AUTOMOTIVE TECHNOLOGY (AT)

AT 101
INTRODUCTION TO BASIC AUTOMOTIVE SERVICE
3 UNITS

Grade Only
Fee: $33.5
Lecture 2 hours, laboratory 4 hours
Offered: ALL
50. Introduces basic general automotive tool and shop equipment use, as well as general basic vehicle service procedures. Focuses on classroom instruction providing "how-to" information. Emphasizes hands-on lab activities for student mastery of basic skills. [D; CSU] (Same as: AT 101A)

AT 101A
INTRODUCTION TO BASIC AUTOMOTIVE SERVICE
1 UNIT

Grade Only
Lecture 0.50 hours, laboratory 1.50 hour
Offered: ALL
Introduces basic general automotive tool and shop equipment use, as well as general basic vehicle service procedures. Focuses on classroom instruction providing "how-to" information. Emphasizes hands-on lab activities for student mastery of basic skills. [D; CSU] (Same as: AT 101)

AT 102
AUTOMOTIVE SCIENCE AND BASIC MECHANICS
3 UNITS

Pass/No Pass or Grade is Allowed
Fee: $33.5
Recommended Preparation: AT 101 or equivalent.
Lecture 2 hours, laboratory 4 hours
Offered: ALL
50. Provides in-depth discussions and understanding of the entire automobile science and technology. Lays the foundation for an educated "diagnostics" approach. Soft skills, customer service, as well as legal aspects of automotive repair will also be addressed. All lab activities will be directly related to classroom topics of discussion. [D; CSU]

AT 104
AUTOMOTIVE SERVICE CONSULTANT
3 UNITS

Grade Only
Lecture 2 hours, laboratory 4 hours
Offered: ALL
Introduces students to the duties and responsibilities that a service consultant will face at the work place. This course focuses on communication, product knowledge, and shop operations to include service writing programs, parts expediting and technical tools and resources. This Course aligns with ASE C1 Test task list. [ND]

AT 105
AUTOMOTIVE PARTS SPECIALIST
3 UNITS

Grade Only
Lecture 2 hours, laboratory 4 hours
Offered: ALL
Addresses the aftermarket wholesale and the retail automobile parts industry needs. It focuses on general operations, customer relations and sales skill, vehicle system knowledge, catalog information, inventory management and merchandising. [ND]

AT 109
AUTOMOTIVE BRAKING SYSTEMS
3 UNITS

Grade Only
Fee: $33.5
Recommended Preparation: AT 101 and AT 102 or equivalent.
Lecture 2 hours, laboratory 4 hours
Offered: FALL
50. Introduces the theory and principles of brake systems, inspection, and repair. Emphasizes practical experience with drum brakes, disc brakes, power brakes and wheel bearing service, and repair. Prepares students for the California State Brake License and national Automotive Service Excellence (ASE) Exam A5. [D; CSU]

AT 110
AUTOMOTIVE SUSPENSION, ALIGNMENT, AND STEERING
3 UNITS

Pass/No Pass or Grade is Allowed
Fee: $33.5
Recommended Preparation: AT 101 and AT 102, or equivalent.
Lecture 2 hours, laboratory 4 hours
Offered: FALL, SPRING
50 Introduces the theory and principles of automotive steering and suspension systems, inspections, and repairs. Emphasizes practical experience with steering, suspension, tires and wheel bearings, inspection, and repair are accomplished using a computerized four-wheel alignment rack. Prepares students for the Automotive Service Excellence (ASE) Test A4. [D; CSU]

AT 120
ENGINE PERFORMANCE I
3 UNITS

Grade Only
Fee: $33.5
Recommended Preparation: AT 101 and AT 102, or equivalent.
Lecture 2 hours, laboratory 4 hours
Offered: SPRING
50. Explores engine performance on vehicles in relation to the ignition system function and fuel system delivery. Emphasizes the use of ignition scope and fuel system diagnostic equipment, and covers exhaust out gas analyzer functions. Prepares students for the Automotive Service Excellence Certification Test in Engine Performance (A8). [D; CSU]

AT 130
AUTOMOTIVE BASIC ELECTRICAL SYSTEMS
3 UNITS

Grade Only
Fee: $33.5
Lecture 2 hours, laboratory 4 hours
Offered: SPRING
50. Introduces students to general automotive electrical/electronic diagnostics, battery and starting system diagnostics and repair, and charging system diagnosis and repair. Emphasizes on the understanding of basic electrical theory and application. This Course aligns with ASE A6 Test task list. [D; CSU]

AT 131
AUTOMOTIVE HEATING, COOLING, AND AIR CONDITIONING
3 UNITS

Grade Only
Fee: $33.5
Recommended Preparation: AT 101 and AT 102 or equivalent.
Lecture 2 hours, laboratory 4 hours
Offered: SPRING
50. Introduces the theory and principles of automotive heating, cooling, and air conditioning systems. Emphasizes practical experience with service, diagnosis, and repair will be accomplished using state-of-the-art equipment. Includes preparation for the Automotive Service Excellence (ASE) Heating and Air Conditioning Test (A7), and Refrigerant Handler Exam and Certification. [D; CSU]

AT 140
ENGINE REPAIR
3 UNITS

Grade Only
Fee: $33.5
Recommended Preparation: AT 101 and AT 102 or equivalent.
Lecture 2 hours, laboratory 4 hours
Offered: SPRING, SUMMER
Introduces the theory and principles of automotive engine system, inspection, and repair. Emphasizes practical experience with engine disassembly and assembly, service, and repair. Prepares students for the Automotive Service Excellence (ASE) Test A1. [D; CSU]

AT 190
INTRODUCTION TO HYBRID, ELECTRIC, AND ALTERNATIVE FUEL VEHICLES
1 UNIT

Pass/No Pass or Grade is Allowed
Fee: $243.53
Prerequisite: AT 130 and AT 230 or equivalent.
Lecture 0.50 hours, laboratory 2 hours
Offered: SPRING
53. Introduces students to Hybrid, Electric, and Alternative Fueled vehicles. Emphasizes safety, hazards, and basic component identification. [D;CSU]

AT 191
BASIC HYBRID, ELECTRIC, AND ALTERNATIVE FUEL VEHICLE CONCEPTS
2 UNITS

Grade Only
Fee: $243.53
Prerequisite: AT 190 or equivalent.
Lecture 1.50 hour, laboratory 2 hours
Offered: SPRING
53 Focuses on Power Electronics and Battery Systems. Distinguishes differences and similarities of the technology incorporated in Hybrid, Electric, and Alternative Fueled vehicles. [D; CSU]

AT 192
INTERMEDIATE HYBRID, ELECTRIC, AND ALTERNATIVE FUEL VEHICLE ELECTRONICS
1 UNIT

Grade Only
Fee: $243.53
Prerequisite: AT 190 or equivalent; AT 191 or equivalent.
Lecture 0.50 hours, laboratory 2 hours
Offered: ALL
53. Focuses on DC/DC and AC/AC conversions with Electric Vehicle/ Hybrid's for propulsion and support systems. Examines communication protocol between systems using LIN data systems. [D; CSU]

AT 193
ADVANCED HYBRID, ELECTRIC, AND ALTERNATIVE FUEL VEHICLE CONCEPTS
2 UNITS

Grade Only
Fee: $243.53
Prerequisite: AT 190 or equivalent;AT 192 or equivalent.
Lecture 1.50 hour, laboratory 2 hours
Offered: ALL
53. Emphasizes interlock systems used for redundant protection of high-voltage systems. Close examination of electric automotive drives are involved as well as power down of the system for repairs. [D; CSU]

AT 220
ENGINE PERFORMANCE II
3 UNITS

Grade Only
Fee: $33.5
Recommended Preparation: AT 230, AT 234, and AT 236, or equivalent.
Lecture 2 hours, laboratory 4 hours
Offered: FALL
50. Covers engine performance and driveability (tune-up) on vehicles with electronic ignition and fuel injection systems. Utilizes computerized diagnostic equipment and four-gas analyzers. Completes preparation for ASE Engine Performance Test (A8). [D; CSU]

AT 230
AUTOMOTIVE ADVANCED ELECTRICAL SYSTEMS
3 UNITS

Grade Only
Fee: $33.5
Recommended Preparation: AT 101 and AT 102, or equivalent.
Prerequisite: AT 130 or equivalent.
Lecture 2 hours, laboratory 4 hours
Offered: FALL, SPRING
50. Provides an advanced course in automotive electrical and electronic systems. Emphasizes the lighting, instrument cluster, driver information, body electrical system diagnosis and repair. Focuses on the analysis of automotive electronics, and a working knowledge of diagnostic procedures when troubleshooting electronically controlled systems. Includes preparation for the Automotive Service Excellence Exam (A6). [D; CSU]

AT 234
AUTOMATIC TRANSMISSIONS AND TRANSAXLES
3 UNITS

Grade Only
Fee: $33.5
Recommended Preparation: AT 101 and AT 102 or equivalent.
Lecture 2 hours, laboratory 4 hours
Offered: SPRING
50. Introduces the theory and principles of automatic transmissions and transaxles. Emphasizes practical experience in troubleshooting and rebuilding. Prepares students for the Automotive Service Excellence (ASE) Test (A2). [D; CSU]

AT 236
MANUAL TRANSMISSION, TRANSAXLES, AND FINAL DRIVES
3 UNITS

Grade Only
Fee: $33.5
Recommended Preparation: AT 101 and AT 102 or equivalent.
Lecture 2 hours, laboratory 4 hours
Offered: FALL
50. Explores the theory and principles of manual drive systems. Emphasizes practical experience with clutches, transmissions, drive shafts, final drives, and transaxles. Includes preparation for the Automotive Service Excellence (ASE) Test A3. [D; CSU]

AT 242
CLEAN AIR CAR
3 UNITS

Pass/No Pass or Grade is Allowed
Fee: $33.5
Recommended Preparation: AT 120 and AT 220, or equivalent; Students can take this course without the Recommended Preparation, but will not be certified as eligible to take the licensing examination.
Lecture 2 hours, laboratory 4 hours
Offered: FALL
50. Provides 120-hour minimum instruction required by the State of California and entry-level, upgrading, or advanced training techniques for the automotive field. Uses Bureau of Automotive Repair's curriculum. Prepares students to take the California State Motor Vehicle Pollution Control License Test (I/M Test). [D; CSU]

AT 247
AUTOMOTIVE EMISSION SYSTEMS AND COMPUTERIZED ENGINE CONTROLS
3 UNITS

Pass/No Pass or Grade is Allowed
Fee: $33.5
Recommended Preparation: AT 242 or equivalent; or current ASE certification (A-8).
Lecture 2 hours, laboratory 4 hours
Offered: ALL
50. Prepares students for advanced emission systems diagnosis. Incorporates the Bureau of Automotive Repair (BAR-97), and training courses date (20 hours). Focuses on training in five-gas analysis, Acceleration Simulation Mode (ASM) dynamometer testing, laboratory scope usage, and waveform interpretation, advanced scan tool usage, and On-Board Diagnostics Two (OBD II). [D; CSU]

AT 290
WORK EXPERIENCE IN AUTOMOTIVE TECHNOLOGY I
2-4 UNITS

Grade Only
Recommended Concurrent Enrollment: Enrollment in one other class directly related to the Automotive Technology major in order to apply learned theory in a practical hands-on setting through an internship class.
Limitation on Enrollment: Declared Automotive Technology major.
Laboratory 12 hours
Offered: FALL, SPRING
Introduces principles and skills acquired in the Automotive Technology majors to on-the-job assignments. One unit of credit is granted for every 54 hours of work experience. Credit may be accrued at the rate of 2 to 4 units per semester for a maximum of fourteen units. The job supervisor and instructor will evaluate each student's job performance. [D; CSU]

AT 291
WORK EXPERIENCE IN AUTOMOTIVE TECHNOLOGY II
2-4 UNITS

Grade Only
Recommended Concurrent Enrollment: Enrollment in one other class directly related to the Automotive Technology major in order to apply learned theory in a practical hands-on setting through an internship class.
Prerequisite: AT 290 or equivalent.
Limitation on Enrollment: Declared Automotive Technology major.
Laboratory 12 hours
Offered: FALL, SPRING
Applies beginning-level principles and skills acquired in the Automotive Technology majors to on-the-job assignments. One unit of credit is granted for every 54 hours of work experience. Credit may be accrued at the rate of 2 to 4 units per semester for a maximum of fourteen units. The job supervisor and instructor will evaluate each student's job performance. [D; CSU]

AT 292
WORK EXPERIENCE IN AUTOMOTIVE TECHNOLOGY III
2-4 UNITS

Grade Only
Recommended Concurrent Enrollment: Enrollment in one other class directly related to the Automotive Technology major in order to apply learned theory in a practical hands-on setting through an internship class.
Prerequisite: AT 291 or equivalent.
Limitation on Enrollment: Declared Automotive Technology major.
Laboratory 12 hours
Offered: FALL, SPRING
Provides intermediate-level principles and skills acquired in the Automotive Technology majors to on-the-job assignments. One unit of credit is granted for every 54 hours of work experience. Credit may be accrued at the rate of 2 to 4 units per semester for a maximum of fourteen units. The job supervisor and instructor will evaluate each student's job performance. [D; CSU]

AT 293
WORK EXPERIENCE IN AUTOMOTIVE TECHNOLOGY IV
2-4 UNITS

Grade Only
Recommended Concurrent Enrollment: Enrollment in one other class directly related to the Automotive Technology major in order to apply learned theory in a practical hands-on setting through an internship class.
Prerequisite: AT 292 or equivalent.
Limitation on Enrollment: Declared Automotive Technology major.
Laboratory 12 hours
Offered: FALL, SPRING
Covers advanced-level principles and skills acquired in the Automotive Technology majors to on-the-job assignments. One unit of credit is granted for every 54 hours of work experience. Credit may be accrued at the rate of 2 to 4 units per semester for a maximum of fourteen units. The job supervisor and instructor will evaluate each student's job performance. [D; CSU]

AT 299
INDEPENDENT STUDY
1-3 UNITS

Pass/No Pass or Grade is Allowed
Limitation on Enrollment: Eligibility for independent study.
Lecture 3 hours
Offered: ALL
Individual study or research in some area of automotive technology of particular interest to the student and not included in regular courses of the college. [D; CSU]