

AUTOMOTIVE TECHNOLOGY

SCHOOL OF BUSINESS AND TECHNOLOGY

DEAN: Dr. Mink Stavenga, DBA, Office 470K, 619-482-6569

FACULTY: Jose Ibarra, A.S.; David Preciado, A.S.

DEPARTMENT CHAIR: Marie Vicario-Fisher, M.S., M.P.H.

GENERAL DESCRIPTION

Automotive technology is a study of the complete automobile divided into a subsystem approach. This program of study explores and instructs students in the operation of all automotive systems. Processes are emphasized including problem solving, repair procedures, service techniques, diagnostic analysis, and shop safety. All automotive system instruction meets Automotive Service Excellence (ASE) guidelines and National Automotive Technicians Education Foundation (NATEF) certification.

CAREER OPTIONS

Below is a sample of the career options for the automotive major. Most require a certificate or an associate in science degree. Automotive Service Excellence Certification will allow entry-level employment as: mechanic, automotive technician, service station attendant, repair shop operator, service writer/advisor, part sales person, automobile insurance adjuster, vocational teacher, race car mechanic, supplier or distributor, and positions in allied professions of business, marketing, and industry.

DEGREE/CERTIFICATE OPTIONS

MAJOR CODE

Associate in Science Degree: Career/Technical

Automotive Technology	02870
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Certificates of Achievement

Advanced Emission Specialist	02766
Automotive Performance Systems	02765
Automotive Technology	02871

Certificate of Proficiency

Automotive Brake and Suspension Systems (ABS and Four-Wheel Alignment)	02750
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Areas of Preparation for ASE Certification Exam:

- ASE Brakes
- ASE Suspension
- ASE Engine Performance
- ASE Automotive Heating, Cooling, and Air Conditioning
- ASE Electrical Systems
- ASE Engine Repair
- ASE Automotive Manual Transmissions
- ASE Manual Transmission

Consult with a counselor to develop a Student Education Plan (SEP), which lists the courses necessary to achieve your academic goal.

ATTENTION SMALL BUSINESS OWNERS AND ENTREPRENEURS:

Study small business management. Earn a Certificate that combines your education discipline with Entrepreneurship courses. For more information turn to Business Management - Entrepreneurship Education.

ASSOCIATE IN SCIENCE DEGREE

AUTOMOTIVE TECHNOLOGY

ASSOCIATE IN SCIENCE DEGREE

CAREER/TECHNICAL (MAJOR CODE: 02870)

Based on the National Institute for Automotive Service Excellence Certification Program (ASE). Courses fulfill the needs of beginning and advanced students and those in the field who require upgrading. Prepares students for the National ASE Certification exams.

Program Student Learning Outcome Statement:

- Inspect, diagnose, and repair small engines.
- The students will inspect, diagnose, and repair small engines.

FIRST SEMESTER

AT 101	Introduction to Basic Automotive Service	3
AT 102	Automotive Science and Basic Mechanics	3
AT 109	Automotive Braking Systems	3
AT 110	Automotive Suspension, Alignment, and Steering	3

SECOND SEMESTER

AT 120	Engine Performance I	3
AT 130	Automotive Electrical Systems	3
AT 131	Automotive Heating, Cooling, and Air Conditioning	3
AT 140	Engine Repair	3

THIRD SEMESTER

AT 220	Engine Performance II	3
AT 230	Automotive Electronics	3
AT 234	Automatic Transmissions and Transaxles	3
AT 236	Manual Transmission, Transaxles, and Final Drives	3
AT 242	Clean Air Car	3
AT 247	Automotive Emission Systems and Computerized Engine Controls	3

Total units	42
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Recommended Electives: AT 290–293.

To earn an associate degree, additional general education and graduation requirements must be completed. See page 64.



CERTIFICATES

ADVANCED EMISSION SPECIALIST

CERTIFICATE OF ACHIEVEMENT

CAREER/TECHNICAL (MAJOR CODE: 02766)

Designed to prepare students for the Advanced Emission Specialist Technician license that allows an individual to inspect, diagnose, adjust, repair, and certify emission control systems on vehicles subject to the smog check program at licensed stations in all areas of the state.

Program Student Learning Outcome Statement:

- Inspect diagnose and repair emission systems.

GAINFUL EMPLOYMENT:

The U.S. Department of Education requires colleges to disclose a variety of information for any financial aid eligible program that "prepares students for gainful employment in a recognized occupation."

Students who complete this program will have acquired the necessary analytical tools to successfully secure gainful employment in the field of study.

For more information regarding the data provided for this program and what it means to you as a student, please feel free to visit our SWC Gainful Employment website at: www.swccd.edu/gainfulemployment.

FIRST SEMESTER

AT 101	Introduction to Basic Automotive Service	3
AT 102	Automotive Science and Basic Mechanics	3
AT 120	Engine Performance I	3
AT 130	Automotive Electrical Systems	3

SECOND SEMESTER

AT 140	Engine Repair	3
AT 220	Engine Performance II	3
AT 230	Automotive Electronics	3
AT 247	Advanced Emission Systems and Computerized Engine Controls	3

THIRD SEMESTER

AT 242	Clean Air Car	3
Total units		27

AUTOMOTIVE BRAKE AND SUSPENSION SYSTEMS (ABS AND FOUR-WHEEL ALIGNMENT)

CERTIFICATE OF PROFICIENCY

CAREER/TECHNICAL (MAJOR CODE: 02750)

Program Student Learning Outcome Statement:

- Inspect diagnose and repair brake and suspension system.

AT 101	Introduction to Basic Automotive Service	3
AT 102	Automotive Science and Basic Mechanics	3
AT 109	Automotive Braking Systems	3
AT 110	Automotive Suspension, Alignment, and Steering	3
Total units		12

AUTOMOTIVE PERFORMANCE SYSTEMS

CERTIFICATE OF ACHIEVEMENT

CAREER/TECHNICAL (MAJOR CODE: 02765)

Program Student Learning Outcome Statement:

- Inspect, diagnose and repair performance systems.

GAINFUL EMPLOYMENT:

The U.S. Department of Education requires colleges to disclose a variety of information for any financial aid eligible program that "prepares students for gainful employment in a recognized occupation."

Students who complete this program will have acquired the necessary analytical tools to successfully secure gainful employment in the field of study.

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AT 101	Introduction to Basic Automotive Service	3
AT 102	Automotive Science and Basic Mechanics	3
AT 120	Engine Performance I	3
AT 220	Engine Performance II	3
AT 242	Clean Air Car	3
AT 247	Advanced Emission Systems and Computerized Engine Controls	3
Total units		18



AUTOMOTIVE TECHNOLOGY

CERTIFICATE OF ACHIEVEMENT

CAREER/TECHNICAL (MAJOR CODE: 02871)

Program Student Learning Outcome Statement:

- Inspect, diagnose, and repair small engines.
- The students will inspect, diagnose, and repair small engines.

GAINFUL EMPLOYMENT:

The U.S. Department of Education requires colleges to disclose a variety of information for any financial aid eligible program that “prepares students for gainful employment in a recognized occupation.”

Students who complete this program will have acquired the necessary analytical tools to successfully secure gainful employment in the field of study.

For more information regarding the data provided for this program and what it means to you as a student, please feel free to visit our SWC Gainful Employment website at: www.swccd.edu/gainfulemployment.

FIRST SEMESTER

AT 101	Introduction to Basic Automotive Service	3
AT 102	Automotive Science and Basic Mechanics	3
AT 109	Automotive Braking Systems	3
AT 110	Automotive Suspension, Alignment, and Steering	3

SECOND SEMESTER

AT 120	Engine Performance I	3
AT 130	Automotive Electrical Systems	3
AT 131	Automotive Heating, Cooling, and Air Conditioning	3
AT 140	Engine Repair	3

THIRD SEMESTER

AT 220	Engine Performance II	3
AT 230	Automotive Electronics	3
AT 234	Automatic Transmissions and Transaxles	3
AT 236	Manual Transmission, Transaxles, and Final Drives	3
AT 242	Clean Air Car	3
AT 247	Advanced Emission Systems and Computerized Engine Controls	3
Total units		42

Recommended Electives: AT 290–293.

ASE Certification Areas:

ASE Brakes Certification	AT 109
ASE Suspension Certification	AT 110
ASE Engine Performance Certification	AT 120/AT 220
ASE Automotive Heating, Cooling, and Air Conditioning Certification	AT 131
ASE Electrical Systems Certification	AT 130/AT 230
ASE Engine Repair Certification	AT 140
ASE Automotive Transmissions Certification	AT 234
ASE Manual Transmissions Certification	AT 236

Certificates of Course Achievement are offered in the following areas: Clean Air Car—AT 242 and Automotive Emission Systems and Computerized Engine Controls—AT 247.

BAJA CALIFORNIA STUDIES

SCHOOL OF MATHEMATICS, SCIENCE, AND ENGINEERING

DEAN: Michael Odu, Ph.D., Office 215A, 619-482-6344

FACULTY: Heather Eudy, M.F.A.; Rachel Hastings, Ph.D.;

Margery Stinson, M.S.; Ken Yanow, M.S.; Rebecca Wolniewicz, Ph.D.

DEPARTMENT CHAIR: Margie Stinson, M.S.

GENERAL DESCRIPTION

The Baja California Studies certificate allows students to develop a concentration of study devoted to Baja California that complements any major. The certificate is based on interdisciplinary courses that focus on Baja California. It is not a major but provides students a list of courses that help fulfill general education requirements in various disciplines while focusing intensively on Baja California. Students develop a keen appreciation of the rich connections between the arts, humanities, social life, and physical sciences.

CAREER OPTIONS

The Baja California Studies certificate complements any major; therefore, it is an asset to those who seek employment opportunities in a variety of fields. It prepares recipients to assume leadership roles in the complex educational, environmental, civic, and health issues facing Baja California and the border region. In addition to expanding employment opportunities, it prepares students to transfer to a four-year degree institution to continue interdisciplinary, Mexican-American, or Latin American studies.

