CENTRAL CAROLINA COMMUNITY COLLEGE

Applied Technologies

Program Planning Guide

Automotive Systems Technology Certificate (C60160)

Program Length: 2 semesters
Program Sites: Lee Main Campus - Day Program
Career Pathway Options: Associate in Applied Science Degree in Automotive Systems Technology; Diploma in Automotive Systems Technology, Certificate in Automotive Systems

Suggested Course Schedule		Class	Lab	Work	Credits	Notes:
1st Semester (fall)						
AUT 151	Brake Systems	2	3	0	3	
AUT 151A	Brake Systems Lab	0	3	0	1	
TRN 120	Basic Transp Electricity	4	3	0	5	
	Total Semester Hours	**6**	**9**	**0**	**9**	
2nd Semester (spring)						
AUT 163	Adv Auto Electricity	2	3	0	3	
AUT 163A	Adv Auto Electricity Lab	0	3	0	1	
AUT 181	Engine Performance I	2	3	0	3	
AUT 181A	Engine Performance I Lab	0	3	0	1	
	Total Semester Hours	**4**	**12**	**0**	**8**	
Total Semester Credit Hours Required for Graduation: 17						

Effective Term: 2023Fall

Course Descriptions

AUT 151 Brake Systems
This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

AUT 151A Brakes Systems Lab
Corequisite: Take AUT 151
This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include drum and disc brakes involving hydraulic, vacuum-boost, hydra-boost, electrically powered boost, and anti-lock, parking brake systems and emerging brake systems technologies. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

AUT 163 Adv Auto Electricity
Prerequisite: Take TRN 120
This course covers electronic theory, wiring diagrams, test equipment, and diagnosis, repair, and replacement of electronics, lighting, gauges, horn, wiper, accessories, and body modules. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, and troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns.

AUT 163A Adv Auto Electricity Lab
Corequisite: Take AUT 163
This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, troubleshooting and emerging electrical/electronic systems technologies. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns.

AUT 181 Engine Performance I
This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to vehicles equipped with complex engine control systems. Topics include an overview of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices. Upon completion, students should be able to describe operation and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information.

AUT 181A Engine Performance I Lab
Corequisite: Take AUT 181
This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include overviews of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices and emerging engine performance technologies. Upon completion, students should be able to describe operation and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information.

TRN 120 Basic Transp Electricity
This course covers basic electrical theory, wiring diagrams, test equipment, and diagnosis, repair and replacement of batteries, starters, and alternators. Topics include Ohm's Law, circuit construction, wiring diagrams, circuit testing, and basic troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair basic wiring, battery, starting, charging, and electrical concerns.