AUTOMOTIVE SERVICE TECHNOLOGY

Sylvania Campus
Automotive Metals Building (AM), Room 210
971-722-4130
pcc.edu/programs/auto-service/

CAREER AND PROGRAM DESCRIPTION
The automotive service technician maintains, diagnoses and repairs mechanical, hydraulic, fuel and electrical systems on modern automobiles and light-duty trucks. Automotive Service Technology graduates find jobs in independent repair shops, dealerships and fleet maintenance facilities. Some start their own businesses.

The PCC Automotive Service Technology Department provides flexible, career-oriented automotive repair education and training in an authentic and diverse environment. As a PCC Automotive student, you may prepare for any segment of the repair industry, including dealerships, fleets and independent repair shops. Partnerships between PCC and automotive repair businesses will allow you to learn in the classroom and on the job.

Students may select a certificate or degree program that meets their needs. The program consists of instructional modules of seventeen days, each module being an intensive course in a specialized area. At the completion of each module, students are assessed according to their success in meeting course outcomes. The automotive modules consist of lecture and hands-on laboratory work. Students will have additional costs for tools and equipment.

PCC Automotive provides comprehensive training to technicians already working in the field. See the Automotive Department chairperson to develop a personalized training plan.

DEGREES AND CERTIFICATES OFFERED
ASSOCIATE OF APPLIED SCIENCE DEGREE

AUTOMOTIVE SERVICE TECHNOLOGY

TWO-YEAR CERTIFICATE

Automotive Service Technology

Academic Prerequisites
- Applicants must take the placement test administered through test centers located at each campus.
- To begin the program, students must place into IRW 90 or (RD 90 and WR 90 ) or (ESOL 260 , ESOL 262 , and ESOL 264 ) and into MTH 58 or MTH 60 or higher-level math class.
- Students who place below MTH 58 or MTH 60 must successfully complete MTH 20 or be ready for MTH 58 or MTH 60 before registering for the automotive program.

Academic Requirements
- Students must complete each AM course with a "C" or "P" or higher in order to earn the degree or certificate.

Non-Academic Prerequisites
- The Automotive Service Technology program accepts new students three times a year. New students must contact the PCC automotive department for advising and registration.

Non-Academic Requirements
- None

AUTOMOTIVE SERVICE TECHNOLOGY AAS DEGREE

Minimum 93 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. In addition to required courses in the program of study, students must satisfy MTH 58/65 competency. Students should consult with program advisors for course planning.

COURSE OF STUDY
The coursework listed below is required. The following is an example of a term-by-term breakdown.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>AM 100 Intro to Automotive Systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 161 Electrical Systems I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 111 Engine Repair</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CG 209 Job Finding Skills</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>Second</td>
<td>AM 151 Brakes</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 141 Suspension and Steering</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 142 Advanced Suspension, Steering and Brakes</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>Third</td>
<td>AM 162 Electrical Systems II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 163 Advanced Electrical/Electronic Systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 171 Heating &amp; Air Conditioning Systems</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>Fourth</td>
<td>AM 181 Engine Performance I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 182 Engine Performance II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 183 Engine Performance III</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>General Education</td>
<td>4</td>
</tr>
<tr>
<td>Fifth</td>
<td>AM 131 Manual Drive Train and Axles</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 121 Automatic Transmission/Transaxle</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 132 Advanced Automatic and Manual Drive Train</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Automotive Service Technology Elective</td>
<td>4</td>
</tr>
<tr>
<td>Sixth</td>
<td>AM 201 Auto Shop Lab I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 202 Auto Shop Lab II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>AM 203 Auto Shop Lab III</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>93</td>
</tr>
</tbody>
</table>

AUTOMOTIVE SERVICE ELECTIVES

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM 190</td>
<td>Subaru-U Specialized Technical Training</td>
<td>4</td>
</tr>
<tr>
<td>AM 280A</td>
<td>Cooperative Education: Automotive Service</td>
<td>4</td>
</tr>
<tr>
<td>BA 101</td>
<td>Introduction to Business</td>
<td>4</td>
</tr>
<tr>
<td>BA 206</td>
<td>Management Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>BA 211</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>BA 213</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BA 223</td>
<td>Principles of Marketing</td>
<td>4</td>
</tr>
<tr>
<td>BA 226</td>
<td>Business Law I</td>
<td>4</td>
</tr>
<tr>
<td>CAS 133</td>
<td>Basic Computer Skills/Microsoft Office</td>
<td>4</td>
</tr>
<tr>
<td>CG 101</td>
<td>College Survival and Success: Personal Responsibility</td>
<td>1</td>
</tr>
</tbody>
</table>
CG 111A  Study Skills for College Learning  3
CG 140A  Career and Life Planning  3
COMM 111  Business & Professional Communication  4
EC 201  Principles of Economics: Microeconomics  4
EC 202  Principles of Economics: Macroeconomics  4
MSD 101  Principles of Management and Supervision  3
MSD 105  Workplace Communication Skills  3
MSD 110  Gender Conflict Resolution  1
MSD 115  Improving Work Relations  3
MSD 117  Customer Relations  3
MSD 119A  Intercultural Communication  1
MSD 123  Job Search Strategies  1
MSD 128  Crisis Intervention: Handling the Difficult Person  1
MSD 130  Creative Problem Solving  3
MTH 111  College Algebra  5
WLD 136A  Beginning Wire Welding  3
WLD 156A  Beginning Oxy-Acetylene Welding Practice  3
WR 122  English Composition  4
WR 227  Technical and Professional Writing 1  4

AUTOMOTIVE SERVICE TECHNOLOGY TWO-YEAR CERTIFICATE

Minimum 77 credits. Students must meet all certificate requirements.

COURSE OF STUDY

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term
- AM 100  Intro to Automotive Systems §  4
- AM 111  Engine Repair §  4
- AM 161  Electrical Systems I §  4
- CG 209  Job Finding Skills  1

Automotive Service Technology Elective  4

Second Term
- AM 151  Brakes  4
- AM 141  Suspension and Steering  4
- AM 142  Advanced Suspension, Steering and Brakes §  4

Third Term
- AM 162  Electrical Systems II  4
- AM 163  Advanced Electrical/Electronic Systems  4
- AM 171  Heating & Air Conditioning Systems §  4

Fourth Term
- AM 181  Engine Performance I  4
- AM 182  Engine Performance II  4
- AM 183  Engine Performance III §  4

Fifth Term
- AM 131  Manual Drive Train and Axles  4
- AM 121  Automatic Transmission/Transaxle  4
- AM 132  Advanced Automatic and Manual Drive Train §  4

Sixth Term
- AM 201  Auto Shop Lab I  4
- AM 202  Auto Shop Lab II  4
- AM 203  Auto Shop Lab III §  4

Total Credits  77

§ Course contains Related Instruction and cannot be substituted with another course; Related Instruction details can be viewed here.

AUTOMOTIVE SERVICE ELECTIVES

Code  Title  Credits
AM 190  Subaru-U Specialized Technical Training  4
AM 280A  Cooperative Education: Automotive Service  4
BA 101  Introduction to Business  4
BA 206  Management Fundamentals  3
BA 211  Principles of Accounting I  3
BA 213  Managerial Accounting  4
BA 223  Principles of Marketing  4
BA 226  Business Law I  4
CAS 133  Basic Computer Skills/Microsoft Office  4
CG 101  College Survival and Success: Personal Responsibility  1

CG 111A  Study Skills for College Learning  3
CG 140A  Career and Life Planning  3
COMM 111  Business & Professional Communication  4
EC 201  Principles of Economics: Microeconomics  4
EC 202  Principles of Economics: Macroeconomics  4
MSD 101  Principles of Management and Supervision  3
MSD 105  Workplace Communication Skills  3
MSD 110  Gender Conflict Resolution  1
MSD 115  Improving Work Relations  3
MSD 117  Customer Relations  3
MSD 119A  Intercultural Communication  1
MSD 123  Job Search Strategies  1
MSD 128  Crisis Intervention: Handling the Difficult Person  1
MSD 130  Creative Problem Solving  3
MTH 111  College Algebra  5
WLD 136A  Beginning Wire Welding  3
WLD 156A  Beginning Oxy-Acetylene Welding Practice  3
WR 122  English Composition  4
WR 227  Technical and Professional Writing  4

AM 100. Intro to Automotive Systems. 4 Credits.
Introduces automotive tools, fasteners, precision measurement, service information systems/manuals and shop procedures. Includes basic automotive service, inspection, and measuring procedures and the practical application of mathematics for the automotive trade. Audit available.

AM 111. Engine Repair. 4 Credits.
Introduces the theories, operations, and components used in the 4-stroke internal combustion engine. Includes disassembly and reassembly of school-owned engines to gain experience in hand tool use, proper engine repair, and evaluation procedures. Prerequisite: CG 209. Audit available.

AM 121. Automatic Transmission/Transaxle. 4 Credits.
Introduces automatic transmissions/transaxles, the study of power flow, and diagnosis of automatic transmission mechanical and hydraulic systems. Includes proper rebuild procedures, component identification and dynamometer testing of a student-built automatic transmission. Prerequisite: CG 209. Audit available.

AM 131. Manual Drive Train and Axles. 4 Credits.
Introduces manual transmissions/transaxles, the study of power flow and diagnosis of manual transmission systems. Includes proper repair procedures, component identification and service procedures performed on school-owned vehicles and components. Prerequisite: CG 209. Audit available.
AM 132. Advanced Automatic and Manual Drive Train. 4 Credits.
Introduces work on approved customer vehicles, including diagnosing and servicing automatic and manual drive train customer concerns. Provides a realistic experience and develops an understanding of procedures, which take place daily in an automotive repair facility. This is the capstone course building on the skills, knowledge and abilities learned through successful completion of AM 121 and AM 131. Prerequisite: CG 209. Audit available.

AM 141. Suspension and Steering. 4 Credits.
Introduces basic principles of suspension, steering and wheel alignment including tire construction, types and sizing for passenger cars and light duty trucks. Includes disassembling and reassembling suspension and steering system components. Introduces computerized 4-wheel-alignment, tire balancing and tire-changing equipment. Prerequisite: CG 209. Audit available.

AM 142. Advanced Suspension, Steering and Brakes. 4 Credits.
Covers diagnosis and repair of suspension, steering and brake systems in a laboratory/shop setting. Includes how to perform complete suspension, steering, and brake system inspections and determine what repairs are needed and how to order parts and complete repairs under close instructor supervision. Vehicles serviced are drawn from a pool of customer or school-owned vehicles. This is the capstone course building on the skills, knowledge and abilities learned through successful completion of AM 151 and AM 141. Prerequisite: CG 209. Audit available.

AM 151. Brakes. 4 Credits.
Introduces principles of automotive braking systems. Includes disassembling and reassembling brake system components using school-owned equipment. Includes proper measuring and machining of brake drums and discs. Prerequisite: CG 209. Audit available.

AM 161. Electrical Systems I. 4 Credits.
Introduces electrical theories, circuit construction, operations and testing, schematic symbols, battery and starter theories, diagnosis, and repairs. Covers proper repair procedures, component identification, and service procedures performed on school-owned vehicles and components. Audit available.

AM 162. Electrical Systems II. 4 Credits.
Covers reading schematics, starting and charging system theories, operations, diagnosis and repair. Includes proper repair procedures, electrical circuit diagnosis, component identification, and service procedures performed on school-owned vehicles and components. Audit available.

AM 163. Advanced Electrical/Electronic Systems. 4 Credits.
Introduces customer work on approved automobiles including diagnosis of electrical problems, reading of schematics, use of test equipment, satisfactory completion of wire connections, testing, repair, and/or replacement of electrical units. This is the capstone course building on the skills, knowledge and abilities learned through successful completion of AM 161 and AM 162. Prerequisite: CG 209. Audit available.

AM 171. Heating & Air Conditioning Systems. 4 Credits.
Introduces theories and operations of automotive heating and air conditioning. Includes service, testing and repair of air conditioning, ventilation, and heater and engine cooling systems. Covers federal laws related to mobile air conditioning refrigerants. Prerequisite: CG 209. Audit available.

AM 181. Engine Performance I. 4 Credits.
Introduces the use of automotive scan tools, lab scopes, and electronic test equipment. Covers the operation and testing of electronic ignition systems. Introduces basic fuel delivery and emissions control system concepts and related components. This is the first course in a three-course sequence. Prerequisite: CG 209. Audit available.

AM 182. Engine Performance II. 4 Credits.
Reinforces the use of automotive scan tools, lab scopes, and electronic test equipment. Reviews the operation and testing of electronic ignition systems. Introduces intermediate fuel delivery and emissions control system concepts and testing. This is the second course in a three-course sequence. Prerequisite: CG 209. Audit available.

AM 183. Engine Performance III. 4 Credits.
Covers advanced use of automotive scan tools, lab scopes, and electronic test equipment. Emphasizes advanced engine performance theory and practice through diagnosis and repair of electronic ignitions, fuel delivery and emissions control systems in a shop environment. This is the third course in a three-course sequence. Prerequisite: CG 209. Audit available.

AM 190. Subaru-U Specialized Technical Training. 4 Credits.
Provides instruction and reinforcement of Subaru-specific vehicle systems, theory, and operation. Introduces Subaru-specific operational structures, tools, and service information relevant to the diagnosis and repair of Subaru vehicles. Requirement: current enrollment in Automotive Service Technology program. Prerequisites: AM 100, AM 161, AM 162 and CG 209. Audit available.