

# AUTOMOTIVE SERVICE TECHNICIAN (ASTA)

This is a list of the Automotive Service Technician (ASTA) courses available at KPU.

## **ASTA 1100** **3 Credits**

### **Safety, Communication, Tools and Fasteners**

Students will learn to operate safely in the automotive shop environment and will learn the proper use of hand tools and fastening devices. They will use precision measurement tools, will take measurements, and will make mathematical calculations relating to the automotive industry. Students will also learn to communicate using automotive industry terminology.

## **ASTA 1110** **1.5 Credits**

### **General Automotive Services, Practices and Maintenance**

Students will learn to safely service and maintain the modern automobile, selecting the proper fluids and lubricants. They will learn to assess and repair leaks while servicing and replacing gaskets, seals and hoses.

*Prerequisites: ASTA 1100*

## **ASTA 1120** **6.5 Credits**

### **Electrical Fundamentals, Diagnosis and Repair**

Students in classroom and shop will learn to solve problems related to automotive electrical systems. They will apply scientific principles to explain the fundamentals of magnetism. Students will service, test and diagnose problems related to batteries and will be able to test and repair simple electrical circuits. Students will also learn to explain the operation of starter motors and AC generators as well as test and diagnose them.

*Prerequisites: ASTA 1110*

## **ASTA 1130** **6.5 Credits**

### **Steering, Frames, Suspension and Wheel Alignment**

Students will learn to identify various types of frame, suspension, and steering systems. They will use the correct procedures for diagnosing and repairing the different types of steering and suspension systems. Students will also learn to perform wheel alignments.

*Prerequisites: ASTA 1120*

## **ASTA 1140** **5 Credits**

### **Automotive Braking Systems**

Students will learn the scientific principles of the brake system. They will learn to service and repair the hydraulic systems components on both drum and disc brake systems. Students will master brake system diagnosis, service and repair, as well as learn the principles and service of antilock braking systems.

*Prerequisites: ASTA 1130*

## **ASTA 1150** **1 Credits**

### **Welding**

Students will learn welding safety and the basic operation of oxy-fuel cutting and welding procedures on mild steel plate, light tubing, and 14/18 gauge sheet metal. They will also learn metal inert gas (MIG) welding procedures and applications. Students will demonstrate these three processes through a number of shop projects.

*Prerequisites: ASTA 1140*

## **ASTA 1160** **1.5 Credits**

### **The Internal Combustion Engine**

Students will learn the operation of the internal combustion engine. They will learn the theory of engine blocks and their related components as well as crankshafts, friction bearings, pistons, piston rings and connecting rods. They will also learn the theory of cylinder head and camshaft design and operation.

*Prerequisites: ASTA 1150*

## **ASTA 1170** **2.5 Credits**

### **Power Train Fundamentals**

Students will learn to diagnose, service and repair drivelines, universal joints and constant velocity joints. They will learn to diagnose and repair standard transmissions, clutches and their related components, and will learn the operation and service of automatic transmissions and transaxles. Students will also learn to diagnose, service and repair the automotive differential.

*Prerequisites: ASTA 1160*

## **ASTA 1180** **5 Credits**

### **Engine Management and Control Systems**

Students will learn to diagnose, service and repair automotive fuel delivery and ignition systems, from carburetion to fuel injection, and ignition systems from contact points to direct ignition systems. Students will also learn to test and repair emission control devices.

*Prerequisites: ASTA 1170*