

**Drivetrain Specialist**

SUBJECT & NO.	COURSE	UNITS
AUTOMO 111	Engine Repair and Rebuilding.....	5
AUTOMO 201*	Automatic Transmission and Transaxle .....	5
AUTOMO 301*	Manual Drive Train Axles.....	5
<b>Total .....</b>		<b>15</b>

\*This course has a corequisite.

**Engine Performance and Drivability**

SUBJECT & NO.	COURSE	UNITS
AUTOMO 111	Engine Repair and Rebuilding.....	5
AUTOMO 601*	Automobile Electrical/Electronic Systems.....	5
AUTOMO 801*	Advanced Engine Performance .....	5
<b>Total .....</b>		<b>15</b>

\*This course has a corequisite.

**ASSOCIATE DEGREE PROGRAM**

**Automobile Technology**

**ASSOCIATE IN SCIENCE DEGREE**

SUBJECT & NO.	COURSE	UNITS
AUTOMO 101	Introduction to Automobile Technology.....	4
AUTOMO 111	Engine Repair and Rebuilding.....	5
AUTOMO 201*	Automatic Transmission and Transaxle .....	5
AUTOMO 301*	Manual Drive Train Axles.....	5
AUTOMO 401*	Suspension, Steering and Wheel Alignment.....	5
AUTOMO 501*	Automobile Braking Systems .....	5
AUTOMO 601*	Automobile Electrical/Electronic Systems.....	5
AUTOMO 701*	Automobile Heating and Air Conditioning .....	5
AUTOMO 801*	Advanced Engine Performance .....	5
<b>ELECTIVES - SELECT AT LEAST 2 UNITS FROM THIS LIST</b>		
AUTOMO 115	Automobile Repair Work Experience.....	2
AUTOMO 185	Directed Studies .....	1
AUTOMO 285	Directed Studies .....	2
AUTOMO 385	Directed Studies .....	3
<b>GENERAL EDUCATION REQUIREMENTS PLAN B</b>		<b>18</b>
<b>Total. ....</b>		<b>64</b>

\*This course has a corequisite.

**SUBJECTS & COURSE DESCRIPTIONS**

**Automobile Technology (AUTOMO)**

**101 Introduction to Automobile Technology (4) CSU**

LECTURE, 3 HOURS; LABORATORY, 3 HOURS.

This course is designed to introduce fundamental operation of an automobile and its systems to students with little or no automotive knowledge. Discussion, demonstration and hands on exercises are used throughout the course to facilitate the overall understanding of how a vehicle operates. Students acquire a basic understanding of automotive systems as well as develop essential skills to continue in the automobile technology program..

**111 Engine Repair and Rebuilding (5) CSU**

*Prerequisite: Automobile Technology 101.*

LECTURE, 3.5 HOURS; LABORATORY, 3.5 HOURS.

This course presents the basic principles of operation, nomenclature, and repair of the internal combustion engine. This course

emphasizes problem solving skills as they apply to diagnosing engine mechanical problems. Topics include engine design, cylinder block assembly, cylinder head and valve train, lubrication system, cooling system, servicing the engine block, servicing the cylinder head, piston and ring service, gaskets, seals, and engine problem diagnosis.

**115 Automobile Repair Work Experience (2) CSU**

*Prerequisite: Automobile Technology 101.*

LABORATORY, 6 HOURS.

This course provides a repair facility atmosphere for students wanting to expand and fine-tune their automotive work skills. Students are assigned actual customer vehicles, thus simulating real work experience at an automobile repair facility.

**201 Automatic Transmission and Transaxle (5) CSU**

*Prerequisite: Automobile Technology 101.*

LECTURE, 3 HOURS; LABORATORY, 4 HOURS.

The course is designed to provide the student with the basic skills necessary to diagnose drive train and automatic transmission malfunctions. The topics presented include the construction, operation, maintenance, and adjustment of automatic transmission and drive train components as well as use of special tools. Students work in a laboratory environment where they are required to overhaul automatic transmissions, both front and rear wheel drive.

**301 Manual Drive Train Axles (5) CSU**

*Prerequisite: Automobile Technology 101.*

LECTURE, 3 HOURS; LABORATORY, 4 HOURS.

This course presents the theory and skills needed to diagnose and repair manual transmissions, transaxles, and drive-line components. Topics include: Clutches, drive-lines, half-shafts, transmissions, differentials, transfer cases, and related four-wheel-drive systems. Theory and hands-on experiences are utilized and at least one rear wheel drive and one front wheel drive transmission are disassembled, inspected, and reassembled.

**401 Suspension, Steering, and Wheel Alignment (5) CSU**

*Prerequisite: Automobile Technology 101.*

LECTURE, 3 HOURS; LABORATORY, 4 HOURS.

This course presents the theory and skills needed to diagnose and repair worn suspension components, steering components, drive axles, CV joints, and power steering components. Wheel alignment and wheel balancing on the latest computerized equipment is practiced. Upon successful completion of this course, students learn the theory and acquire the skills needed to pass the ASE examination.

**501 Automobile Braking Systems (5) CSU**

*Corequisite: Automobile Technology 101.*

LECTURE, 3 HOURS; LABORATORY, 4 HOURS.

This course studies theory, operation, inspection, repair and diagnosis of the modern automotive brake system. Extensive hands-on training includes replacing worn components, turning drums and rotors, bleeding and adjusting brakes, and the diagnosis and repair of anti-lock brake system. Upon successful completion of this course, students will be able to perform a complete brake job, and they will have to pass the Automotive Service Excellence (ASE) Brake Examination.



**601 Automobile Electrical/Electronic Systems** (5) CSU

*Prerequisite: Automobile Technology 101.*

LECTURE, 3 HOURS; LABORATORY, 4 HOURS.

This course presents the theory and skills needed to diagnose, troubleshoot and repair automobile electrical, electronic and computer control systems. Topics include: Electrical system principles, fundamentals of electronics, circuit diagrams, electrical and electronic test equipment, cranking and charging systems, lighting motors, audio, sensors, supplemental restraint systems (SRS), accessories, ignition, computer-controlled actuators and hybrid electronics.

**701 Automobile Heating and Air Conditioning** (5) CSU

*Prerequisite: Automobile Technology 101.*

LECTURE, 3.5 HOURS; LABORATORY, 3.5 HOURS.

This course is designed to provide instruction in the operation and repair of the modern automotive heating and air conditioning systems. With modern equipment students get hands-on experience testing, servicing, and repairing the automotive heating and air conditioning system as well as converting R-12 systems to R-134a. In addition, the Mobile Air Conditioning Society (MACS) license exam is covered and the test administered during this class.

**801 Advanced Engine Performance** (5) CSU

*Prerequisite: Automobile Technology 101.*

LECTURE, 3 HOURS; LABORATORY, 4 HOURS.

This course presents the theory and operation of engine performance control systems. Students interpret, verify, and perform engine diagnosis of fuel, fuel injection, ignition, cooling, electronic, electrical, and emission control systems and devices using the industry's latest text, tools, and test equipment such as: Digital multimeters, oscilloscopes, gauges, and gas analyzers.

**185 Directed Study - Automobile Technology** (1) CSU

**285 Directed Study - Automobile Technology** (2) CSU

**385 Directed Study - Automobile Technology** (3) CSU

CONFERENCE 1 HOUR PER WEEK PER UNIT.

The above courses allow students to pursue Directed Study in Automobile Technology on a contract basis under the direction of a supervising instructor.

CREDIT LIMIT: A MAXIMUM OF 6 UNITS IN DIRECTED STUDY MAY BE TAKEN FOR CREDIT.

**931 Cooperative Education - Automobile Technology** (3) CSU

*Note: Requires 15 to 19 hours per week; paid employment related to the occupational major and enrollment in at least 7 units (which include Co-op Ed).*

This course offers advanced supervised training in an employment area that enhances the student's educational goals.

**941 Cooperative Education - Automobile Technology** (4) CSU

*Note: Requires 20 hours per week; paid employment related to the occupational major and enrollment in at least 7 units (which include Co-op Ed).*

This course offers advanced supervised training in an employment area that enhances the student's educational goals.