

Certificate: Auto Services Technology**Certificate Description:**

This certificate provides students with marketable skills in automotive operation, maintenance, and diagnosis and repair to be taken to the workplace or applied to an automotive degree. This certificate is developed and granted by BYU-Idaho.

Course Code	Course Name	13 Credits
AUTO 125	Introduction to Automotive Technology	1 Credit
AUTO 131	Electrical Systems	2 Credits
AUTO 132	Engine Performance	2 Credits
AUTO 155	Chassis Systems	2 Credits
AUTO 201	Drive Trains	2 Credits
AUTO 231	Vehicle Electronics	2 Credits
AUTO 232	Engine Management Systems	2 Credits

Course Descriptions:***AUTO 125 (1 credit) – Introduction to Automotive Technology***

This is an online course that is required for all automotive majors but is open to students of other majors. It is designed to introduce students to some of the foundational principles and knowledge required to be successful in other automotive courses.

AUTO 131 (2 credits) – Electrical Systems

This course is an introduction to basic electrical principles and systems. Students will learn how to use test equipment to diagnose and repair electrical circuit faults. They will also study batteries, starting systems, and charging systems.

AUTO 132 (2 credits) – Engine Performance

This course will introduce students to internal combustion engines and the systems that support them. Students will learn to perform engine condition tests and how to evaluate, diagnose, and repair issues with the fuel, ignition, cooling, and lubrications systems.

AUTO 155 (2 credits) – Chassis Systems

In this course, students will learn the theory of operation, diagnosis, service, and repair procedures of automotive chassis (steering, suspension, and braking) systems.

AUTO 201 (2 credits) – Drive Trains

This is a course that focuses on theories of operation, diagnosis, repair, and maintenance of automotive drive train systems. Students will learn about and gain experience with manual transmissions/transaxles, clutch assemblies, differential axles, drive shafts/u-joints, and four-wheel drive and all-wheel drive systems.

AUTO 231 (2 credits) – Vehicle Electronics

In this course, students will learn how computer controls affect the operation of the electrical systems in modern automobiles. They will learn how various sensors, actuators, and electronic control units work. They will learn about network communications between the components. Students will be able to test, diagnose, and repair the various electrical systems, ranging from power windows and heated seats to instrument clusters and driver information systems.

AUTO 232 (2 credits) – Engine Management Systems

In this course, students will become familiar with how sensors, actuators, and electronic control units work together to optimize engine performance. They will learn how to use scan tools to become more proficient at testing and diagnosing faults. Students will also reinforce engine condition testing and understanding of fuel, ignition, cooling, and lubrication systems.

Outcomes:

- Demonstrate an understanding of the operation of automotive systems and components.
- Apply logical processes to diagnose mechanical and electrical faults.
- Use correct procedures for quality repair and maintenance.
- Demonstrate professionalism and integrity on teams.
- Show proficiency with professional certification exams.

Potential Employment:

- Automobile Repair Technician
- Service Advisor