AUTOMOTIVE TECHNOLOGY

SCHOOL OF BUSINESS AND TECHNOLOGY

DEAN: Dr. Mink Stavenga, DBA, Office 470K, 619-482-6569
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DEPARTMENT CHAIR: Marie Vicario-Fisher, M.S., M.PH.

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

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<th>Degree/Certificate Options</th>
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<td>Associate in Science Degree: Career/Technical</td>
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<td>Automotive Technology</td>
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<td>Certificates of Achievement</td>
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<td>Advanced Emission Specialist</td>
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<td>Automotive Performance Systems</td>
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<td>Automotive Technology</td>
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<td>Certificate of Proficiency</td>
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<td>Automotive Brake and Suspension Systems (ABS and Four-Wheel Alignment)</td>
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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

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

Recommended Electives: AT 290–293.

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.

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.

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.

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

Some courses within this program may require additional coursework that must be completed prior to enrollment in these courses. Please consult the individual course listings for prerequisites and any other limitations on enrollment.
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.