

# Automotive Department

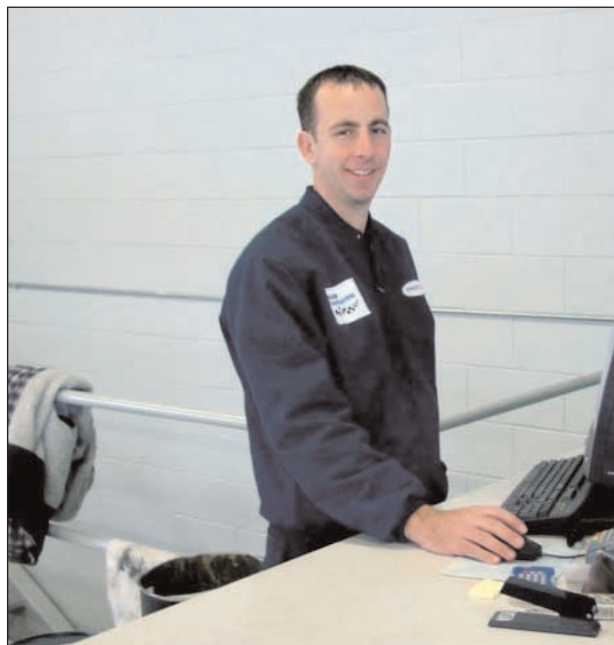


**Troy Spratling, Program Coordinator**

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*<http://www.byui.edu/Automotive/>*



The Automotive Department prepares students for a wide range of careers in a fast-growing, rapidly changing industry.

The demand for skilled, educated, and honest professionals continues to intensify as the complexity of the modern automobile increases. As a result, our graduates are highly sought after and well-compensated. Since every household and business in America is affected by the transportation industry, career opportunities are plentiful.

The Automotive Department offers two degree programs:

- B.S. in Automotive Technology, with a minor in Business Management (4 yr - #410)

This degree prepares graduates for career opportunities such as automotive service manager, fleet manager, service advisor, manufacturer representative, business owner or entrepreneur, and manufacturer service engineer.

- A.A.S. in Automotive Technology (2 yr - #346)

This degree prepares students for a career as an automotive technician or a related position.

**Automotive courses:** Department classes are “hands-on” and interactive. Much of the required course time is spent in labs, working on vehicles with real problems. BYU-Idaho’s automotive facility is well equipped with state-of-the-art equipment where students can experience the latest technology and leave well-prepared to begin a successful career.

**Business Management courses:** Along with the automotive technical courses, four-year students take business management courses that prepare them to compete in the automotive business world. These courses are taught by business professors. The combination of both technical and business skills presents graduates with numerous opportunities in the automotive industry.

**Internships** are required and allow students to gain industry experience as part of their training. They provide an opportunity to enhance the knowledge learned in the classroom.

**Elective courses:** The Automotive Department also offers elective classes to non-majors where they learn consumer awareness and basic automotive maintenance skills. These courses are open to all university students.

**Special costs:** A lab fee of \$75 per semester is required for automotive courses only. This fee provides coveralls, shop towels, and the cleaning of these items. Majors are expected to have at least a basic set of hand tools and a DVOM (digital volt/ohm meter).

**GPA requirements:** In order to qualify for graduation with either automotive degree, students must earn at least a ‘C’ grade or higher in all coursework.

## AAS in Automotive Technology

### Basic Education Requirements

I. Communication:	II. Computation:	III. Human Relations:	IV. Related Skills:	Religion Requirement:
<i>Take 1 Course</i>	<i>Take 1 Course</i>	<i>Take 1 Course</i>	<i>Take 1 Course</i>	<i>Take these courses</i>
ENG 111            3	MATH 108        3	B 370               3	CIT 140            3	REL 121            2
ENG 111C        3				REL 122            2
				<b>OR</b>
				<i>Take this course</i>
				REL 221            4
				<b>AND</b>
				<i>Take 3 Credits</i>
				REL 100            2
				REL 130            2
				REL 211            3
				REL 234            2
				REL 261            2
				REL 264            2
				REL 301            3
				REL 301H          3
				REL 302            3
				REL 302H          3
				REL 324            3
				REL 333            2
				REL 341            2
				REL 342            3
				REL 351            2
				REL 352            2
				REL 370            2
				REL 431            2
				REL 471            3
				REL 475            2

**Total GE Credits=19**

### Major Requirements

*No Double Counting of Major Courses*

<i>Take these courses:</i>	<i>Take 1 course:</i>	<i>Take these courses:</i>	
AUTO 155            2	ME 105            4	PH 101              3	
AUTO 155L        2	ME 131            3	PH 101L            1	
AUTO 165            2	3	4	
AUTO 165L        2		<b>OR</b>	
AUTO 221            2	<i>Take 1 course:</i>	<i>Take 1 course:</i>	
AUTO 225            3	B 220              3	CHEM 100           4	
AUTO 225L        2	B 275              3	CHEM 101           4	
AUTO 235            3	B 283              3	4	
AUTO 235L        2	3	<i>Optional course:</i>	
AUTO 250            5		AUTO 291            0.5	
AUTO 265            5		0.5	
AUTO 298            1			
AUTO 340            2			
AUTO 380            5			
38			

**Total Major Credits=48**

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Summer---- YES

Summer-Fall---- NO

## BS in Automotive Technology

### General Education Requirements

<b>I. Reading and Writing:</b> <i>Take 1 course:</i> ENG 111           3 ENG 111C        3  <b>AND</b> <i>Take 1 course:</i> ENG 312           3 ENG 312C        3 ENG 316           3 ENG 316C        3	<b>IV. Arts:</b> <i>Take 1 course:</i> ART 101           3 ART 160           3 ART 201           3 ART 202           3 HFED 140         3 HORT 230         3 HUM 101           3 HUM 201           3 HUM 202           3 MUSIC 100        3 MUSIC 101        3 TA 115            3 TA 117            3  <b>AND</b> <i>Take this course:</i> FA 100            0-1	<b>V. Letters</b> <i>Take 1 course:</i> CHIN 347          3 ENG 250           3 ENG 250H         3 ENG 251           3 ENG 331           3 ENG 332           3 ENG 333           3 ENG 334           3 ENG 335           3 ENG 351           3 ENG 352           3 ENG 353           3 ENG 354           3 ENG 362           3 ENG 373           3 FR 202            3 GER 202           3 LANG 202         3 PH 314            3 PHIL 110          3 PHIL 201          3 PHIL 202          3 PHIL 313          3 PHIL 314          3 PHIL 315          3 RUSS 340          3 SPAN 202          3 SPAN 302          3	<b>VI. Biological Science:</b> <i>Take 4 credits:</i> BIO 250            4  <b>VII. Physical Science:</b> <i>Take 4 credits:</i> CHEM 100          4 CHEM 101          4 PH 101             3 PH 101L           1  <b>VIII. American Institutions:</b> <i>Take 1 course:</i> AMHER 170         3 HIST 120           3 HIST 121           3 POLSC 110         3  <b>IX. Social Science:</b> <i>Take 1 course:</i> ECON 112           3	<b>Religion Requirement:</b> (Book of Mormon) <i>Take these courses:</i> REL 121           2 REL 122           2  <b>OR</b> <i>Take this course:</i> REL 221           4  <b>AND</b> (Scripture Based Courses) <i>Take 6 credits:</i> REL 211           3 REL 212           2 REL 301           3 REL 301H          3 REL 302           3 REL 302H          3 REL 324           3  <b>AND</b> (Other Religion Courses) <i>Take 4 credits:</i> REL 100           2 REL 130           2 REL 215           2 REL 234           2 REL 235           2 REL 261           2 REL 264           2 REL 333           2 REL 341           2 REL 342           3 REL 351           2 REL 352           2 REL 360           4 REL 370           2 REL 431           2 REL 471           3 REL 475           2
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**Total GE Credits=46**

### Major Requirements

*No Double Counting of Major Courses - No Grade Less Than C*

<i>Take these courses:</i> AUTO 155          2 AUTO 155L        2 AUTO 165          2 AUTO 165L        2 AUTO 221          2 AUTO 225          3 AUTO 225L        2 AUTO 235          3 AUTO 235L        2 AUTO 250          5 AUTO 265          5 AUTO 298          1 AUTO 340          2 AUTO 380          5 <hr style="width: 50px; margin-left: 0;"/> 38  <i>Optional course:</i> AUTO 291         0.5 <hr style="width: 50px; margin-left: 0;"/> 0.5	<i>Take these courses:</i> B 364             3 MATH 221         3 ACCTG 180        3 B 398             3 COMM 399         1 <hr style="width: 50px; margin-left: 0;"/> 13  <b>Apply to and take IBC Group courses:</b> <i>These courses may not be taken as stand alone courses. They must be taken as the 12 credit IBC course).</i> B 301             3 B 321             3 B 341             3 B 361             3 <hr style="width: 50px; margin-left: 0;"/> 12	<i>Take 1 course:</i> ME 105            4 ME 131            3 <hr style="width: 50px; margin-left: 0;"/> 3  <i>Take 3 credits:</i> B 220             3 B 275             3 B 283             3 <hr style="width: 50px; margin-left: 0;"/> 3	
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**Total Major Credits=69**

This major is available on the following tracks:

Fall-Winter---- YES

Winter-Summer---- YES

Summer-Fall---- NO

**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, 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, Summer)

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

Fee: \$75.00

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, Summer)

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

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, Summer)

**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.  
(Fall, Summer)

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

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, Summer)

**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, Summer)

**AUTO 235 Engine Performance****(3:6:0)**

Fee: \$75.00

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)**

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

Fee: \$75.00

Prerequisite: Sophomore Automotive Majors only and successful completion of Auto 165, Auto 165L, 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.  
(Winter)

**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.

(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.

(Fall, Winter, Summer)

**AUTO 291 Certification****(0.5:1:0)**

Prerequisite: Students should be Automotive Technology majors with an automotive emphasis.

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.

(Fall, Winter, Summer)

**AUTO 340 Automotive Alternate & Flexible Fuel Systems****(2:2:3)**

Prerequisites: Successful completion of Auto 225, 225L and 235, 235L.

This course discusses the newest information of today's fuels and alternative power sources. Hybrid systems and alternate fuels such as ethanol, methanol, diesel, bio-fuel, will be the focus of the class. System comparisons, operation of these systems and how they impact the transportation industry will be explored as well.

(Winter)

**AUTO 380 Computer Diagnosis and Repair**

**(5:6:6)**

Prerequisites: Successful completion of Auto 225, 225L and 235, 235L.

This is an advanced automotive engine performance course. A review of ignition, fuel and emissions systems is one component of this class. This will be necessary so students can more effectively utilize the oscilloscopes, scan tools, and other diagnostic equipment that was introduced in Auto 235. Another focus of the class will be how vehicle computer power train management systems operate, how their logic and adaptive memories function and the diagnostic practices that are used today to repair such systems.

(Fall, Summer)