

Automotive Service Management Technologies (ASM & ASTC)

Automotive Service Management (ASM)

The Automotive Service Technician Certificate at Cincinnati State prepares students for entry-level jobs in the technical areas of the automotive service field. Hands-on diagnosis and repair of "live" vehicles enhance students' diagnostic skills and build a solid foundation for a successful and rewarding career.

Graduates of the certificate program are prepared to take certification exams offered by the National Institute for Automotive Service Excellence (ASE).

For more information, please contact the Business Technologies Division at (513) 569-1620.

To apply for this program at Cincinnati State, visit the Admissions (<http://www.cincinnati.edu/academics/admission/>) section of the College website.

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Automotive Service Management (ASM)

| Semester 1 | | Lec | Lab | Credits |
|------------|---|-----|-----|---------|
| AUTO 100 | Introduction to Automotive Technology (B) | 2 | 3 | 3 |
| IM 111 | Computer Applications (B) | 2 | 3 | 3 |
| AUTO 111 | Engine Repair (T) | 2 | 3 | 3 |
| AUTO 161 | Electrical/Electronic Systems 1 (T) | 2 | 3 | 3 |
| ENG 101 | English Composition 1 (G) | 3 | 0 | 3 |
| FYE 1XX | First Year Experience Elective (B) | 1 | 0 | 1 |

| | | | | |
|-------------------|--|-----------|------------|-----------|
| Semester 2 | | | | |
| AUTO 150 | Brakes (T) | 2 | 3 | 3 |
| AUTO 162 | Electrical/Electronic Systems 2 (T) | 2 | 3 | 3 |
| AUTO 181 | Engine Performance 1 (T) | 2 | 3 | 3 |
| ENG 10X | English Composition Elective (G) | 3 | 0 | 3 |
| BUS 190 | Professional Practices (B) | 1 | 0 | 1 |
| MAT 1XX | Mathematics Elective (G) | 3 | 0 | 3 |
| Semester 3 | | | | |
| AUTO X9X | Cooperative Education Elective 1: Automotive (T) | 1 | 40 | 2 |
| Semester 4 | | | | |
| LAW 101 | Business Law (B) | 3 | 0 | 3 |
| AUTO 140 | Suspension and Steering (T) | 2 | 3 | 3 |
| AUTO 175 | Powertrain Systems and Service (T) | 2 | 3 | 3 |
| MGT 101 | Principles of Management (B) | 3 | 0 | 3 |
| ACC 101 | Financial Accounting (B) | 3 | 0 | 3 |
| Semester 5 | | | | |
| AUTO X9X | Cooperative Education Elective 2: Automotive (T) | 1 | 40 | 2 |
| Semester 6 | | | | |
| AUTO 170 | Heating and Air Conditioning (T) | 2 | 3 | 3 |
| AUTO 182 | Engine Performance 2 (T) | 2 | 3 | 3 |
| XXX XXX | Arts/ Humanities Elective (G) | 3 | 0 | 3 |
| XXX XXX | Social/ Behavioral Science Elective (G) | 3 | 0 | 3 |
| Total | | 50 | 113 | 63 |
| Credits: | | | | |

Electives

| First Year Experience Elective | | | |
|---------------------------------------|--|--|---|
| FYE 100 | College Success Strategies: Overview | | 1 |
| FYE 105 | College Success Strategies: Overview and Application | | 2 |

| | | |
|---|--|---|
| FYE 110 | College Success Strategies: Practice and Application | 3 |
| English Composition Elective | | |
| ENG 102 | English Composition 2: Contemporary Issues | 3 |
| ENG 103 | English Composition 2: Writing about Literature | 3 |
| ENG 104 | English Composition 2: Technical Communication | 3 |
| ENG 105 | English Composition 2: Business Communication | 3 |
| Mathematics Elective | | |
| MAT 105 | Quantitative Reasoning | 3 |
| MAT 111 | Business Mathematics | 3 |
| Arts/Humanities Elective | | |
| Any Transfer Module course from ART, LIT, MUS, PHI, REL, THE, or COMM 130 | | |
| Social/Behavioral Science Elective | | |
| Any Transfer Module course from ECO, GEO, HST, LBR, POL, PSY, SOC | | |
| Cooperative Education Electives (4 credit hours required) | | |
| AUTO 191 | Part-Time Cooperative Education 1: Automotive | 1 |
| AUTO 192 | Part-Time Cooperative Education 2: Automotive | 1 |
| AUTO 193 | Part-Time Cooperative Education 3: Automotive | 1 |
| AUTO 194 | Part-Time Cooperative Education 4: Automotive | 1 |
| AUTO 195 | Part-Time Cooperative Education 5: Automotive | 1 |
| AUTO 196 | Part-Time Cooperative Education 6: Automotive | 1 |
| AUTO 291 | Full-Time Cooperative Education 1: Automotive | 2 |
| AUTO 292 | Full-Time Cooperative Education 2: Automotive | 2 |
| AUTO 293 | Full-Time Cooperative Education 3: Automotive | 2 |

Some courses are offered in alternative versions identified with a letter after the course number-- for example, ENG 101 and ENG 101A.

- This curriculum displays only course numbers without the added letter.
- The alternative version, when available, meets the requirements of the course version without the added letter.

The letters G, B, and T (displayed after course titles or elective descriptions) identify types of courses required by the Ohio Department of Higher Education as part of an associate's degree curriculum.

G = General Education course in this curriculum

B = Basic Skills course in this curriculum

T = Technical course in this curriculum

Automotive Service Technician Certificate (ASTC)

Automotive Service Technician Certificate

| Semester 1 | | Lec | Lab | Credits |
|------------|---------------------------------------|-----|-----|---------|
| AUTO 100 | Introduction to Automotive Technology | 2 | 3 | 3 |
| AUTO 111 | Engine Repair | 2 | 3 | 3 |
| AUTO 150 | Brakes | 2 | 3 | 3 |
| AUTO 161 | Electrical/Electronic Systems 1 | 2 | 3 | 3 |

| | | | | |
|-------------------|---------------------------------|-----------|-----------|-----------|
| AUTO 181 | Engine Performance 1 | 2 | 3 | 3 |
| Semester 2 | | | | |
| AUTO 140 | Suspension and Steering | 2 | 3 | 3 |
| AUTO 162 | Electrical/Electronic Systems 2 | 2 | 3 | 3 |
| AUTO 170 | Heating and Air Conditioning | 2 | 3 | 3 |
| AUTO 175 | Powertrain Systems and Service | 2 | 3 | 3 |
| AUTO 182 | Engine Performance 2 | 2 | 3 | 3 |
| Total | | 20 | 30 | 30 |
| Credits: | | | | |

Automotive Service Management (ASM)

- Perform basic entry level tire and oil changes.
- Disassemble, inspection, and reassembly of automotive engines to determine needed repairs.
- Prepare student to perform battery and charging system repairs and "No start" diagnosis.
- Perform advanced electrical diagnosis and electrical accessory repair.
- Perform steering and suspension repairs and 4-wheel alignment.
- Perform all phase of brake and anti-lock brake diagnosis and repair.
- Perform diagnosis and repair of Fuel, Ignition and Emissions systems.
- Perform diagnosis and repair of Heating Ventilation and Air Conditioning. Perform advanced electrical diagnosis and electrical accessory repair system and replacement of need parts.
- Determine the need for major drive train component repair and perform the replacement.
- Perform advanced engine performance and emission diagnosis.

Faculty

Program Chair

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Co-op Coordinator

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Business Division Advising

(513) 569-1620
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Courses

AUTO 100 Introduction to Automotive Technology 3 Credits. 2 Lecture Hours. 3 Lab Hours.

A course on foundation concepts of the automotive industry. Topics include: safety practices, shop equipment and tools, vehicle subsystems, service publications, fasteners, professional responsibilities, and automotive maintenance.
Prerequisites: FYE 120 or placement into ENG 101
Corequisites: AUTO 161: Electrical/Electronic Systems 1

AUTO 111 Engine Repair**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on internal combustion engines. Topics include: engine classification, identification of parts, disassembly, inspection, and measurement; failure analysis; reassembly; and tools and procedures used in the engine rebuilding process.

Prerequisites: AUTO 100

AUTO 140 Suspension and Steering**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on operation, diagnosis, service, and repair of steering and suspension systems. Topics include: wheels and tires, front and rear suspension systems for front-wheel drive and rear-wheel drive vehicles, and wheel alignment angles.

Prerequisites: AUTO 100 and AUTO 161

AUTO 150 Brakes**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on operation, diagnosis, service, and repair of automotive braking systems. Topics include: hydraulic, mechanical, and anti-lock braking systems; power assist units; and machine operations of drums and rotors.

Prerequisites: AUTO 100 and AUTO 161

AUTO 161 Electrical/Electronic Systems 1**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on systematic diagnosis and repair of basic automotive electrical circuits. Topics include: Ohm's law, interpreting wiring schematics, step-by-step testing procedures, starting and charging systems, and automotive component testing using a variety of hand-held equipment.

Prerequisites: FYE 120 or placement into ENG 101

Corequisites: AUTO 100: Introduction to Automotive Technology

AUTO 162 Electrical/Electronic Systems 2**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A continuation of AUTO 161. Topics include: wiring schematic interpretation, diagnosis, and repair of driver information systems, cruise control systems, motor driven accessories, heated glass, and electronic body control systems.

Prerequisites: AUTO 100 and AUTO 161

AUTO 170 Heating and Air Conditioning**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on theory, diagnosis, service, and repair of automotive air conditioning and heating systems. Topics include: performance testing, pressure and leak testing, electrical and mechanical controls, compressors, clutches, safety devices, and ozone-safe service.

Prerequisites: AUTO 100 and AUTO 161

AUTO 175 Powertrain Systems and Service**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on assessment and replacement of major powertrain components. Topics include: procedures for replacing and servicing engines, drivetrain components, automatic transmissions, manual transmissions, and differentials.

Prerequisites: AUTO 100 and AUTO 111 and AUTO 161

AUTO 181 Engine Performance 1**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A course on engine performance diagnostics and fuel injection and ignition systems. Topics include: evaluation of basic engine mechanical system through vacuum, cylinder power balance, compression, and cylinder leakage testing.

Prerequisites: AUTO 111 and AUTO 161

AUTO 182 Engine Performance 2**3 Credits. 2 Lecture Hours. 3 Lab Hours.**

A continuation of AUTO 181. Topics include: On-Board Diagnostics systems, oscilloscopes, scan tools that retrieve diagnostic codes and data, diagnostic flow charts, and testing and replacing computer sensor inputs and computer-controlled output components.

Prerequisites: AUTO 181

AUTO 191 Part-Time Cooperative Education 1: Automotive**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their first part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: BUS 190 (minimum grade C)

AUTO 192 Part-Time Cooperative Education 2: Automotive**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their second part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: AUTO 191

AUTO 193 Part-Time Cooperative Education 3: Automotive**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their third part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: AUTO 192

AUTO 194 Part-Time Cooperative Education 4: Automotive**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their fourth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: AUTO 193

AUTO 195 Part-Time Cooperative Education 5: Automotive**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their fifth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: AUTO 194

AUTO 196 Part-Time Cooperative Education 6: Automotive**1 Credit. 1 Lecture Hour. 20 Lab Hours.**

Students seeking an associate's degree participate in their sixth part-time field learning experience related to their degree. Students are expected to register for academic courses during the same semester. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: AUTO 195

**AUTO 291 Full-Time Cooperative Education 1: Automotive
2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their first full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: BUS 190 (minimum grade C)

**AUTO 292 Full-Time Cooperative Education 2: Automotive
2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their second full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: AUTO 291

**AUTO 293 Full-Time Cooperative Education 3: Automotive
2 Credits. 1 Lecture Hour. 40 Lab Hours.**

Students seeking an associate's degree participate in their third full-time field learning experience related to their degree. Students must follow cooperative education policies and procedures to earn credit. Grades issued are Satisfactory or Unsatisfactory.

Prerequisites: AUTO 292