

Department of
Automotive



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Department of Automotive

The Brigham Young University-Idaho Automotive Department prepares student to enter one of the largest and far reaching service industries that affects virtually every household. The opportunities in this field have never been better as the complexity of the automobile removes many operations and procedures from the realm of the do-it-yourself amateur technician. This results in a good demand for well trained, honest, and progressive individuals, whether it be in the technical, industrial, teaching, or business field professions.

The Automotive Program is housed in the Mark Austin Engineering and Technology building, one of the finest facilities for automotive repair education available. It includes four laboratories, each furnished with quality testing and diagnostic equipment. The program reinforces diagnostic and repair skills by working on customer vehicles.

There are also some classes available to non-majors on an elective basis. This will provide them with consumer level general automotive knowledge and preventive maintenance repair skills.

Special Costs: A lab fee of \$75 per semester covering coveralls, shop towels, and cleaning fee is required of all auto majors. The student is strongly encouraged to buy and use his/her own tools. They will need them for their internship and employment. Tool vendors will offer substantial discounts for student tool sets. It is not encouraged but the department has a limited number of modest tool kits available for rent. The deposit is \$50 per semester for the basic set of which \$25 is refundable upon return of the intact set. Students are required to replace lost tools.

Minimum GPA requirements: To qualify for graduation from the Automotive Program, students must achieve at least a 'C' grade in every class.

B.S. in Automotive Technology Management (410):

Students desiring to obtain a B.S. degree in Automotive Technology Management see the Business Management section of this catalog.

AAS in Automotive Technology- 346

GENERAL EDUCATION REQUIREMENTS		
sem/yr	plan	Reading and Writing:
<input type="checkbox"/>	<input type="checkbox"/>	Take 1, 3 Credit Course: ENG 111; 111C; 111H
sem/yr	plan	Mathematics
<input type="checkbox"/>	<input type="checkbox"/>	Take 1, 3 Credit Course: MATH 108; 108H
sem/yr	plan	Human Relations
<input type="checkbox"/>	<input type="checkbox"/>	Take this course: B 370
sem/yr	plan	Related Skills
<input type="checkbox"/>	<input type="checkbox"/>	Take this course: IS 140
sem/yr	plan	Religion
<input type="checkbox"/>	<input type="checkbox"/>	Take 2 credits - Rel 121; 121H AND Rel 122; 122H OR Rel 221
<input type="checkbox"/>	<input type="checkbox"/>	Take 3 credits - Rel 100; 130; 211; 211H; 215; 234; 235; 261; 264; 301; 301H; 302; 302H; 324; 324H; 333; 341; 341H; 342; 342H; 351; 352; 370; 431; 471; 475

Automotive

Brigham Young University-Idaho 2006-2007

MAJOR REQUIREMENTS

31 credits - take these courses:

sem/yr	plan	Course #	Credits	Course Title & Description
<input type="checkbox"/>	<input type="checkbox"/>	Auto 155	2	Steering, Suspension, and Brakes <i>Introduction to service procedures on current steering, suspension, and brake systems</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 155L	2	Steering, Suspension, and Brakes Lab <i>Lab portion of Auto 155</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 165	2	Automotive Drive Mechanisms <i>Introduction to the principle, diagnosis, and repair of drive mechanisms</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 165L	2	Automotive Drive Mechanisms Lab <i>Lab portion of Auto 165</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 221	2	Heating & Air Conditioning <i>Introduction to diagnosis and repair of all climate control systems</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 225	3	Automotive Electrical Systems <i>Introduction to basic automotive electrical systems including diagnosis, repair, and adjustment</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 225L	2	Specifications <i>Automotive Electrical Systems Lab</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 235	3	Engine Performance <i>Introduction to the operation, diagnosis, and service of engine features</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 235L	2	Engine Performance Lab <i>Lab portion of Auto 235</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 240	2	Automotive Alternate & Flexible Fuel Systems <i>Introduction on alternative fuels and how they are used in today's vehicles</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 250	5	Major Engine Repair <i>Introduction to engine operation with an emphasis on performing overhaul and rebuilding</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 265	5	Automatic Transmissions <i>Introduction to the theory of operation, diagnosis, and repair of common automatic transmissions</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 280	5	Computers, Diagnosis & Repair <i>Trigonometric function, triangle relationships, graphs, identities, etc</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 291	5	Certification <i>This class covers the basic information and procedures necessary to prepare to take the national ASE certification tests</i>
<input type="checkbox"/>	<input type="checkbox"/>	Auto 298	1	Internship <i>5 weeks of supervised on the job training totaling at least 200 hours</i>

Take 4 credits

sem/yr	plan	Course #	Credits	Course Title & Description
Take these courses				
<input type="checkbox"/>	<input type="checkbox"/>	Ph 101	3	Fundamentals of Physics <i>Principles of classical and modern physics as they relate to current concepts of the physical environment</i>
<input type="checkbox"/>	<input type="checkbox"/>	Ph 101L	1	Fundamentals of Physics Lab <i>Designed to provide students with experience in making and analyzing measurements of the physical environment at a fundamental level</i>
OR Take 1 Course				
<input type="checkbox"/>	<input type="checkbox"/>	Chem 100	4	Chemistry in the Modern World <i>A basic course on the modern applications of chemistry</i>
<input type="checkbox"/>	<input type="checkbox"/>	Chem 101	4	Introduction General Chemistry <i>Introduction to the basic concepts in general chemistry</i>

3 credits - take one course:

sem/yr	plan	Course #	Credits	Course Title & Description
<input type="checkbox"/>	<input type="checkbox"/>	ME 105	4	Essentials of Welding <i>An introduction in beginning welding designed to teach to fundamentals of welding</i>
<input type="checkbox"/>	<input type="checkbox"/>	ME 131	3	Manufacturing Processes, Materials, and Design <i>Integration of manufacturing and engineering design</i>

3 credits - take one option

sem/yr	plan	Course #	Credits	Course Title & Description
Option 1				
<input type="checkbox"/>	<input type="checkbox"/>	B 220	3	Business Communication <i>Introduction to business formatted documents, presentations, interviewing, dictating, etc.</i>
<input type="checkbox"/>	<input type="checkbox"/>	B 275	3	Business Law and the Legal Environment <i>Introduction to legal aspects of establishing and operating business</i>
<input type="checkbox"/>	<input type="checkbox"/>	B 283	3	Entrepreneurship Skills <i>Introduction to the major elements of entrepreneurship and small business management</i>

48 Major Credits

Course Descriptions**Credits*****AUTO 100 Basic Auto****(2:2:0)**

Prerequisite: If students have a basic understanding of cars, or have had high school automotive shop experience, they should register for a higher level class.

A basic consumer awareness and career exploration class for those wanting to know more about their car and the careers that are available in the automotive field. Information is through lectures and demonstrations. Owning a vehicle is not a requirement.
(Fall, Winter, and Summer)

**AUTO 118 Automotive Maintenance and Service II
(3:2:2)**

Fee: \$10

Prerequisite: Auto 100 or some automotive experience.

Vehicle light repair and maintenance with emphasis in electrical, brake and fuel systems. Students need to have an automobile, some basic tools, and some automotive experience. Course includes weekly lab assignments.
(Fall, Winter, and Summer)

AUTO 155 Steering, Suspension, and Brakes (2:2:0)

Fee: \$75.00

Prerequisite: Be an automotive major or have the instructor's consent.

A class oriented towards automotive majors that teaches service and repair procedures on the steering, suspension, and brake systems that are found on today's cars and light trucks. Students must also register for one section of Auto 155L.
(Fall)

**AUTO 155L Steering, Suspension, and Brakes Lab
(2:0:6)**

Prerequisite: Be automotive major or have instructor's consent.

Diagnosis and service of suspension, steering, brake systems, and vehicle wheel alignment of both cars and light trucks. This is the lab portion of Auto 155.
(Fall)

AUTO 165 Automotive Drive Mechanisms (2:2:0)

Prerequisite: Automotive major or consent of the instructor.

Principles and theory, diagnosis and repair of clutch mechanisms, manual transmissions and transaxles, transfer cases, drive shafts, and drive axles. Students must also register for an Auto 165L lab.
(Winter)

AUTO 165L Automotive Drive Mechanisms Lab(2:0:6)

Prerequisite: Automotive major or consent of instructor.

Practical experience with clutch mechanisms, manual transmissions and transaxles, transfer cases, drive shaft principles and theory, drive axle service, diagnosis, and repair. This is the lab portion of Auto 165.
(Winter)

AUTO 221 Heating & Air Conditioning (2:1:3)

Prerequisite: Automotive major or consent of instructor.

Wiring diagrams, vacuum circuits, climate control systems, air conditioning theory, and their computer controls diagnosis and repair of all related systems.
(Winter 2nd Block)

AUTO 225 Automotive Electrical Systems (3:6:0)

Prerequisite: Automotive Major or consent of instructor.

Basic electricity, automotive electrical circuits, starting systems, charging systems, accessory circuits, problem diagnosis, repair, and adjustment. Students must also register for an Auto 225L lab.
(Fall)

AUTO 225L Automotive Electrical Systems (2:0:6)

Prerequisite: Concurrent enrollment in Auto 225 is required.

Basic electricity, automotive electrical circuits, starting systems, charging systems, accessory circuits, problem diagnosis, repair, and adjustment.
(Fall Semester)

AUTO 235 Engine Performance (3:6:0)

Fee: \$75.00

Prerequisite: Automotive major or instructor's consent.

A class oriented towards automotive majors that teaches the operation, diagnosis and service of automobile and light truck ignition, fuel, and the design and service of emission systems. An introduction to computerized engine controls is an important portion of this class as well. Students must also register for Auto 235L.
(Winter)

AUTO 235L Engine Performance Lab (2:0:6)

Prerequisite: Be an automotive major or have the instructor's consent.

Perform diagnosis and service on vehicles in the area of: fuel, ignition, and emissions systems. How to access vehicle computer control information of each of the above listed systems. This is the lab portion of Auto 235.
(Winter)

**AUTO 240 Automotive Alternate & Flexible Fuel
Systems (2:3:5)**

Prerequisite: Successful completion of Auto 225 and Auto 235.

An introductory course on alternative fuels and how they are used in today's vehicles. Various alternative fuels will be compared. The theory of operation, system components, and safe handling of these fuels. Flex fuel vehicles theory of operation and components.
(Winter 1st Block)

AUTO 250 Major Engine Repair (5:4:8)

Fee: \$75.00

Prerequisite: Sophomore Automotive Majors only and successful completion of Auto 235 and Auto 235L.

An engine repair class oriented towards automotive majors.

Engine operation and the procedures for performing overhaul and rebuilding will be the emphasis. Determining which repairs are the most feasible and successful will be part of the curriculum.
(Fall)

AUTO 265 Automatic Transmissions (5:4:8)

Prerequisite: Successful completion of Auto 155, Auto 165, Auto 225, and Labs or instructor consent. Sophomore Automotive Majors only.

Theory of operation, diagnosis and repair of common automatic transmissions used in passenger cars and light trucks.
(Fall)

AUTO 280 Computers, Diagnostic & Repair (5:6:6)

Fee: \$75.00

Prerequisite: Successful completion of Auto 225, Auto 235 and Labs.

Emphasis on computer controlled systems. Advanced systems diagnosis of automotive systems covered; also repair or service recommendations concerning vehicle systems.
(Winter)

AUTO 290 Independent Study (1-3:0:0)

Prerequisite: Coordinated with Automotive department chairman in advance.

Special problems in Automotive skills. Credit and schedule arranged with Auto department chairman.
(Winter, Summer, and Fall)

AUTO 291 Certification (0.5:1:0)

Prerequisite: Students must be Automotive or Technology Management majors with an automotive emphasis. They should be sophomore level or higher.

This class covers the basic information and procedures necessary to prepare to take the national ASE certification tests. Students will discuss test methodology, as well as take practice certification tests.
(Fall, Winter)

AUTO 298 Internship (1:0:0)

Prerequisite: Automotive major.

Five consecutive weeks of supervised on-the-job training, totaling at least 200 hours. Required during interim summer of all 2-year majors. Conditions of internship are handled on an individual basis by department intern coordinator. This does not replace the 4-year Technology Management internship requirement.
(Winter, Summer, and Fall)