

Transportation Systems Technologies

**Automotive Restoration Technology
Credential: Diploma in Automotive
Restoration Technology
D60140**

The Automotive Restoration Technology curriculum is designed to provide individuals with the competencies needed to work in the automotive restoration industry. The program prepares individuals to apply technical knowledge and skills to repair, reconstruct, finish and restore automobile bodies, fenders, and external features of a wide range of classic vehicles that typically are at least 35 years old. It includes instruction in internal combustion engines, transmissions, brakes, restoring original sheet metal, upholstery, and wood components, rebuilding starters, generators, and painting and refinishing techniques.

Graduates of the curriculum should qualify for entry-level employment opportunities in the automotive restoration industry.

Program Length: 3 semesters
Career Pathway Options: Diploma in Automotive Restoration Technology
Program Sites: Lee Campus - Day Program

Course Requirements for Automotive Restoration Technology Diploma

I. General Education Academic Core (6 SHC) C-L-SHC
ENG 102 Applied Communication II 3-0-3
MAT 101 Applied Mathematics I 2-2-3

II. Major Hours (40 SHC)

A. Technical Core (5 SHC)
TRN 110 Intro to Transport Tech 1-2-2
TRN 180 Basic Welding for Transp 1-4-3

B. Program Major (13 SHC)
ARS 112 Auto Restoration Research 3-0-3
ARS 113 Automotive Upholstery 2-2-4
ARS 114 Restoration Skills I 2-2-4
ARS 117 Automotive Engines 1-3-2

C. Other Major Hours (19 SHC)
ARS 118 Wood and Metal Restoration 2-2-3
ARS 131 Chassis and Drive Trains 2-3-3
AUB 111 Painting and Refinishing I 2-6-4
AUB 112 Painting and Refinishing II 2-6-4
TRN 120 Basic Transp Electricity 4-3-5

D. Other Required Hours (3)
AUB 121 Non-Structural Damage I 1-4-3

Total Semester Hours Credit required for graduation: 46

**Automotive Restoration Technology
Credential: Certificate in Automotive
Restoration Technology
C60140**

The Automotive Restoration Technology curriculum is designed to provide individuals with the competencies needed to work in the automotive restoration industry. The program prepares individuals to apply technical knowledge and skills to repair, reconstruct, finish and restore automobile bodies, fenders, and external features of a wide range of classic vehicles that typically are at least 35 years old. It includes instruction in basic electricity, rebuilding starters, generators, and painting and refinishing techniques.

Graduates of the curriculum should qualify for entry-level employment opportunities in the automotive restoration industry.

Program Length: 2 semesters
Career Pathway Options: Diploma in Automotive Restoration Technology (Higher entrance standards required).
Program Sites: Lee Campus - Day Program

Course Requirements for Automotive Restoration Technology Certificate

I. General Education Academic Core (0 SHC) C-L-SHC

II. Major Hours (15 SHC)

A. Technical Core (2 SHC)
TRN 110 Intro to Transport Tech 1-2-2

B. Program Major (5 SHC)
TRN 120 Basic Transp Electricity 4-3-5

C. Other Major Hours (8 SHC)
AUB 111 Painting and Refinishing I 2-6-4
AUB 112 Painting and Refinishing II 2-6-4

Total Semester Hours Credit required for graduation: 15

**Automotive Systems Technology
Credential: Associate in Applied Science
Degree in Automotive Systems Technology
A60160**

This curriculum prepares individuals for employment as automotive service technicians. The program prepares individuals to apply technical knowledge and skills to repair, service, and maintain all types of automobiles. Emphasis is placed on theory, servicing and operation of brake systems, electrical systems, engine performance, engine repair, suspension and steering, automatic and manual transmissions and drive trains, and heating and air condition systems. Classroom and lab experiences integrate technical and academic coursework.

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

Program Length: 5 semesters

Career Pathway Options: Associate in Applied Science

Degree in Automotive Systems Technology

Program Sites: Lee Campus - Day Program

Course Requirements for Automotive Systems Technology Degree

I. General Education Academic Core (15 SHC) C-L-SHC

ENG 111	Writing and Inquiry OR	3-0-3
ENG 110	Freshman Composition	3-0-3
MAT 110	Mathematical Measurement and Literacy	2-2-3
	Humanities/Fine Arts Elective	3-0-3
	Social/Behavioral Science Elective	3-0-3
	*Communications Elective	3-0-3

II. Major Hours (57 SHC)

A. Technical Core (9 SHC)

TRN 110	Intro to Transport Tech	1-2-2
TRN 120	Basic Transp Electricity	4-3-5
TRN 140	Transp Climate Control	1-2-2

B. Program Major Courses (12 SHC)

AUT 141	Suspension and Steering Systems	2-3-3
AUT 151	Brake Systems	2-3-3
AUT 181	Engine Performance I	2-3-3
AUT 221	Auto Transm/Transaxles	2-3-3

D. Other Major Hours Required for Graduation (36 SHC)

CIS 111	Basic PC Literacy	1-2-2
AUT 114	Safety and Emissions	1-2-2
AUT 114A	Safety and Emissions Lab	0-2-1
AUT 116	Engine Repair	2-3-3
AUT 116A	Engine Repair Lab	0-3-1
AUT 141A	Suspension and Steering Lab	0-3-1
AUT 151A	Brake Systems Lab	0-3-1
AUT 163	Adv Automotive Electricity	2-3-3
AUT 163A	Adv Automotive Electricity Lab	0-3-1
AUT 181A	Engine Performance Lab	0-3-1
AUT 183	Engine Performance II	2-6-4
AUT 221A	Auto Transm/Transaxles Lab	0-3-1
AUT 231	Manual Trans/Axles/Drtrains	2-3-3
AUT 231A	Manual Trans/Axles/Drtrains Lab	0-3-1
AUT 281	Advanced Engine Performance	2-2-3
TRN 130	Intro to Sustainable Transp	2-2-3
TRN 140 A	Transp Climate Control Lab	1-2-2
TRN 145	Adv Automotive Electronics	2-3-3

III. Other Required Hours (1 SHC)

Choose one course:

ACA 111	College Student Success	1-0-1
ACA 115	Success and Study Skills	0-2-1
ACA 122	College Transfer Success	1-0-1

Total Semester Hours Credit required for graduation: 73 SHC

*Communications Electives (Choose 3 SHC)

ENG 112	Writing/Research in the Disciplines	3-0-3
ENG 114	Professional Research and Reporting	3-0-3
ENG 115	Oral Communication	3-0-3
ENG 116	Technical Report Writing	3-0-3
COM 110	Introduction to Communication	3-0-3
COM 120	Intro to Interpersonal Communication	3-0-3
COM 231	Public Speaking	3-0-3

Automotive Systems Technology

Credential: Diploma in Automotive Systems Technology D60160

This curriculum prepares individuals for employment as automotive service technicians. The program prepares individuals to apply technical knowledge and skills to repair, service, and maintain all types of automobiles. Emphasis is placed on theory, servicing and operation of brake systems, electrical systems, engine performance, suspension and steering, and heating and air condition systems. Classroom and lab experiences integrate technical and academic coursework.

Upon completion of this curriculum students should be ready for full-time employment in dealerships and repair shops in the automotive service industry

Program Length: 3 semesters

Career Pathway Options: Associate in Applied Science Degree in Automotive Systems Technology (Higher entrance standards required), Diploma in Automotive Systems Technology.

Program Sites: Lee Campus - Day Program

Course Requirements for Automotive Systems Technology Diploma

I. General Education Academic Core (6 SHC) C-L-SHC

ENG 111	Writing and Inquiry OR	3-0-3
ENG 110	Freshman Composition	3-0-3
MAT 110	Mathematical Measurement and Literacy	2-2-3

II. Major Hours (36 SHC)

A. Technical Core (7 SHC)

TRN 110	Intro to Transport Tech	1-2-2
TRN 120	Basic Transp Electricity	4-3-5

B. Program Major Courses (12 SHC)

AUT 141	Suspension and Steering Systems	2-3-3
AUT 151	Brake Systems	2-3-3
AUT 163	Adv Automotive Electricity	2-3-3
AUT 181	Engine Performance I	2-3-3

C. Other Major Hours required for graduation (17 SHC)

AUT 114	Safety and Emissions	1-2-2
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AUT 114A	Safety and Emissions Lab	0-2-1
AUT 141A	Suspension and Steering Lab	0-3-1
AUT 151A	Brake Systems Lab	0-3-1
AUT 163A	Adv Automotive Electricity Lab	0-3-1
AUT 181A	Engine Performance Lab	0-3-1
AUT 183	Engine Performance II	2-6-4
CIS 111	Basic PC Literacy	1-2-2
TRN 140	Transp Climate Control	1-2-2
TRN 140 A	Transp Climate Control Lab	1-2-2

Total Semester Hours Credit required for graduation: 42

Automotive Systems Technology
Credential: Certificate in Automotive Systems Technology
C60160

This curriculum prepares individuals for employment as automotive service technicians. The program prepares individuals to apply technical knowledge and skills to repair, service, and maintain all types of automobiles. Emphasis is placed on theory, servicing and operation of brake systems, electrical systems, and engine performance. Classroom and lab experiences integrate technical and academic coursework.

Upon completion of this curriculum students should be ready for full-time employment in dealerships and repair shops in the automotive service industry

Program Length: 2 semesters
 Career Pathway Options: Associate in Applied Science Degree in Automotive Systems Technology (Higher entrance standards required), Diploma in Automotive Systems Technology (Higher entrance standards required), Certificate in Automotive Systems Technology.
 Program Sites: Lee Campus - Day Program

Course Requirements for Automotive Systems Technology Certificate
I. General Education Academic Core (0 SHC) C-L-SHC

II. Major Hours
 A. Technical Core Courses (5 SHC)
 TRN 120 Basic Transp Electricity 4-3-5

B. Program Major (8 SHC)
 AUT 151 Brake Systems 2-3-3
 AUT 151A Brake Systems Lab 0-3-1
 AUT 181 Engine Performance I 2-3-3
 AUT 181A Engine Performance Lab 0-3-1

C. Other Major Hours (4 SHC)
 AUT 163 Adv Automotive Electricity 2-3-3
 AUT 163A Adv Automotive Electricity Lab 0-3-1

Total Semester Hours Credit required for graduation: 17

Motorcycle Mechanics
Credential: Diploma in Motorcycle Mechanics
D60260

This curriculum provides a training program for developing the basic knowledge and skills needed to inspect, maintain, diagnose, repair and/or adjust motorcycles, and other similar powered vehicles. Coursework provides a thorough understanding of the operating principles involved in modern motorcycles and includes instruction in lubrication and cooling systems, electrical and ignition systems, carburetion, fuel systems and adjustments of moving parts. Graduates receiving a diploma may find employment with motorcycle dealers, independent repair shops or may set up their own business after they have developed skills in the trade.

- Program Entrance Standards:**
1. Must have all admission requirements and developmental education courses complete to be officially admitted.

Program Length: 3 semesters
 Career Pathway Options: Diploma in Motorcycle Mechanics
 Program Sites: Lee Campus - Day Program

Course Requirements for Motorcycle Mechanics Diploma
I. General Education Academic Core (6 SHC) C-L-SHC
 ENG 102 Applied Communication II 3-0-3
 MAT 110 Mathematical Measurement and Literacy 2-2-3

II. Major Hours (41 SHC)
 A. Technical Core (7 SHC)
 TRN 110 Intro to Transport Tech 1-2-2
 TRN 120 Basic Transp Electricity 4-3-5

B. Program Major (15 SHC)
 MCM 111 Motorcycle Mechanics 3-8-7
 MCM 114 Motorcycle Fuel Systems 2-6-5
 MCM 115 Motorcycle Chassis 1-6-3

C. Other Major Hours (19 SHC)
 MCM 117 Motorcycle Dyno Tuning I 1-4-3
 MCM 217 Motorcycle Dyno Tuning II 1-4-3
 TRN 180 Basic Welding for Transp 1-4-3
 MCM 122 Motorcycle Engines 2-9-5
 MEC 111 Machine Processes I 1-4-3
 CIS 111 Basic PC Literacy 1-2-2

Total Semester Hours Credit required for graduation: 47

Motorcycle Mechanics
Credential: Certificate in Motorcycle Mechanics
C60260

This curriculum provides a training program for developing the basic knowledge and skills needed to inspect, maintain, diagnose, repair and/or adjust motorcycles, and other similar powered vehicles. Coursework provides a thorough understanding of the operating principles involved in modern motorcycles and includes instruction in lubrication and cooling systems, electrical and ignition systems, carburetion, fuel systems and adjustments of moving parts. Graduates receiving a certificate may find employment with motorcycle dealers, independent repair shops or may set up their own business after they have developed skills in the trade.

Program Length: 2 semesters
 Career Pathway Options: Diploma in Motorcycle Mechanics (Higher entrance standards required), Certificate in Motorcycle Mechanics
 Program Sites: Lee Campus - Day and Evening Program

Course Requirements for Motorcycle Mechanics Certificate
I. General Education Academic Core (0 SHC) C-L-SHC

- II. Major Hours (15 SHC)**
- A. Technical Core (7 SHC)
- | | | |
|---------|--------------------------|-------|
| TRN 110 | Intro to Transport Tech | 1-2-2 |
| TRN 120 | Basic Transp Electricity | 4-3-5 |
- B. Program Major (8 SHC)
- | | | |
|---------|--------------------|-------|
| MCM 122 | Motorcycle Engines | 2-9-5 |
| MCM 115 | Motorcycle Chassis | 1-6-3 |

Total Semester Hours Credit required for graduation: 15

Programs at Harnett Correctional Institution (HCI)

Carpentry
Credential: Certificate in Carpentry and Construction Skills; Certificate in Advanced Carpentry Skills
C35180P1; C35180P2

The Carpentry curriculum is designed to prepare individuals to apply technical knowledge and skills to the fields of construction, construction management, and other associated professions.

Course work includes instruction in sustainable building and design, print reading, building codes, estimating,

construction materials and methods, and other topics related to design and construction occupations.

Graduates of this program should qualify for entry-level jobs in construction and trades professions as well as positions in industry and government.

Program Length: 1 semester
 Career Pathway Options: Diploma in Carpentry (Higher entrance standards required); Certificate in Carpentry
 Program Sites: Harnett Correctional Institution-Day Program

Course Requirements for Carpentry and Construction Skills Certificate

- I. General Education Academic Core (0 SHC) C-L-SHC**
- II. Major Hours (18 SHC)**
- A. Technical Core (18 SHC)
- | | | |
|---------|---------------------------------|--------|
| BPR 130 | Print Reading | 3-0-3 |
| CAR 111 | Carpentry I | 3-15-8 |
| CAR 114 | Residential Building Codes | 3-0-3 |
| CAR 115 | Residential Planning/Estimating | 3-0-3 |
| ISC 110 | Workplace Safety | 1-0-1 |

Total Semester Hours Credit required for graduation: 18

Course Requirements for Advanced Carpentry Skills Certificate

- I. General Education Academic Core (0 SHC) C-L-SHC**
- II. Major Hours (14 SHC)**
- A. Technical Core (14 SHC)
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|---------|---------------|--------|
| CAR 112 | Carpentry II | 3-15-8 |
| CAR 113 | Carpentry III | 3-9-6 |

Total Semester Hours Credit required for graduation: 14

Electrical Systems Technology
Credential: Certificate in Fundamentals of Electrical Technology; Certificate in Advanced Electrical Skills for Commercial, Residential, and Solar Applications
C35130P1; C35130P2

This curriculum is designed to provide training for persons interested in the installation and maintenance of electrical systems found in residential, commercial, and industrial facilities.

Coursework, most of which is hands-on, will include such topics as AC/DC theory, basic wiring practices, programmable logic controllers, industrial motor controls, applications of the National Electric Code, and other subjects as local needs require.

Graduates should qualify for a variety of jobs in the electrical field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of electrical systems.