AUTOMOTIVE TECHNOLOGY IN ELECTRONICS AND DIAGNOSTICS - ASSOCIATE OF APPLIED SCIENCE (AAS)

Description

The Associate of Applied Science in Automotive Technology in Electronics and Diagnostics prepares students to enter the field of electric and hybrid vehicle service. Coursework includes technical skills in computer applications, electrical, electronic, mechanical, hydraulic and network systems. Students will learn theory as well as application and will use the latest equipment to diagnose and repair alternative fuel vehicles.

Program Learning Outcomes

Upon successful completion of the degree, students will be able to:

1. Communication: Demonstrate oral and written strategies for directing automotive employees to perform duties correctly and to communicate with managerial staff members clearly.
2. Certification: Substantiate knowledge of up-to-date automotive and service industry practices by successfully preparing for NATEF and Master Automotive Service Excellence certification (levels Al-A8 from Engine Repair to Engine Performance).
3. Preparation: Apply and maintain current skills in vehicle electrification systems diagnostics, including extensive computer networking that includes automatic highway braking, driverless vehicles, LAN radar, and automatic parking.
4. Professionalism: Model professional practices of the automotive industry and the needs of a service environment by demonstrating team attitude, displaying management behavior in regard to tasks, by behavior specific to management tasks related to the concern, and by keeping an orderly, task-based mindset of learned processes document.
5. Diagnose and Analyze Specialized Areas: Demonstrate how to use defined procedures to accurately assess problem solving in vehicle application issues, in personnel behaviors, and in addressing clients concerns in a manner that is most likely to lead to a successful outcome.
6. Advanced Vehicle Training: Demonstrate skills in electric drive vehicle systems by building competency in hybrid and electric vehicles, reprogramming and custom programming vehicle control systems, and application of clean diesel practices.

Entrance Requirements

Required:

- Students must complete the following five courses before enrolling in other AUT courses: AUT 101 Basic Electricity for Automotive, AUT 106 Automotive Program Orientation, AUT 107 Mechanical Systems I, AUT 110 Small Gas Engines, and AUT 115 College Success for Automotive Technology
- Students must complete driving history verifications with COCC Campus Services Department during Automotive Program Orientation AUT 106.
- Students must currently possess and maintain a valid Class C driver's license while enrolled in Automotive Programs except (AUT 101, AUT 107, AUT 110, AUT 115, and MFG 103 may be taken without a driver's license or driving history check)

Recommended:

- High school diploma or GED

ADDITIONAL COSTS (BEYOND STANDARD TUITION/FEES AND TEXTBOOKS)

Material costs

- Automotive Service Excellence certification: up to $450 total for all eight areas of testing
- Tools: $1,500 to $2,500
- Materials (coveralls, safety glasses, work jacket, safety shoes, t-shirts): $200

Enrollment fees

- All AUT courses AUT 260 Diesel Performance II and higher: $200 course fee
- All AUT courses lower than AUT 260 Diesel Performance II: $15 course fee

Course Requirements

Course	Title	Credits
Core Courses		
AUT 101	Basic Electricity for Automotive	2
AUT 102	Automotive Electric I	4
AUT 103	Automotive Electric II	2
AUT 104	Automotive Electric III	2
AUT 105	Diesel Performance I	2
AUT 106	Automotive Program Orientation	1
AUT 107	Mechanical Systems I	3
AUT 110	Small Gas Engines	3
AUT 111	Computerized Engine Controls	5
AUT 115	College Success for Automotive Technology	2
AUT 201	Automotive Engines	4
AUT 202	Manual Drive Trains I	3
AUT 203	Manual Drive Trains II	3
AUT 204	Steering and Suspension	3
AUT 205	Engine Performance I	2
AUT 206	Engine Performance II	2
AUT 208	Automotive Brakes	3
AUT 251	Automatic Transmissions - Rebuild	3
AUT 253	Automotive Air Conditioning	3
AUT 256	Automatic Transmissions Theory	2
AUT 260	Diesel Performance II	4
AUT 270	Automotive Controller Systems I	4
AUT 271	Automotive Controller Systems II	4
AUT 279	Hybrid Electric Vehicles I	4
AUT 280A	Co-op Work Experience Automotive: A [1]	4
AUT 280B	Co-op Work Experience Automotive: B [1]	4

AUT 281	Hybrid Electric Vehicles II	4
Other Required Courses		
BA 178	Customer Service	3
BA 214	Business Communications	3-4
or WR 121Z	Composition I	
CIS 120	Computer Concepts (or Computer Competency Test)	0-4
CIS 131	Software Applications	4
MTH 102	Applied Technical Mathematics	4
Total Credits		**96-101**

[1] Automotive CWE may be taken after 24 credits of automotive courses in addition to the basic skills courses, including summer. Students may not enroll in CWE without first being cleared by an instructor. Exceptions are based on individual student goals.

Advising Notes

Students must complete the following five courses prior to proceeding into other AUT courses: AUT 101 Basic Electricity for Automotive, AUT 106 Automotive Program Orientation, AUT 107 Mechanical Systems I, AUT 110 Small Gas Engines, and AUT 115 College Success for Automotive Technology.

Full-time students are recommended to avoid working more than 15 hours per week due to a heavy course load. It is recommended that the Automotive Service Excellence certification test be taken as the student completes the program.

Performance Standards

- Academic Requirements:
  - Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.
  - All courses in the program must be completed with a grade of C or higher.

Sample Plan

First Year

Fall		Credits
AUT 101	Basic Electricity for Automotive	2
AUT 106	Automotive Program Orientation	1
AUT 107	Mechanical Systems I	3
AUT 110	Small Gas Engines	3
AUT 115	College Success for Automotive Technology	2
CIS 120	Computer Concepts	0-4
MTH 102	Applied Technical Mathematics	4
	Credits	**15-19**
Winter		
AUT 102	Automotive Electric I	4
AUT 103	Automotive Electric II	2
AUT 205	Engine Performance I	2

BA 214	Business Communications	3-4
or WR 121Z	or Composition I	
	Credits	**11-12**
Spring		
AUT 104	Automotive Electric III	2
AUT 111	Computerized Engine Controls	5
AUT 202	Manual Drive Trains I	3
AUT 206	Engine Performance II	2
AUT 253	Automotive Air Conditioning	3
CIS 131	Software Applications	4
	Credits	**19**
Summer		
AUT 280A	Co-op Work Experience Automotive: A	4
	Credits	**4**
Second Year		
Fall		
AUT 105	Diesel Performance I	2
AUT 201	Automotive Engines	4
AUT 208	Automotive Brakes	3
AUT 270	Automotive Controller Systems I	4
AUT 279	Hybrid Electric Vehicles I	4
	Credits	**17**
Winter		
AUT 203	Manual Drive Trains II	3
AUT 251	Automatic Transmissions - Rebuild	3
AUT 256	Automatic Transmissions Theory	2
AUT 281	Hybrid Electric Vehicles II	4
BA 178	Customer Service	3
	Credits	**15**
Spring		
AUT 204	Steering and Suspension	3
AUT 260	Diesel Performance II	4
AUT 271	Automotive Controller Systems II	4
AUT 280B	Co-op Work Experience Automotive: B	4
	Credits	**15**
	Total Credits	**96-101**