

# TRANSPORTATION TECHNOLOGIES

## AUTOMOTIVE SYSTEMS TECHNOLOGY

### Automotive Systems Technology Degree - A60160

The Automotive Systems Technology curriculum prepares individuals for employment as automotive service technicians. It provides an introduction to automotive careers and increases student awareness of the challenges associated with this fast and ever-changing field.

Classroom and lab experiences integrate technical and academic coursework. Emphasis is placed on theory, servicing and operation of brakes, electrical/electronic systems, engine performance, steering/suspension, automatic transmission/transaxles, engine repair, climate control, and manual drive trains.

Upon completion of this curriculum, students should be prepared to take the ASE exam and be ready for full-time employment in dealerships and repair shops in the automotive service industry.

#### Program Sequence

##### First Semester

AUT 114	Safety and Emissions.....	2
AUT 116	Engine Repair.....	3
MAT 110	Math Measurement and Literacy.....	3
TRN 110	Introduction to Transport Technology.....	2
TRN 170	PC Skills for Transportation.....	2
	Major Elective.....	2

##### Second Semester

AUT 231	Manual Transm/Transaxles/Drive Trains.....	3
ENG 110	Freshman Composition.....	3
HUM 121	The Nature of America.....	3
TRN 120	Basic Transportation Electricity.....	5
	Major Elective.....	2

##### Third Semester

AUT 123	Powertrain Diagnosis & Service.....	2
AUT 213	Automotive Servicing 2.....	2
TRN 140	Transportation Climate Control.....	2
TRN 140A	Transportation Climate Control Lab.....	2

##### Fourth Semester

AUT 141	Suspension & Steering Systems.....	3
AUT 151	Brake Systems.....	3
AUT 181	Engine Performance 1.....	3
PSY 118	Interpersonal Psychology.....	3
	Major Elective.....	2

##### Fifth Semester

AUT 183	Engine Performance II.....	4
AUT 221	Auto Transmissions/Transaxles.....	3
AUT 281	Advanced Engine Performance.....	3
COM 120	Intro to Interpersonal Communication.....	3
	Major Elective.....	2

##### Major Electives

(Select 8 hours from the following courses):

ATT 115	Green Trans Safety and Service.....	2
ATT 125	Hybrid-Electric Transportation.....	4
ATT 140	Emerging Transportation Technology.....	3
AUT 116A	Engine Repair Lab.....	1
AUT 141A	Suspension & Steering Lab.....	1
AUT 151A	Brake Systems Lab.....	1

AUT 181A	Engine Performance 1 Lab.....	1
AUT 221A	Auto Transmissions/Transaxles Lab.....	1
HET 134	Diesel Fuel and Power System.....	3
TRN 120A	Basic Transportation Electricity Lab.....	1
TRN 140A	Transportation Climate Control Lab.....	2
WBL 112	Work-Based Learning I.....	2
WBL 122	Work-Based Learning II.....	2
WBL 212	Work-Based Learning IV.....	2
WBL 222	Work-Based Learning V.....	2

**Graduation Requirements..... 67 Credit Hours**

### Introduction to Light Duty Diesel Certificate – C60160A

This certificate provides students with the knowledge and skills needed to troubleshoot and repair fuel injection, electrical, and electronic systems, in light-duty diesel-operated vehicles. Topics include theory of operations, electrical and electronic systems, test equipment, component functions, troubleshooting techniques, and repair procedures associated with light duty diesel engines. Upon completion, students should be able to diagnose and service various diesel fuel systems and related components.

#### Program Sequence

AUT 181	Engine Performance 1.....	3
AUT 181A	Engine Performance 1 Lab.....	1
HET 134	Diesel Fuel and Power System.....	3
TRN 120	Basic Transportation Electricity.....	5
TRN 120A	Basic Transportation Electricity Lab.....	1

**Graduation Requirements..... 13 Credit Hours**

### Automotive Powertrains Certificate – C60160B

This certificate covers the diagnosis, repair and service of the vehicle powertrain and related systems. Topics include fundamental operating principles of engines and transmissions. The use of proper service procedures for diagnosis, service procedures, and removal and replacement of major components. Upon completion, students should be able to perform basic services, repairs, and diagnosis of the powertrain and related systems.

#### Program Sequence

AUT 123	Powertrain Diagnosis & Service.....	2
AUT 213	Automotive Servicing 2.....	2
AUT 221	Auto Transmissions/Transaxles.....	3
AUT 221A	Auto Transmissions/Transaxles Lab.....	1
AUT 231	Manual Transm/Transaxles/Drive Trains.....	3
TRN 110	Introduction to Transport Technology.....	2

**Graduation Requirements..... 13 Credit Hours**

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## Automotive Brakes and Suspension Certificate – C60160C

This certificate is designed to prepare students for entry level employment in the area of automotive brakes, suspension, and steering. Topics include steering systems, suspension systems, wheel alignment, tire service, brake systems, ABS, and other related topics.

### Program Sequence

AUT 141	Suspension & Steering Systems .....	3
AUT 141A	Suspension & Steering Lab.....	1
AUT 151	Brake Systems.....	3
AUT 151A	Brake Systems Lab.....	1
TRN 110	Introduction to Transport Technology.....	2
TRN 170	PC Skills for Transportation.....	2

**Graduation Requirements ..... 12 Credit Hours**

## Automotive Introduction Certificate – C60160D

This certificate is designed to prepare the student for an entry-level position as an automotive technician. This course covers basic electrical and electronic systems, braking systems, diagnosis, repair and service of vehicle powertrain and related systems. Upon successful completion, students will receive NC State inspection licensure and be prepared as an entry-level automotive service technician.

### Program Sequence

AUT 114	Safety and Emissions.....	2
AUT 116	Engine Repair .....	3
AUT 231	Manual Transm/Transaxles/Drive Trains.....	3
TRN 120	Basic Transportation Electricity .....	5
TRN 170	PC Skills for Transportation.....	2

**Graduation Requirements ..... 15 Credit Hours**