

# **MOPAR CAP PROGRAM**

## **FIRST SEMESTER**

### **Automotive Service Fundamentals AUMC 1103** (3 Theory/Lab Credit Hour)

Automotive Service Fundamentals prepares the MOPAR CAP student to understand and develop skills necessary to diagnose and repair Chrysler built vehicles. Areas of instruction include: Safety, Hand and Power Tools, Special Equipment, Fastening Devices, Service Information, Semi and Precision Measuring, Scan Tools, New Vehicle Preparation, Basic Electrical Measurements, Diagnosis of Electrical Circuits, Light Vehicle Maintenance and Application of the Chrysler Six-Step Diagnostic Process. Theory/Lab.

### **STEERING AND SUSPENSION SYSTEM 1163** (3 Theory/Lab Credit Hour)

Steering and Suspension provides the MOPAR CAP student with a theoretical understanding of basic Steering and Suspension geometry and principles; instills practical skills needed to identify, diagnose, adjust, align, remove, and repair components of the steering and suspension systems. . This course provides specific diagnostic methods used to troubleshoot steering and suspension systems including wheel and tire wear concerns, as well as root causes of vehicle noise, vibration, and harshness (NVH) concerns. Emphasis is placed on service procedures, using service information, special tools and equipment for diagnosis and repair. Theory/Lab.

### **INTERNSHIP I AUMC 1215** (5 Lab Credit Hours)

This internship is a cooperative agreement between industry sponsors and the university which allows students to utilize and refine the skills previously learned in their educational process. All work is to be performed in accordance with dealer/industry standards and guidelines. The internship is supervised by industry and school representatives. Lab. Prerequisites; Students must be in good academic standing

---

---

## SECOND SEMESTER

### **AUTOMOTIVE ELECTRONIC SYSTEMS I AUMC 1243**

(3 Theory/Lab Credit

Hour)

Automotive Electronic Systems I provides the Mopar CAP student with the theory and application of advanced auto electricity, which covers the theory, testing, diagnosis and repair of body electrical systems. Emphasis for this course is placed on current controller area network (CAN) bus vehicles. Service information and special tools are emphasized to help in electronic systems diagnosis and repairs. Circuit architecture, power supply methods, communications, bus architecture, power distribution, passive restraints and electronic sub-systems will be covered in this course. Theory/Lab.

### **AUTOMOTIVE ELECTRONIC SYSTEMS II AUMC 1263**

(3 Theory/Lab Credit

Hour)

Automotive Electronic Systems II provides the Mopar CAP student with the theory and application of advanced auto electricity, which covers the identification, function, operation, and repair of power accessories which includes the service of power sliding doors, lift gates, power windows, locking assemblies, cruise control, interior/exterior lighting, audio systems and related power accessories. Emphasis on hybrid vehicle high voltage safety, starting/charging systems, and batteries are discussed with this course. Activities focus on system diagnosis and failure analysis including the proper use of service information, electrical meters, scopes, precision measurement devices and other specialized equipment. Safety is stressed Theory/Lab.

### **INTERNSHIP II AUMC 1305**

(5 Lab Credit Hours)

This internship is a cooperative agreement between industry sponsors and the university which allows students to utilize and refine the skills previously learned in their educational process. All work is to be performed in accordance with dealer/industry standards and guidelines. The internship is supervised by industry and school representatives. Lab. Prerequisites; Students must be in good academic standing

---

## **THIRD SEMESTER**

### **BRAKE SYSTEMS      AUMC      1203      (3 Theory/Lab Credit Hour)**

Brake Systems provides the MOPAR CAP student with the theory of basic brake operation and hydraulic principles. Students will gain knowledge on the proper use of service information, special tools, and brake service equipment. Practical applications in diagnosis, adjustment, removal, and repair of brake components. Emphasis on how to use a systematic approach to diagnose and repair the root cause of vehicle base brake hardware, brake hydraulics, electronic Anti-lock brake systems, traction control systems, and vehicle stabilization control systems. Theory/Lab.

### **HEATING AND AIR CONDITIONING SYSTEMS AUMC 2413 (3 Theory/Lab Credit Hour)**

Heating and Air Conditioning Systems provides the Mopar Cap student with the theory and application of heating & air conditioning systems found on FCA automobiles and light trucks. Principles of refrigeration, air flow, heating and various climate control component operations are also covered. The inspection, testing, servicing and diagnosis of climate control system components, as well as automatic temperature control systems are emphasized. Safety is stressed. Theory/Lab.

### **INTERNSHIP III 2405      (5 Lab Credit Hours)**

This internship is a cooperative agreement between industry sponsors and the university which allows students to utilize and refine the skills previously learned in their educational process. All work is to be performed in accordance with dealer/industry standards and guidelines. The internship is supervised by industry and school representatives. Lab. Prerequisites; Students must be in good academic standing.

---

## **FOURTH SEMESTER**

### **ADVANCED AUTOMOTIVE DRIVELINES I AUMC 1303** (3 Theory/Lab Credit Hours)

This course prepares Mopar CAP students by giving them the skills needed to diagnose, adjust, remove and repair components of advanced or updated driveline components found on automobiles. Components include automatic transmissions/transaxles, manual transmissions/transaxles, differentials, all-wheel (AWD) and four (4) wheel drive components. This course includes a focus on how to use a systematic approach to diagnose and repair the root cause of driveline failures. Service information procedures and the use of special tools are emphasized to help in the diagnosis and repair of advanced automotive drivelines. Theory/Lab.

### **ADVANCED AUTOMOTIVE DRIVELINES II AUMC 1323** (3 Theory/Lab Credit Hours)

This course prepares Mopar CAP students by giving them the skills needed to diagnose, adjust, remove and repair components of advanced or updated driveline components found on FCA automobiles. Components include automatic transmissions/transaxles, manual transmissions/transaxles, differentials, all-wheel (AWD) and four (4) wheel drive components. This course includes interactive diagnosis, disassembly, component inspection, failure analysis, sub-assembly testing and unit reassembly. Strong emphasis is placed on scan tool and data recording usage to diagnose the operation and faults on computer controlled units. Shop safety is stressed. Theory/Lab.

### **INTERNSHIP IV AUMC 2505** (5 Lab Credit Hours)

This internship is a cooperative agreement between industry sponsors and the university which allows students to utilize and refine the skills previously learned in their educational process. All work is to be performed in accordance with dealer/industry standards and guidelines. The internship is supervised by industry and school representatives. Lab. Prerequisites; Students must be in good academic standing.

---

## **FIFTH SEMESTER**

### **ENGINES SYSTEMS THEORY & OPERATION AUMC 2543** (3 Theory/Lab Credit Hours)

Engines Systems Theory & Operation provides the MOPAR CAP student with the theory, demonstration and application of engine repair procedures according to the manufacturer specifications, which includes disassembly, cleaning, inspection, measurement, service and reassembly. Emphasis is given to system diagnosis and failure analysis and includes the proper use of hand tools, precision measurement devices and other specialized equipment. Safety is stressed. Theory/Lab.

### **ENGINE PERFORMANCE THEORY & OPERATION AUMC 2503** (3 Theory/Lab Credit Hour)

Engine Performance Theory & Operation provides the MOPAR CAP student with the theory, demonstration and application of FCA ignition systems, electronic fuel injection and emission control systems. It includes the use of service information, scan tools, advanced use of lab scopes and specialized testing equipment. Emphasis is placed on diagnosis, failure analysis and service of components including, fuel delivery, fuel Injection, emission control devices and sub-systems that control engine, fuel, and exhaust components according to manufacturer specifications. Safety is stressed. Theory/Lab.

### **INTERNSHIP V AUMC 2605** (5 Lab Credit Hours)

This internship is a cooperative agreement between industry sponsors and the university which allows students to utilize and refine the skills previously learned in their educational process. All work is to be performed in accordance with dealer/industry standards and guidelines. The internship is supervised by industry and school representatives. Lab. Prerequisites; Students must be in good academic standing.

---

---

## SIXTH SEMESTER

### **MOPAR CAPSTONE                      AUMC      2613                      (3 Theory/Lab Credit Hours)**

MOPAR Capstone is designed to allow students to utilize and refine skills previously learned in their educational process. Included are the diagnosis and servicing of electronically controlled systems found on today's vehicles, as well as the proper use of special tools and information used to make repairs to industry standards. Includes discussion of student goals and duties specific to the industry, and specific competencies demonstrated during the course. Students complete update courses and exit assessments. Theory/Lab.

### **DIESEL ENGINE & FUEL INJECTION SYSTEMS      AUMC 2603      (3 Theory/Lab Credit Hours)**

Diesel Engine & Fuel Injection systems provide the MOPAR CAP student with the knowledge and skills necessary to diagnose and service current FCA diesel engine and fuel related performance concerns. The primary focus for this course is for diagnosing diesel internal engine and cylinder head failures and diesel fuel delivery systems including fuel injectors, fuel pumps, pump timing, computer and related electrical systems. Emphasis is placed on the use of service information, diagnostic flow charts and specific diagnostic procedures to evaluate engine condition and performance. Safety is stressed. Theory/Lab.