foundation (NATEF) accredited Master Automotive Service Technology (MAST) program. Instructors for this program are Automotive Service Excellence (ASE) certified as required by NATEF standards.

Upon successful completion of the program, students are qualified for placement as technicians in the automotive industry. Students may apply units earned by successful completion of Automotive Mechanics Technology courses to one or more of the specialized certificates and/or the Associate Degree in Automotive Mechanics Technology.

HIGHLIGHTS
*One of the best equipped shops in Northern California for hands-on training
*Graduates routinely pass ASE and State Smog Certification exams
*A facility chosen as part of the GM, Ford and Chrysler Technical Training Network
*NATEF MAST program
*ASE Certified instructors
*Class sizes with an excellent teacher/student ratio

Catalog Date: January 1, 2022

Degree Requirements

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<tbody>
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<td>AMT 300</td>
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<td>4</td>
</tr>
<tr>
<td>AMT 303</td>
<td>Automotive Electrical &amp; Electronic Systems</td>
<td>4</td>
</tr>
<tr>
<td>AMT 304</td>
<td>Automotive Manual Drive Train and Axles</td>
<td>3</td>
</tr>
<tr>
<td>AMT 310</td>
<td>Engine Performance</td>
<td>3</td>
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<tr>
<td>AMT 314</td>
<td>Wheel Alignment</td>
<td>3</td>
</tr>
<tr>
<td>AMT 316</td>
<td>Automotive Brakes</td>
<td>3</td>
</tr>
<tr>
<td>AMT 322</td>
<td>Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>AMT 324</td>
<td>Electronic Fuel Injection</td>
<td>3</td>
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<tr>
<td>AMT 326</td>
<td>Automotive Heating and Air Conditioning</td>
<td>3</td>
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</tbody>
</table>
Students can enter the General Program in Automotive Mechanics Technology at any semester, summer, fall, or spring. Certificate programs as well as an A.S. degree in Automotive Mechanics Technology are available.
Recognize electronic principles and how they relate to particular automotive systems.
Perform the necessary repair procedure for a certain set electrical/electronic diagnostic problems.
Understand the operation of clutches, manual transmissions, transaxles, transfer cases, drive shafts, and axle assemblies (powertrain).
Demonstrate the ability to diagnose manual powertrain concerns.
Understand theory and operation of automatic transmissions/transaxles.
Demonstrate the ability to repair automatic transmissions/transaxles.

Automatic Transmissions/Transaxles (Ford ASSET) Certificate

This certificate represents a subset of the Ford Automotive Student Service Education Training (ASSET) Program and is intended for students wishing to specialize in automatic transmissions and transaxles. This certificate is designed to help students develop the skills necessary to efficiently and accurately maintain, diagnose, and service/repair automatic transmissions and transaxles.

**Certificate Requirements**

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<tr>
<td>AMT 371</td>
<td>Ford ASSET Automotive Electrical/Electronic Systems</td>
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</tr>
<tr>
<td>AMT 378</td>
<td>Ford ASSET Automatic Transmissions/Transaxles</td>
<td>3</td>
</tr>
<tr>
<td>AMT 130</td>
<td>Ford ASSET Advanced Automatic Transmission Diagnosis</td>
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**A minimum of 3 units from the following:**

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<tbody>
<tr>
<td>AMT 498</td>
<td>Work Experience in Automotive Mechanics Technology (0.5 - 4)</td>
<td>3</td>
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**Total Units:** 14.5

**Enrollment Eligibility**

To be eligible for enrollment in the program, the student must meet the following criteria:

- Eligibility for ENGWR 101.
- Eligibility for MATH 100.
- Possess a valid driver's license with a driving record that is suitable for the sponsoring dealership's insurance requirements.
- Able to operate a vehicle equipped with a manual transmission.
- Meet sponsoring dealership hiring requirements which may include submitting to a drug test and/or criminal background check.
- Completion of an application for the Ford ASSET Program (can be found at http://www.crc.losrios.edu/cars).

**Enrollment Process**

Eligible students are selected for the program according to the following steps:

- Students are selected from the applicant pool in the order in which they are received.
- Only students who meet the stated eligibility requirements will be considered for the program.

**Student Learning Outcomes**

Upon completion of this program, the student will be able to:

- SLO 1: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- Understand typical new car dealership hierarchy, structure, and standard procedures.
- Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- SLO 2: Understand the fundamental purpose, components, and operation of automatic transmissions and transaxles.
- SLO 3: Demonstrate the ability to diagnose, service, and repair automatic transmissions and transaxles.
- Verify the outcome of the repair through a test drive analysis or system self-test.

**Career Information**

- Automotive Maintenance / Light Repair Technician • Automatic Transmission Technician • Ford/Lincoln Specialized Technician (in Service Technician Specialty Training [STST] area 37-Automatic Transmissions)

**Automotive Brakes (Ford ASSET) Certificate**

This certificate represents a subset of the Ford Automotive Student Service Education Training (ASSET) Program and is intended for students wishing to specialize in automotive brake systems. This certificate is designed to help students develop the skills necessary to efficiently and accurately maintain, diagnose, and service/repair automotive brake systems.

**Catalog Date:** January 1, 2022
Certificate Requirements

<table>
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<tr>
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<tbody>
<tr>
<td>AMT 370</td>
<td>Ford ASSET Automotive Fundamentals and Dealership Practices</td>
<td>4</td>
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<tr>
<td>AMT 371</td>
<td>Ford ASSET Automotive Electrical/Electronic Systems</td>
<td>3</td>
</tr>
<tr>
<td>AMT 372</td>
<td>Ford ASSET Automotive Brake Systems</td>
<td>3</td>
</tr>
<tr>
<td>AMT 498</td>
<td>Work Experience in Automotive Mechanics Technology (0.5 - 4)</td>
<td>3</td>
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A minimum of 3 units from the following:

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<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 498</td>
<td>Work Experience in Automotive Mechanics Technology (0.5 - 4)</td>
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</table>

Total Units: 13

Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Eligibility for ENGWR 101.
- Eligibility for MATH 100.
- Possess a valid driver's license with a driving record that is suitable for the sponsoring dealership's insurance requirements.
- Able to operate a vehicle equipped with a manual transmission.
- Meet sponsoring dealership hiring requirements which may include submitting to a drug test and/or criminal background check.
- Completion of an application for the Ford ASSET Program (can be found at http://www.crc.losrios.edu/cars).

Enrollment Process

Eligible students are selected for the program according to the following steps:

- Students are selected from the applicant pool in the order in which they are received.
- Only students who meet the stated eligibility requirements will be considered for the program.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- SLO 1: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- Understand typical new car dealership hierarchy, structure, and standard procedures.
- Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- SLO 2: Understand the fundamental purpose, components, and operation of automotive brake systems.
- SLO 3: Demonstrate the ability to diagnose and repair automotive brake systems.
- Verify the outcome of the repair through a test drive analysis or system self-test.

Career Information

- Automotive Maintenance / Light Repair Technician
- Brake System Technician
- Ford/Lincoln Specialized Technician (in Service Technician Specialty Training [STST] area 38-Brakes)

Automotive Brakes Certificate

This curriculum is designed for students interested in seeking employment in the repair and installation of automotive brakes systems.

Catalog Date: January 1, 2022

Certificate Requirements

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<thead>
<tr>
<th>COURSE CODE</th>
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<td>AMT 300</td>
<td>Automotive Fundamentals and Shop Procedures</td>
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<td>AMT 303</td>
<td>Automotive Electrical &amp; Electronic Systems</td>
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<tr>
<td>AMT 310</td>
<td>Engine Performance</td>
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<td>AMT 316</td>
<td>Automotive Brakes</td>
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<tr>
<td>AMT 332</td>
<td>Automotive Computerized Controls</td>
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Total Units: 17

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- Describe the fundamentals of automotive systems to include engine operation and repair, automatic transmissions/transaxles, manual drive train and axles, suspension and steering, brakes, electrical and electronic systems, heating and air conditioning, and engine performance.
- Describe the fundamentals of diagnosing automotive systems.
· Explain how to perform fundamental diagnostic procedures as outlined in manufacture service publications.
· Describe the theory and operation of Automotive Electrical/Electronic Systems.
· Recall and apply step-by-step diagnostic procedures.
· Repair automotive electrical/electronic systems relating to Brake Systems.
· Understand theory and operation of automotive brake systems.
· Explain the operation of conventional, anti-lock, traction control and electronic stability assist brake systems.
· Demonstrate the ability to repair automotive brake systems.
· Explain theory and operations of automotive computerized controls.
· Perform inspection, testing, disassembly, component replacement, reassembly, and confirmation of repair on automotive computerized control systems.

Automotive Electrical Systems (Ford ASSET) Certificate

This certificate represents a subset of the Ford Automotive Student Service Education Training (ASSET) Program and is intended for students wishing to specialize in automotive electrical systems. This certificate is designed to help students develop the skills necessary to efficiently and accurately maintain, diagnose, and service/repair automotive electrical systems.

**Catalog Date:** January 1, 2022

## Certificate Requirements

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<thead>
<tr>
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</tr>
<tr>
<td>AMT 371</td>
<td>Ford ASSET Automotive Electrical/Electronic Systems</td>
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<td>AMT 381</td>
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<td><strong>A minimum of 3 units from the following:</strong></td>
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<tr>
<td>AMT 498</td>
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<td><strong>Total Units:</strong></td>
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## Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Eligibility for ENGWR 101.
- Eligibility for MATH 100.
- Possess a valid driver's license with a driving record that is suitable for the sponsoring dealership's insurance requirements.
- Able to operate a vehicle equipped with a manual transmission.
- Meet sponsoring dealership hiring requirements which may include submitting to a drug test and/or criminal background check.
- Completion of an application for the Ford ASSET Program (can be found at http://www.crc.losrios.edu/cars).

## Enrollment Process

Eligible students are selected for the program according to the following steps:

- Students are selected from the applicant pool in the order in which they are received.
- Only students who meet the stated eligibility requirements will be considered for the program.

## Student Learning Outcomes

Upon completion of this program, the student will be able to:

- SLO 1: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- Understand typical new car dealership hierarchy, structure, and standard procedures.
- Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- SLO 2: Understand the fundamental purpose, components, and operation of automotive electrical and electronic systems.
- SLO 3: Demonstrate the ability to diagnose, service, and repair automotive electrical and electronic systems.
- Verify the outcome of the repair through a test drive analysis or system self-test.

## Career Information

- Automotive Technician (Electrical Specialist) • Ford/Lincoln Specialized Technician (in Service Technician Specialty Training [STST] area 34-Electrical Systems)

### Automotive Electrical Systems Certificate

This curriculum is designed for students interested in seeking employment in the diagnosis and repair of automotive electrical systems.

**Catalog Date:** January 1, 2022
Certificate Requirements

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- Describe the fundamentals of automotive systems to include engine operation and repair, automatic transmissions/transaxles, manual drive train and axles, suspension and steering, brakes, electrical and electronic systems, heating and air conditioning, and engine performance.
- Explain how to perform fundamental diagnostic procedures as outlined in manufacturer service publications.
- Describe the theory and operation of Automotive Electrical/Electronic Systems.
- Perform the necessary repair procedure for a certain set electrical/electronic diagnostic problems.
- Describe the theory and operation of automotive ignition systems.
- Apply test procedures on automotive ignition systems and components.
- Describe the theory and operation of Electronic Control Systems.
- Diagnose automotive electronic control system concerns.
- Explain the relationships between input sensors, processing and output sensors.
- Perform the necessary repair procedures for a certain set of automotive computerized control diagnostic problems.

Automotive Emission Control Certificate

This curriculum is designed for students who are interested in seeking employment in the inspection, diagnosis, and/or repair of automotive emission control systems. Students completing this program may be eligible to pursue licensing as a California SMOG Check Inspector and/or California SMOG Check Repair Technician.

Catalog Date: January 1, 2022

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<td>AMT 324</td>
<td>Electronic Fuel Injection</td>
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<td>AMT 332</td>
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<tr>
<td>AMT 340</td>
<td>Emission Control Inspection and Repair</td>
<td>5</td>
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<td></td>
<td><strong>Total Units:</strong></td>
<td><strong>22</strong></td>
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</table>

1 A current advanced emission control smog license will meet the requirement for AMT 340. ASE (Automotive Service Excellence) Certification in A6, A8, and L1 will meet requirements for AMT 303, 310, 332. No units will be earned for requirements met through licensing or certification exams. In these cases fewer total units are required.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- Recognize electronic principles and how they relate to particular automotive systems.
- Diagnose automotive engine performance concerns.
- Demonstrate the ability to diagnose electronic fuel injection.
- Diagnose automotive computerized control concerns.
- Identify the fundamentals of automotive emission systems to include electrical, vacuum, computerized vehicle emission components, emission regulations, emission testing, emission reduction systems, and emission inspection/diagnostic equipment.

Automotive Engine Performance (Ford ASSET) Certificate

This certificate represents a subset of the Ford Automotive Student Service Education Training (ASSET) Program and is intended for students wishing to specialize in gasoline engine performance systems. This certificate is designed to help students develop the skills necessary to efficiently and accurately maintain, diagnose, and service/repair gasoline engine performance systems.

Catalog Date: January 1, 2022

Certificate Requirements
### Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Eligibility for ENGWR 101.
- Eligibility for MATH 100.
- Possess a valid driver's license with a driving record that is suitable for the sponsoring dealership's insurance requirements.
- Able to operate a vehicle equipped with a manual transmission.
- Meet sponsoring dealership hiring requirements which may include submitting to a drug test and/or criminal background check.
- Completion of an application for the Ford ASSET Program (can be found at [http://www.crc.losrios.edu/cars](http://www.crc.losrios.edu/cars)).

### Enrollment Process

Eligible students are selected for the program according to the following steps:

- Students are selected from the applicant pool in the order in which they are received.
- Only students who meet the stated eligibility requirements will be considered for the program.

### Student Learning Outcomes

Upon completion of this program, the student will be able to:

- SLO 1: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- Demonstrate the use of special tools necessary to repair gasoline engine performance systems and their components.
- Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- SLO 2: Understand the fundamental purpose, components, and operation of gasoline engine performance systems.
- SLO 3: Demonstrate the ability to diagnose, service, and repair gasoline engine performance systems and their components.
- Verify the outcome of the repair through a test drive analysis or system self-test.

### Career Information

- Automotive Technician (Drivability Specialist) • Ford/Lincoln Specialized Technician (in Service Technician Specialty Training [STST] area 31-Gasoline Engine Performance)

### Automotive Engine Performance Certificate

This curriculum is designed for students who are interested in seeking employment in the inspection, maintenance, diagnosis, and repair of automotive engine performance systems.

**Catalog Date:** January 1, 2022

### Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 300</td>
<td>Automotive Fundamentals and Shop Procedures</td>
<td>4</td>
</tr>
<tr>
<td>AMT 303</td>
<td>Automotive Electrical &amp; Electronic Systems</td>
<td>4</td>
</tr>
<tr>
<td>AMT 306</td>
<td>Small Engine Repair (3)</td>
<td>3</td>
</tr>
<tr>
<td>or AMT 322</td>
<td>Engine Repair (3)</td>
<td></td>
</tr>
<tr>
<td>AMT 310</td>
<td>Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>AMT 321</td>
<td>Advanced Automotive Electrical &amp; Hybrid Vehicle Systems</td>
<td>3</td>
</tr>
<tr>
<td>AMT 324</td>
<td>Electronic Fuel Injection</td>
<td>3</td>
</tr>
<tr>
<td>AMT 332</td>
<td>Automotive Computerized Controls (3)</td>
<td>3 - 5</td>
</tr>
<tr>
<td>or AMT 340</td>
<td>Emission Control Inspection and Repair (5)</td>
<td></td>
</tr>
</tbody>
</table>

**Total Units:** 23 - 25

### Student Learning Outcomes

Upon completion of this program, the student will be able to:

- Recognize electronic principles and how they relate to particular automotive systems.
- Explain the proper use of technical service publications used in the diagnostic procedure.
- Repair automotive engine performance systems.
- Describe theory and the operation of automotive ignition systems.
- Diagnose automotive electronic control system concerns.
- Diagnose engine mechanical concerns and conduct diagnostic testing procedures.
- Understand theory and operation of electronic fuel injection.
- Perform the necessary repair procedures for a certain set of automotive computerized control diagnostic problems.
- Identify the fundamentals of automotive emission systems to include electrical, vacuum, computerized vehicle emission components, emission regulations, emission testing, emission reduction systems, and emission inspection/diagnostic equipment.

Automotive Engine Repair (Ford ASSET) Certificate

This certificate represents a subset of the Ford Automotive Student Service Education Training (ASSET) Program and is intended for students wishing to specialize in automotive engine repair. This certificate is designed to help students develop the skills necessary to efficiently and accurately maintain, diagnose, and service/repair automotive engines.

Catalog Date: January 1, 2022

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 370</td>
<td>Ford ASSET Automotive Fundamentals and Dealership Practices</td>
<td>4</td>
</tr>
<tr>
<td>AMT 379</td>
<td>Ford ASSET Automotive Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>AMT 382</td>
<td>Ford ASSET Gasoline Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>A minimum of 3 units from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMT 498</td>
<td>Work Experience in Automotive Mechanics Technology (0.5 - 4)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Units: 13

Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Eligibility for ENGWR 101.
- Eligibility for MATH 100.
- Possess a valid driver's license with a driving record that is suitable for the sponsoring dealership's insurance requirements.
- Able to operate a vehicle equipped with a manual transmission.
- Meet sponsoring dealership hiring requirements which may include submitting to a drug test and/or criminal background check.
- Completion of an application for the Ford ASSET Program (can be found at http://www.crc.losrios.edu/cars).

Enrollment Process

Eligible students are selected for the program according to the following steps:

- Students are selected from the applicant pool in the order in which they are received.
- Only students who meet the stated eligibility requirements will be considered for the program.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- SLO 1: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- Understand typical new car dealership hierarchy, structure, and standard procedures.
- Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- SLO 2: Understand the fundamental purpose, components, and operation of automotive engines.
- SLO 3: Diagnose engine mechanical concerns, conduct diagnostic testing procedures, and perform the procedures and techniques involved in typical engine repairs and overhauls.
- Verify the outcome of the repair through a test drive analysis or system self-test.

Career Information

- Automotive Technician (Engine Repair Specialist) • Ford/Lincoln Specialized Technician (Service Technician Specialty Training [STST] area 32-Gasoline Engine Repair)

Automotive Engine Repair Certificate

This curriculum is designed for students interested in seeking employment in the engine overhaul and engine repair field.

Catalog Date: January 1, 2022
Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>AMT 300</td>
<td>Automotive Fundamentals and Shop Procedures</td>
<td>4</td>
</tr>
<tr>
<td>AMT 306</td>
<td>Small Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>AMT 322</td>
<td>Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>A minimum of 3 units from the following:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any other Automotive Mechanics Technology course</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Units:</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- SLO 1: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- SLO 2: Understand typical automotive repair shop hierarchy, structure, and standard procedures.
- SLO 3: Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- SLO 4: Understand the fundamental purpose, components, and operation of automotive engines.
- SLO 5: Diagnose engine mechanical concerns, conduct diagnostic testing procedures, and perform the procedures and techniques involved in typical engine repairs and overhauls.
- SLO 6: Verify the outcome of the repair through a test drive analysis or system self-test.

Automotive Heating and Air Conditioning (Ford ASSET) Certificate

This certificate represents a subset of the Ford Automotive Student Service Education Training (ASSET) Program and is intended for students wishing to specialize in automotive heating and air conditioning systems. This certificate is designed to help students develop the skills necessary to efficiently and accurately maintain, diagnose, and service/repair automotive heating and air conditioning systems.

**Catalog Date:** January 1, 2022

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 370</td>
<td>Ford ASSET Automotive Fundamentals and Dealership Practices</td>
<td>4</td>
</tr>
<tr>
<td>AMT 371</td>
<td>Ford ASSET Automotive Electrical/Electronic Systems</td>
<td>3</td>
</tr>
<tr>
<td>AMT 376</td>
<td>Ford ASSET Automotive Heating and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>AMT 379</td>
<td>Ford ASSET Automotive Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Units:</strong></td>
<td><strong>13</strong></td>
</tr>
</tbody>
</table>

Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Eligibility for ENGWR 101.
- Eligibility for MATH 100.
- Possess a valid driver's license with a driving record that is suitable for the sponsoring dealership's insurance requirements.
- Able to operate a vehicle equipped with a manual transmission.
- Meet sponsoring dealership hiring requirements which may include submitting to a drug test and/or criminal background check.
- Completion of an application for the Ford ASSET Program (can be found at http://www.crc.losrios.edu/cars).

Enrollment Process

Eligible students are selected for the program according to the following steps:

- Students are selected from the applicant pool in the order in which they are received.
- Only students who meet the stated eligibility requirements will be considered for the program.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- SLO 1: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- SLO 2: Understand typical new car dealership hierarchy, structure, and standard procedures.
- SLO 3: Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- SLO 4: Understand the fundamental purpose, components, and operation of automotive heating and air conditioning systems.
- SLO 5: Demonstrate the ability to diagnose and repair automotive heating, ventilation, and air conditioning (HVAC) system concerns.
- SLO 6: Verify the outcome of the repair through a test drive analysis or system self-test.
Career Information

- Automotive Maintenance / Light Repair Technician
- Automotive HVAC Technician
- Ford/Lincoln Specialized Technician (in Service Technician Specialty Training [STST] area 35-Climate Control)

Automotive Heating and Air Conditioning Certificate

This curriculum is designed for students interested in seeking employment in the automotive heating and air conditioning repair/installation field.

Catalog Date: January 1, 2022

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 300</td>
<td>Automotive Fundamentals and Shop Procedures</td>
<td>4</td>
</tr>
<tr>
<td>AMT 303</td>
<td>Automotive Electrical &amp; Electronic Systems</td>
<td>4</td>
</tr>
<tr>
<td>AMT 310</td>
<td>Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>AMT 326</td>
<td>Automotive Heating and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>AMT 332</td>
<td>Automotive Computerized Controls</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Units:</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Student Learning Outcomes

Upon completion of this program, the student will be able to:
- Describe the fundamentals of diagnosing automotive systems.
- Explain the proper use of service publications used in diagnostic procedures.
- Recognize electronic principles and how they relate to particular automotive systems.
- Perform the necessary repair procedure for a certain set electrical/electronic diagnostic problems.
- Understand the basic operation of automotive air conditioning (A/C) and engine cooling systems.
- Repair automotive air conditioning (A/C) and cooling systems.

Automotive Mechanics Technology (Ford ASSET) Certificate

The Ford Automotive Student Service Education Training (ASSET) Program is a two-year program in Automotive Mechanics Technology. This program is designed to help students develop the skills necessary to efficiently and accurately maintain, diagnose, and service/repair all major systems of the automobile.

The Ford ASSET Program is a partnership between Cosumnes River College (CRC) and Ford Motor Company. Ford ASSET is the only program that includes an in dealership cooperative work experience component. Students will rotate between school and the dealership for the duration of the two-year program, giving them invaluable hands-on experience while they learn.

Courses within the Ford ASSET program allow students to earn Service Technician Specialty Training (STST) certifications from Ford Motor Company in the following areas:
- Electrical Systems
- Brake Systems
- Steering & Suspension
- Climate Control
- Automatic Transmissions
- Gasoline Engine Repair
- Gasoline Engine Performance
- Diesel Engine Repair
- Diesel Engine Performance
- Manual Transmissions

Instructors for this program are Ford STST certified as required by Ford Motor Company standards.

Completion of this certificate also represents completion of a National Automotive Technicians Education Foundation (NATEF) accredited Master Automotive Service Technology (MAST) program. Instructors for this program are Automotive Service Excellence (ASE) certified as required by NATEF standards.

Upon successful completion of this program, students are well qualified for placement as service technicians in Ford and/or Lincoln dealerships. Students may apply units earned by the successful completion of this program to one or more of the specialized certificates as well as the Associate’s degree.

Catalog Date: January 1, 2022

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
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<tbody>
<tr>
<td>AMT 370</td>
<td>Ford ASSET Automotive Fundamentals and Dealership Practices</td>
<td>4</td>
</tr>
<tr>
<td>AMT 371</td>
<td>Ford ASSET Automotive Electrical/Electronic Systems</td>
<td>3</td>
</tr>
<tr>
<td>AMT 372</td>
<td>Ford ASSET Automotive Brake Systems</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>A minimum of 3 units from the following:</strong></td>
<td><strong>3</strong></td>
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<tr>
<td>AMT 498</td>
<td>Work Experience in Automotive Mechanics Technology (0.5 - 4)</td>
<td>3</td>
</tr>
<tr>
<td>AMT 374</td>
<td>Ford ASSET Automotive Suspension and Steering</td>
<td>3</td>
</tr>
<tr>
<td>AMT 375</td>
<td>Ford ASSET Automotive Wheel Alignment</td>
<td>3</td>
</tr>
<tr>
<td>COURSE CODE</td>
<td>COURSE TITLE</td>
<td>UNITS</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>AMT 376</td>
<td>Ford ASSET Automotive Heating and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>AMT 377</td>
<td>Ford ASSET Manual Drive Train and Axles</td>
<td>1.5</td>
</tr>
<tr>
<td>AMT 378</td>
<td>Ford ASSET Automatic Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>AMT 379</td>
<td>Ford ASSET Automotive Manual Drive Train and Axles</td>
<td>1.5</td>
</tr>
<tr>
<td>AMT 380</td>
<td>Ford ASSET Electronic Engine Control</td>
<td>4</td>
</tr>
<tr>
<td>AMT 381</td>
<td>Ford ASSET Gasoline Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>AMT 382</td>
<td>Ford ASSET Advanced Gasoline Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>AMT 383</td>
<td>Ford ASSET Advanced Gasoline Engine Performance</td>
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A minimum of 3 units from the following:

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<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 498</td>
<td>Work Experience in Automotive Mechanics Technology (0.5 - 4)</td>
<td>3</td>
</tr>
<tr>
<td>AMT 131</td>
<td>Ford ASSET Diesel Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>AMT 340</td>
<td>Emission Control Inspection and Repair</td>
<td>5</td>
</tr>
<tr>
<td>WELD 160</td>
<td>Welding Technology for the Automotive Industry</td>
<td>1.5</td>
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A minimum of 3 units from the following:

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 498</td>
<td>Work Experience in Automotive Mechanics Technology (0.5 - 4)</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Units: **59.5**

**Enrollment Eligibility**

To be eligible for enrollment in the program, the student must meet the following criteria:

- Eligibility for ENGWR 101.
- Eligibility for MATH 100.
- Possess a valid driver's license with a driving record that is suitable for the sponsoring dealership's insurance requirements.
- Able to operate a vehicle equipped with a manual transmission.
- Meet sponsoring dealership hiring requirements which may include submitting to a drug test and/or criminal background check.
- Completion of an application for the Ford ASSET Program (can be found at [http://www.crc.losrios.edu/cars](http://www.crc.losrios.edu/cars)).

**Enrollment Process**

Eligible students are selected for the program according to the following steps:

- Students are selected from the applicant pool in the order in which they are received.
- Only students who meet the stated eligibility requirements will be considered for the program.

**Student Learning Outcomes**

Upon completion of this program, the student will be able to:

- PSLO 1: Understand the fundamental purpose, components, and operation of major automotive systems to include gasoline engines, automatic transmissions and transaxles, manual transmissions, drivetrains, and axles, suspension and steering systems, brake systems, electrical and electronic systems, heating and air conditioning systems, and engine performance systems.
- PSLO 2: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- Understand typical new car dealership hierarchy, structure, and standard procedures.
- Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- PSLO 3: Diagnose engine mechanical concerns, conduct diagnostic testing procedures, and perform the procedures and techniques involved in typical engine repairs and overhauls.
- PSLO 4: Demonstrate the ability to diagnose, service, and repair automatic transmissions and transaxles.
- PSLO 5: Demonstrate the ability to diagnose and repair manual transmissions, transaxles, and drive train concerns.
- PSLO 6: Demonstrate the ability to diagnose and repair automotive suspension and steering concerns.
- PSLO 7: Demonstrate the ability to diagnose and repair automotive brake systems.
- PSLO 8: Demonstrate the ability to diagnose and repair automotive electrical and electronic concerns.
- PSLO 9: Demonstrate the ability to diagnose and repair automotive heating, ventilation, and air conditioning (HVAC) system concerns.
- PSLO 10: Demonstrate the ability to diagnose, service, and repair gasoline engine performance systems and their components.
- Verify the outcome of the repair through a test drive analysis or system self-test.

**Career Information**

- Automotive Technician
- Light Duty Diesel Technician
- Ford/Lincoln Specialized Technician (in any of the Service Technician Specialty Training [STST] areas)
- Ford/Lincoln Engine Master Technician
- Ford/Lincoln Chassis Master Technician
- Ford/Lincoln Drivetrain Master Technician
- Ford/Lincoln Senior Master Technician

Students who successfully complete the program will:

- Earn a certificate in Automotive Mechanics Technology.
- Be granted Ford Service Technician Specialty Training (STST) credentials.
- Be prepared for Automotive Service Excellence (ASE) certification in all Automobile series areas.
- Be eligible to sit for testing for both the California SMOG Inspector and SMOG Repair licenses.

**Automotive Mechanics Technology Certificate**
This one-year curriculum is designed for students who are seeking basic job entry skills for employment in the automotive field. Subsequent certificates and/or an Associate degree in Automotive Mechanics Technology can be earned without the need to repeat courses completed as part of this certificate. Completion of this certificate also represents completion of a National Automotive Technicians Education Foundation (NATEF) accredited Master Automotive Service Technology (MAST) program. Instructors for this program are Automotive Service Excellence (ASE) certified as required by NATEF standards.

Catalog Date: January 1, 2022

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 300</td>
<td>Automotive Fundamentals and Shop Procedures</td>
<td>4</td>
</tr>
<tr>
<td>AMT 303</td>
<td>Automotive Electrical &amp; Electronic Systems</td>
<td>4</td>
</tr>
<tr>
<td>AMT 304</td>
<td>Automotive Manual Drive Train and Axles</td>
<td>3</td>
</tr>
<tr>
<td>AMT 310</td>
<td>Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>AMT 314</td>
<td>Wheel Alignment</td>
<td>3</td>
</tr>
<tr>
<td>AMT 316</td>
<td>Automotive Brakes</td>
<td>3</td>
</tr>
<tr>
<td>AMT 322</td>
<td>Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>AMT 324</td>
<td>Electronic Fuel Injection</td>
<td>3</td>
</tr>
<tr>
<td>AMT 326</td>
<td>Automotive Heating and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>AMT 330</td>
<td>Automatic Transmissions/Transaxles</td>
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</tr>
<tr>
<td>AMT 332</td>
<td>Automotive Computerized Controls</td>
<td>3</td>
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A minimum of 5 units from the following:

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<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>AMT 301</td>
<td>Automotive Service Management</td>
<td>3</td>
</tr>
<tr>
<td>AMT 306</td>
<td>Small Engine Repair</td>
<td>3</td>
</tr>
<tr>
<td>AMT 308</td>
<td>Late Model Car Care and Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>AMT 498</td>
<td>Work Experience in Automotive Mechanics Technology</td>
<td>0.5 - 4</td>
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A minimum of 3 units from the following:

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 321</td>
<td>Advanced Automotive Electrical &amp; Hybrid Vehicle Systems</td>
<td>3</td>
</tr>
<tr>
<td>AMT 328</td>
<td>Light Duty Diesel Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>AMT 340</td>
<td>Emission Control Inspection and Repair</td>
<td>5</td>
</tr>
</tbody>
</table>

Total Units: 43

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- PSLO 1: Understand the fundamental purpose, components, and operation of major automotive systems to include gasoline engines, automatic transmissions and transaxles, manual transmissions, drive trains, and axles, suspension and steering systems, brake systems, electrical and electronic systems, heating and air conditioning systems, and engine performance systems.
- PSLO 2: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- Understand typical automotive shop hierarchy, structure, and standard procedures.
- Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- PSLO 3: Diagnose engine mechanical concerns, conduct diagnostic testing procedures, and perform the procedures and techniques involved in typical engine repairs and overhauls.
- PSLO 4: Demonstrate the ability to diagnose, service, and repair automatic transmissions and transaxles.
- PSLO 5: Demonstrate the ability to diagnose and repair manual transmissions, transaxles, and drive train concerns.
- PSLO 6: Demonstrate the ability to diagnose and repair automotive suspension and steering concerns.
- PSLO 7: Demonstrate the ability to diagnose and repair automotive brake systems.
- PSLO 8: Demonstrate the ability to diagnose and repair automotive electrical and electronic concerns.
- PSLO 9: Demonstrate the ability to diagnose and repair automotive heating, ventilation, and air conditioning (HVAC) system concerns.
- PSLO 10: Demonstrate the ability to diagnose, service, and repair gasoline engine performance systems and their components.
- Verify the outcome of the repair through a test drive analysis or system self-test.

Career Information

Auto Technician; Auto/Truck Specialist; Automotive Microcomputer Programmer & Operator; Field Service/Sales Representative; Inventory Controls Manager; Tune-up & Electrical Specialist. ASE certified in the areas of Brakes, Electrical/Electronic Systems, Engine Performance, Suspension and Steering, Automatic Transmission/Transaxle, Engine Repair, Heating and Air Conditioning, and Manual Drive Train and Axles.

Automotive Suspension and Steering (Ford ASSET) Certificate

This certificate represents a subset of the Ford Automotive Student Service Education Training (ASSET) Program and is intended for students wishing to specialize in automotive suspension and steering systems. This certificate is designed to help students develop the skills necessary to efficiently and accurately maintain, diagnose, and service/repair automotive suspension and steering systems.

Catalog Date: January 1, 2022

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
</table>
Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Eligibility for ENGWR 101.
- Eligibility for MATH 100.
- Possess a valid driver's license with a driving record that is suitable for the sponsoring dealership's insurance requirements.
- Able to operate a vehicle equipped with a manual transmission.
- Meet sponsoring dealership hiring requirements which may include submitting to a drug test and/or criminal background check.
- Completion of an application for the Ford ASSET Program (can be found at http://www.crc.losrios.edu/cars).

Enrollment Process

Eligible students are selected for the program according to the following steps:

- Students are selected from the applicant pool in the order in which they are received.
- Only students who meet the stated eligibility requirements will be considered for the program.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- SLO 1: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- Understand typical new car dealership hierarchy, structure, and standard procedures.
- Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- SLO 2: Understand the fundamental purpose, components, and operation of automotive suspension and steering systems.
- SLO 3: Demonstrate the ability to diagnose and repair automotive suspension and steering systems.
- Verify the outcome of the repair through a test drive analysis or system self-test.

Career Information

- Automotive Maintenance / Light Repair Technician • Ford/Lincoln Specialized Technician (in Service Technician Specialty Training [STST] area 33-Steering and Suspension)

Automotive Suspension and Steering Certificate

This curriculum is designed for students interested in seeking employment in the automotive suspension, steering, or wheel alignment fields.

Catalog Date: January 1, 2022

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 300</td>
<td>Automotive Fundamentals and Shop Procedures</td>
<td>4</td>
</tr>
<tr>
<td>AMT 303</td>
<td>Automotive Electrical &amp; Electronic Systems</td>
<td>4</td>
</tr>
<tr>
<td>AMT 310</td>
<td>Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>AMT 314</td>
<td>Wheel Alignment</td>
<td>3</td>
</tr>
<tr>
<td>AMT 332</td>
<td>Automotive Computerized Controls</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Units: 17

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- Explain the proper use of service publications used in diagnostic procedures.
- Recognize electronic principles and how they relate to particular automotive systems.
- Diagnose vehicle alignment angle concerns.
- Explain theory and operations of automotive computerized controls.
Manual Drive Train and Axles (Ford ASSET) Certificate

This certificate represents a subset of the Ford Automotive Student Service Education Training (ASSET) Program and is intended for students wishing to specialize in manual transmissions/transaxles, drive trains, and axles. This certificate is designed to help students develop the skills necessary to efficiently and accurately maintain, diagnose, and service/repair manual transmissions/transaxles, drive trains, and axles.

Catalog Date: January 1, 2022

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>AMT 370</td>
<td>Ford ASSET Automotive Fundamentals and Dealership Practices</td>
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<tr>
<td>AMT 378</td>
<td>Ford ASSET Automatic Transmissions/Transaxles</td>
<td>3</td>
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<tr>
<td>AMT 385</td>
<td>Ford ASSET Automotive Manual Drive Train and Axles</td>
<td>1.5</td>
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</table>

A minimum of 3 units from the following:

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>AMT 498</td>
<td>Work Experience in Automotive Mechanics Technology (0.5 - 4)</td>
<td>3</td>
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</tbody>
</table>

Total Units: 11.5

Enrollment Eligibility

To be eligible for enrollment in the program, the student must meet the following criteria:

- Eligibility for ENGWR 101.
- Eligibility for MATH 100.
- Possess a valid driver’s license with a driving record that is suitable for the sponsoring dealership’s insurance requirements.
- Able to operate a vehicle equipped with a manual transmission.
- Meet sponsoring dealership hiring requirements which may include submitting to a drug test and/or criminal background check.
- Completion of an application for the Ford ASSET Program (can be found at http://www.crc.losrios.edu/cars).

Enrollment Process

Eligible students are selected for the program according to the following steps:

- Students are selected from the applicant pool in the order in which they are received.
- Only students who meet the stated eligibility requirements will be considered for the program.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- SLO 1: Understand the proper use of tools, equipment, and publications used for automotive diagnosis and repair.
- Understand typical new car dealership hierarchy, structure, and standard procedures.
- Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause, and correction.
- SLO 2: Understand the fundamental purpose, components, and operation of manual transmissions/transaxles, drive trains, and axles.
- SLO 3: Demonstrate the ability to diagnose and repair manual transmissions, transaxles, and drive train concerns.
- Verify the outcome of the repair through a test drive analysis or system self-test.

Career Information

- Automotive Technician (Clutch Specialist) • Manual Transmission Technician • Ford/Lincoln Specialized Technician (in Service Technician Specialty Training [STST] area 36-Manual Transmissions)

Small Engine Repair Certificate

This curriculum is designed for students who are interested in obtaining skills necessary for the repair of small engines used in industry, home maintenance, landscape maintenance and recreation.

Catalog Date: January 1, 2022

Certificate Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>UNITS</th>
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</thead>
<tbody>
<tr>
<td>AMT 303</td>
<td>Automotive Electrical &amp; Electronic Systems</td>
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<tr>
<td>AMT 306</td>
<td>Small Engine Repair</td>
<td>3</td>
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<tr>
<td>AMT 310</td>
<td>Engine Performance</td>
<td>3</td>
</tr>
<tr>
<td>AMT 324</td>
<td>Electronic Fuel Injection</td>
<td>3</td>
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</table>
Automotive Mechanics Technology (AMT) Courses

AMT 101 Bureau of Automotive Repair (BAR) Emissions Update

- **Units:** 1
- **Hours:** 18 hours LEC
- **Prerequisite:** None
- **Advisory:** Individuals taking this course should have a current or expired California Smog Check Inspection and/or Repair License.
- **Catalog Date:** January 1, 2022

This Bureau of Automotive Repair (BAR) Emissions Update Course is an 18 hour course which meets the mandatory bi-annual educational update requirement for license renewal of Emission Repair technicians in the State of California. Technicians may take this course up to two years prior to license expiration.

This course may be taken more than once for credit in order to meet mandatory bi-annual educational update requirements for license renewal of Emission Repair technicians in the State of California.

AMT 130 Ford ASSET Advanced Automatic Transmission Diagnosis

- **Units:** 1.5
- **Hours:** 27 hours LEC
- **Prerequisite:** None
- **Enrollment Limitation:** Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.
- **Catalog Date:** January 1, 2022

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course provides a review of electronically controlled automatic transmissions and transaxes to include electronic control system theory, hydraulic/mechanical system theory, electronic testing procedures, hydraulic testing procedures, mechanical testing procedures, module programming and configuration, and adaptive shift strategies. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

AMT 131 Ford ASSET Diesel Engine Performance

- **Units:** 3
- **Hours:** 36 hours LEC; 54 hours LAB
- **Prerequisite:** AMT 371 with a grade of "C" or better
- **Enrollment Limitation:** Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.
- **Catalog Date:** January 1, 2022

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course provides a review of light duty diesel engine performance systems to include diesel engine theory, air induction systems, fuel systems, starting aid systems, emission controls, and exhaust after-treatment systems. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

AMT 133 Ford ASSET Practicum One

- **Units:** 0.5 - 4
- **Hours:** 27 - 216 hours LAB
- **Prerequisite:** None
- **Corequisite:** AMT 371 and 372
- **Enrollment Limitation:** Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.
- **Catalog Date:** January 1, 2022

This course consists of supervised experience in an automotive repair service setting performing the tasks and responsibilities of an automotive service technician. Those duties include, but are not limited to, diagnosis and repair of electrical/electronic systems, and diagnosis and repair of automotive brake systems. This course is for students who are currently enrolled in the Ford ASSET program and have completed or are currently enrolled in AMT 371: Ford ASSET Automotive Electrical/Electronic Systems and AMT 372: Ford ASSET Automotive Brake Systems.
AMT 294 Topic in Automotive Mechanics Technology

Units: 0.5 - 4
Hours: 9 - 72 hours LEC
Prerequisite: None.
Catalog Date: January 1, 2022

This course covers special topics not included in current automotive offerings in a timely manner. Topics may be offered in workshops or seminar presentations on timely subjects or targeted for specific audiences.

AMT 295 Independent Studies in Automotive Mechanics Technology

Units: 1 - 3
Hours: 54 - 162 hours LAB
Prerequisite: None.
Catalog Date: January 1, 2022

An independent studies project involves an individual student or small group of students in study, research, or activities beyond the scope of regularly offered courses. See the current catalog section of “Special Studies” for full details of Independent Studies.

AMT 299 Experimental Offering in Automotive Mechanics Technology

Units: 0.5 - 4
Prerequisite: None.
Catalog Date: January 1, 2022

This is the experimental courses description.

AMT 300 Automotive Fundamentals and Shop Procedures

Units: 4
Hours: 72 hours LEC
Prerequisite: None.
Transferable: CSU
General Education: AA/AS Area III(b)
Catalog Date: January 1, 2022

This course includes a basic study of vehicles and their mechanical systems including vehicle purchase, vehicle maintenance, vehicle safety systems and the principles and operation of the automotive engine, engine support systems, the drive train, steering, suspension and brakes. This class also explores consumers legal rights concerning vehicle purchase, repair, replacement and recalls. Hand tools, shop equipment and shop procedures will be demonstrated to familiarize the students with the automotive industry.

AMT 301 Automotive Service Management

Units: 3
Hours: 54 hours LEC
Prerequisite: None.
Transferable: CSU
Catalog Date: January 1, 2022

This course provides a survey of automotive service operations, management strategies, economic importance, regulatory responsibilities, customer relations, and employment opportunities in the automotive service industry.

AMT 303 Automotive Electrical & Electronic Systems

Units: 4
Hours: 45 hours LEC; 81 hours LAB
Prerequisite: None.
Advisory: AMT 300
Transferable: CSU
Catalog Date: January 1, 2022

This course is a study of the fundamental principles of electricity as used by the auto technician. Construction and function of automotive electrical/ electronic components and systems will be discussed, including storage batteries, charging and starting systems, lighting, and accessory systems.

AMT 304 Automotive Manual Drive Train and Axles

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: None.
Advisory: AMT 300
Transferable: CSU
Catalog Date: January 1, 2022

This course covers the principles of operations of automotive power trains, including diagnosis and overhaul techniques of clutches, manual transmission/transaxles, transfer cases, drive lines and differentials.
AMT 306 Small Engine Repair

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: None.
Advisory: AMT 300
Transferable: CSU
Catalog Date: January 1, 2022

This course focuses on operation and repair of small four-cycle engines. Special emphasis is placed on design and operation principles of internal combustion engines that support the student's understanding of automotive engines.

AMT 308 Late Model Car Care and Maintenance

Units: 3
Hours: 54 hours LEC
Prerequisite: None.
Advisory: AMT 300
Transferable: CSU
Catalog Date: January 1, 2022

This course is designed for the service technician and late model car owner wishing to perform or schedule car maintenance. This course will provide both men and women with basic automotive repair procedures and a fundamental understanding of how various automotive components and systems work. Use of the owner's manual, repair orders and other resources will be emphasized along with the development of a preventative maintenance schedule.

AMT 310 Engine Performance

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: AMT 300, 306, or 322 with a grade of "C" or better
Advisory: AMT 303
Transferable: CSU
Catalog Date: January 1, 2022

This course covers basic principles of the internal combustion engine and its related components, with an emphasis on complete electrical and fuel systems. The course will include the use of advanced types of testing equipment.

AMT 314 Wheel Alignment

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: None.
Advisory: AMT 300
Transferable: CSU
Catalog Date: January 1, 2022

This course offers an in-depth examination of alignment equipment and different vehicle manufacturer’s alignment systems. It will cover diagnosis and repair of Wheel/Tire Systems, Steering Systems, Suspension Systems, and Wheel Alignment.

AMT 316 Automotive Brakes

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: None.
Advisory: AMT 300
Transferable: CSU
Catalog Date: January 1, 2022

This course covers the principles of operation of automotive brakes and anti-lock brake systems, including diagnosis and overhaul techniques of power brake system components.

AMT 321 Advanced Automotive Electrical & Hybrid Vehicle Systems

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: AMT 303 with a grade of "C" or better
Transferable: CSU
Catalog Date: January 1, 2022

This course is a study of the principles of electronic systems serviced by the automotive technician. Construction and function of automotive electronic components and systems will be discussed, including general system diagnosis, driver information systems, vehicle communication networks, hybrid vehicle propulsion technology and controls, and electronic accessory systems.

AMT 322 Engine Repair

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: None.
Advisory: AMT 300 and 306
This course focuses on the theory of operation and repair of the automotive internal combustion engine. Major emphasis will be on diagnosis, measurement, repair and assembly of the automotive engine.

**AMT 324 Electronic Fuel Injection**

| Units: | 3 |
| Hours: | 36 hours LEC; 54 hours LAB |
| Prerequisite: | AMT 303 with a grade of “C” or better |
| Advisory: | AMT 310 |
| Transferable: | CSU |
| Catalog Date: | January 1, 2022 |

This course focuses on the theory and operation, service, diagnostic procedures, and repair of electronic fuel injection systems. This course includes the various types of electronic fuel injection systems and the diagnostic equipment currently used in the automotive industry. In addition, also covered in this course are the theory and operation, and service of intake and exhaust systems, and forced induction systems such as superchargers and turbochargers.

**AMT 326 Automotive Heating and Air Conditioning**

| Units: | 3 |
| Hours: | 36 hours LEC; 54 hours LAB |
| Prerequisite: | AMT 303 with a grade of “C” or better |
| Advisory: | CSU |
| Catalog Date: | January 1, 2022 |

This course is a study of installation, operation and repair of vehicle air conditioning systems, cooling systems, and heating systems. The course will include a study of the systems for proper functioning of systems including heat transfer and air flow.

**AMT 328 Light Duty Diesel Engine Performance**

| Units: | 3 |
| Hours: | 36 hours LEC; 54 hours LAB |
| Prerequisite: | AMT 303 with a grade of “C” or better |
| Advisory: | AMT 300 |
| Transferable: | CSU |
| Catalog Date: | January 1, 2022 |

This course introduces the student to light duty diesel engine performance systems to include diesel engine theory, air induction systems, fuel systems, starting aid systems, emission controls, and exhaust after-treatment systems.

**AMT 330 Automatic Transmissions/Transaxles**

| Units: | 3 |
| Hours: | 36 hours LEC; 54 hours LAB |
| Prerequisite: | None. |
| Advisory: | AMT 300 and 304 |
| Transferable: | CSU |
| Catalog Date: | January 1, 2022 |

This course is a study of the fundamentals and theory of automatic transmissions/transaxles. The laboratory experience will include inspection, diagnosis and adjustments.

**AMT 332 Automotive Computerized Controls**

| Units: | 3 |
| Hours: | 36 hours LEC; 54 hours LAB |
| Prerequisite: | AMT 303 with a grade of “C” or better |
| Advisory: | AMT 310 |
| Transferable: | CSU |
| Catalog Date: | January 1, 2022 |

This course focuses on the study of automotive computerized controls and their application to the engine, chassis and braking systems. Students will learn how on board computers interact with modern vehicle systems.

**AMT 340 Emission Control Inspection and Repair**

| Units: | 5 |
| Hours: | 72 hours LEC; 54 hours LAB |
| Prerequisite: | AMT 303 and 310 with grades of “C” or better; AMT 371 and AMT 381 are included in the Ford ASSET Program and can be utilized to meet requisite requirements in lieu of the standard requisites. Current ASE certification in A-6 and A-8 meet equivalency for enrollment in AMT 340 per State of California, Bureau of Automotive Repair Statute. |
| Advisory: | AMT 324 and 332 |
| Transferable: | CSU |
| Catalog Date: | January 1, 2022 |

This course includes inspection, testing, diagnosis, and service of automotive emission control systems. The course is required for all students who plan to become licensed as a Smog Check Inspector. The course meets BAR Level 1 & 2 training requirements. Upon successful completion of this course, students are eligible to take the State of California Smog Check Inspector licensing exam and may be eligible to take the State of California Smog Check Repair Technician licensing exam.
AMT 370 Ford ASSET Automotive Fundamentals and Dealership Practices

Units: 4
Hours: 72 hours LEC
Prerequisite: None.
Enrollment Limitation: Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program. Some training materials utilized in this course require access to restricted Ford Motor Company websites obtained via enrollment in the Ford Automotive Student Service Education Training (ASSET) program and establishment of a Ford/Lincoln dealership sponsorship.
Transferable: CSU
Catalog Date: January 1, 2022

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course provides an introduction into the theory and operation of major automotive systems including: gasoline engines, electrical systems, transmissions and drivetrains, steering, suspension, and brakes. Common automotive hand tools, power tools, and equipment will also be introduced and demonstrated to familiarize students with a typical automotive shop. Typical new-car dealership hierarchy and structure along with standard practices will be investigated. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

AMT 371 Ford ASSET Automotive Electrical/Electronic Systems

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: None.
Enrollment Limitation: Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.
Transferable: CSU
Catalog Date: January 1, 2022

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course is a study of the fundamental principles of electricity and electronic systems as used by the automotive technician. Construction and function of automotive electrical and electronic components will be discussed, including batteries, starting systems, charging systems, lighting systems, and power accessories. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

AMT 372 Ford ASSET Automotive Brake Systems

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: None.
Enrollment Limitation: Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.
Transferable: CSU
Catalog Date: January 1, 2022

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course covers the theory, diagnosis, and repair of automotive brake systems, including anti-lock braking systems (ABS). Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

AMT 374 Ford ASSET Automotive Suspension and Steering

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: AMT 371 with a grade of "C" or better
Enrollment Limitation: Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.
Transferable: CSU
Catalog Date: January 1, 2022

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course covers theory, diagnosis, and repair of automotive steering and suspension systems. Wheels, tires, and related systems will also be discussed, including power steering systems and electronically controlled steering and suspension systems. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

AMT 375 Ford ASSET Automotive Wheel Alignment

Units: 3
Hours: 36 hours LEC; 54 hours LAB
Prerequisite: AMT 371 with a grade of "C" or better
Corequisite: AMT 374
Enrollment Limitation: Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.
Transferable: CSU
Catalog Date: January 1, 2022

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course covers various automotive wheel alignment equipment and procedures. Wheel alignment diagnosis and repair will be performed as well as maintenance and repair of related systems. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

AMT 376 Ford ASSET Automotive Heating and Air Conditioning
This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course covers the theory, diagnosis, and repair of automotive heating and air conditioning systems, including air management sub-systems and an overview of engine cooling systems. Proper handling of common automotive refrigerants in accordance with EPA regulations will also be covered. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

**AMT 378 Ford ASSET Automatic Transmissions/Transaxles**

<table>
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<tr>
<th align="right">Units:</th>
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<tbody>
<tr>
<td align="right">Hours:</td>
<td>36 hours LEC; 54 hours LAB</td>
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<tr>
<td align="right">Prerequisite:</td>
<td>AMT 371 with a grade of “C” or better</td>
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<tr>
<td align="right">Enrollment Limitation:</td>
<td>Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.</td>
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<td align="right">Transferable:</td>
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<td align="right">Catalog Date:</td>
<td>January 1, 2022</td>
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</tbody>
</table>

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course covers the theory, diagnosis, and repair of automatic transmissions and transaxles. Proper maintenance and service will also be covered. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

**AMT 379 Ford ASSET Automotive Engine Repair**

<table>
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<tr>
<th align="right">Units:</th>
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</thead>
<tbody>
<tr>
<td align="right">Hours:</td>
<td>36 hours LEC; 54 hours LAB</td>
</tr>
<tr>
<td align="right">Prerequisite:</td>
<td>AMT 371 with a grade of “C” or better</td>
</tr>
<tr>
<td align="right">Enrollment Limitation:</td>
<td>Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.</td>
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<tr>
<td align="right">Transferable:</td>
<td>CSU</td>
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<tr>
<td align="right">Catalog Date:</td>
<td>January 1, 2022</td>
</tr>
</tbody>
</table>

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course covers the theory, diagnosis, and repair of automotive engines. Proper maintenance and service will also be covered. Complete engine overhaul procedures will be examined, but the primary focus will be on typical engine repairs. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

**AMT 381 Ford ASSET Electronic Engine Control**

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<td align="right">Hours:</td>
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<tr>
<td align="right">Prerequisite:</td>
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<tr>
<td align="right">Enrollment Limitation:</td>
<td>Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.</td>
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<td>CSU</td>
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This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course is a study of Ford Electronic Engine Control systems, their components, and their relationship to other vehicle systems. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

**AMT 382 Ford ASSET Gasoline Engine Performance**

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<th align="right">Units:</th>
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<tbody>
<tr>
<td align="right">Hours:</td>
<td>36 hours LEC; 54 hours LAB</td>
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<tr>
<td align="right">Prerequisite:</td>
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<tr>
<td align="right">Enrollment Limitation:</td>
<td>Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.</td>
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<td>CSU</td>
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</tbody>
</table>

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course offers a thorough examination of basic gasoline engine performance systems to include ignition systems, fuel systems, and emission controls. System maintenance, diagnosis, and repair will also be covered, including the use of specialized test equipment. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

**AMT 383 Ford ASSET Advanced Gasoline Engine Performance**

<table>
<thead>
<tr>
<th align="right">Units:</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td align="right">Hours:</td>
<td>36 hours LEC; 54 hours LAB</td>
</tr>
<tr>
<td align="right">Prerequisite:</td>
<td>AMT 371 with a grade of “C” or better</td>
</tr>
<tr>
<td align="right">Enrollment Limitation:</td>
<td>Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.</td>
</tr>
<tr>
<td align="right">Transferable:</td>
<td>CSU</td>
</tr>
<tr>
<td align="right">Catalog Date:</td>
<td>January 1, 2022</td>
</tr>
</tbody>
</table>

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course offers an advanced analysis of gasoline engine performance systems to include ignition systems, fuel systems, and emission controls. New technologies and advances in these systems will be highlighted. This course places emphasis on advanced diagnostic techniques, use of specialized test equipment, and diagnostic strategies to be utilized when standard manufacturer’s procedures are unable to properly diagnose or
AMT 385 Ford ASSET Automotive Manual Drive Train and Axles

Units: 1.5
Hours: 18 hours LEC; 27 hours LAB
Prerequisite: AMT 371 with a grade of "C" or better
Enrollment Limitation: Students taking this course must be enrolled in the Ford Automotive Student Service Education Training (ASSET) program due to prerequisite Ford Motor Company training requirements.
Transferable: CSU
Catalog Date: January 1, 2022

This course is offered to students enrolled in the Ford Automotive Student Service Education Training (ASSET) program. This course covers the theory, diagnosis, and repair of clutches, manual transmissions and transaxles, transfer cases, drive lines, and differentials. Proper maintenance and service will also be covered. Students who successfully complete this course may be eligible for Ford Service Technician Specialty Training (STST) certification.

AMT 495 Independent Studies in Automotive Mechanics Technology

Units: 1 - 3
Hours: 54 - 162 hours LAB
Prerequisite: None.
Transferable: CSU
Catalog Date: January 1, 2022

An independent studies project involves an individual student or small group of students in study, research, or activities beyond the scope of regularly offered courses. See the current catalog section of "Special Studies" for full details of Independent Studies.

AMT 498 Work Experience in Automotive Mechanics Technology

Units: 0.5 - 4
Hours: 30 - 300 hours LAB
Prerequisite: None.
Enrollment Limitation: Students must be in a paid or unpaid internship, volunteer position or job related to career goals in Automotive Mechanics Technology.
Transferable: CSU
General Education: AA/AS Area III(b)
Catalog Date: January 1, 2022

This course provides students with opportunities to develop marketable skills in preparation for employment in their major field of study or advancement within their career. It is designed for students interested in work experience and/or internships in transfer level degree occupational programs. Course content includes understanding the application of education to the workforce; completion of required forms which document the student's progress and hours spent at the work site; and developing workplace skills and competencies. Appropriate level learning objectives are established by the student and the employer. During the semester, the student is required to participate in a weekly orientation and 37.5 hours of related paid work experience, or 30 hours of unpaid work experience for 0.5 unit. An additional 37.5 or 30 hours of related work experience is required for each additional 0.5 units. Students may take up to 16 units total across all Work Experience course offerings. This course may be taken up to four times when there are new or expanded learning objectives. Only one Work Experience course may be taken per semester.

AMT 499 Experimental Offering In Automotive Mechanics Technology

Units: 0.5 - 4
Prerequisite: None.
Transferable: CSU
Catalog Date: January 1, 2022

This is the experimental courses description.