



Automotive Restoration Technology

Credential: Diploma in Automotive Restoration Technology D6014000

The Automotive Restoration Technology curriculum is designed to provide individuals with the competencies needed to work in the automotive restoration industry. The course work includes research and application of information on specific components of a wide range of classic vehicles (1900 – 1970), such as internal combustion engines, transmissions, brakes, sheet metal, upholstery, starters, generators, and related systems. 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

A. General Education Courses (6 SHC)			C-L-SHC
ENG 102	Applied Communication II		3-0-3
MAT 101	Applied Mathematics I		2-2-3
B. Required Major Core Courses (31 SHC)			
ARS 101	Introduction to Auto Restoration		2-0-2
ARS 102	Auto Restoration Research		3-0-3
ARS 103	Automobile Upholstery		2-4-4
ARS 104	Restorative Skills I		2-4-4
ARS 107	Automotive Engines		1-3-2
ARS 108	Wood and Metal Restoration		2-2-3
ARS 131	Chassis and Drive Trains		2-3-3
ARS 161	Electrical Systems Fundamentals		2-6-4
AUB 134	Auto Body MIG Welding		1-4-3
AUB 141	Mechanical and Electrical Components I		2-2-3
C. Other Major Hours Required for Graduation (11 SHC)			
AUB 111	Painting and Refinishing I		2-6-4
AUB 112	Painting and Refinishing II		2-6-4
AUB 121	Non-Structural Damage I		1-4-3

Total Semester Hours Credit required for graduation: 48

Semester Curriculum for Automotive Systems Technology Diploma

1st Semester (Fall)			C-L-SHC
ARS 101	Introduction to Auto Restoration		2-0-2
ARS 107	Automotive Engines		1-3-2
ARS 108	Wood and Metal Restoration		2-2-3
ARS 161	Electrical Systems Fundamentals		2-6-4
AUB 111	Painting and Refinishing I		2-6-4
AUB 121	Non-Structural Damage I		<u>1-4-3</u>
			10-21-18

2nd Semester (Spring)		
ARS 102	Auto Restoration Research	3-0-3
ARS 103	Automobile Upholstery	2-4-4
ARS 131	Chassis and Drive Trains	2-3-3
AUB 112	Painting and Refinishing II	2-6-4
AUB 141	Mechanical and Electrical Components I	2-2-3
ENG 102	Applied Communication II	<u>3-0-3</u>
14-15-20		

3rd Semester (Summer)		
ARS 104	Restorative Skills I	2-4-4
AUB 134	Auto Body MIG Welding	1-4-3
MAT 101	Applied Mathematics I	<u>2-2-3</u>
5-10-10		

Total Semester Hours Credit (SHC): 48

COURSE DESCRIPTIONS

ARS 101 Introduction to Automotive Restoration 2-0-2
 This course introduces the automotive restoration industry. Emphasis is placed on the research of the evolution of the automobile from steam to the internal combustion engine in the United States and Europe. Upon completion, students should be able to describe the process of automotive restoration and note the worldwide impact of the automobile. This is a diploma-level course.

ARS 102 Auto Restoration Research 3-0-3
 This course covers identification and collection of information needed to restore classic automobiles. Emphasis is placed on using books, numbers, emblems, titles, bills of sale, and other documents as resources. Upon completion, students should be able to use reference materials in the area of auto restoration to restore classic vehicles. This is a diploma-level course.

ARS 103 Automobile Upholstery 2-4-4
 This course covers automobile upholstery work used in restoration of classic automobiles. Emphasis is placed on removing, repairing, or reconstructing worn/damaged upholstery material in classic automobiles. Upon completion, students should be able to disassemble, repair/reconstruct, or replace the seats, headliners, door panels, and other components in the interior of vehicles. This is a diploma-level course.

ARS 104 Restoration Skills I 2-4-4
 Corequisites: AUT 131, AUT 161, ARS 103 and ARS 107
 This course covers mechanical, electrical, and upholstery restoration. Emphasis is placed on engines, transmissions, brakes, starters, generators, distributors, and replacement or fabrication of upholstery. Upon completion, students should be able to restore, rebuild, or replace specific components in a wide range of classic vehicles. This is a diploma-level course.

ARS 107 Automotive Engines 1-3-2
 This course covers the repair, rebuilding, and troubleshooting of internal combustion engines. Emphasis is placed on use of tools and equipment to measure reconditioning tolerances internal combustion engine. Upon completion, students should be able to disassemble, repair and/or replace, and reassemble an internal combustion engine. This is a diploma-level course.

ARS 108 Wood and Metal Restoration 2-2-3

This course introduces various wood materials used in early automobile construction including a general overview of woodworking techniques. Emphasis is placed on wood material, metal behavior, and trim construction. Upon completion, students should be able to perform simple woodworking techniques, attach and remove trim, and be familiar with basic hardware techniques. This is a diploma-level course.

ARS 131 Chassis and Drive Trains 2-3-3

This course introduces principles of operation of automotive drive trains, perimeter/ladder/full-framed vehicles, and related restoration processes. Emphasis is placed on the technology related to restoration of manual and automatic transmissions, transaxles, and final drive components used on vehicles. Upon completion, students should be able to describe, diagnose, and determine needed service and repairs in the vehicle restoration industry.

ARS 161 Electrical Systems Fundamentals 2-6-4

This course covers six/twelve volt electrical theory, wiring diagrams, test equipment, diagnosis/repair/replacement of batteries, starters, accessories, and AC/DC generators. Topics include diagnosis, repair, and/or modification of conventional battery, starting, charging, lighting, and basic accessory systems problems. Upon completion, students should be able to diagnose, test, and repair basic electrical components on vehicles in the restoration industry.

AUB 111 Painting and Refinishing 2-6-4

This course introduces the proper procedures for using automotive refinishing equipment and materials in surface preparation and application. Topics include federal, state, and local regulations, personal safety, refinishing equipment and materials, surface preparation, masking, application techniques, and other related topics. Upon completion, students should be able to identify and use proper equipment and materials in refinishing following accepted industry standards.

AUB 112 Painting and Refinishing II 2-6-4

Prerequisites: AUB 111

This course covers advanced painting techniques and technologies with an emphasis on identifying problems encountered by the refinishing technician. Topics include materials application, color matching, correction of refinishing problems, and other related topics. Upon completion, students should be able to perform spot, panel, and overall refinishing repairs and identify and correct refinish problems.

AUB 121 Non-Structural Damage I 1-4-3

This course introduces safety, tools, and the basic fundamentals of body repair. Topics include shop safety, damage analysis, tools and equipment, repair techniques, materials selection, materials usage, and other related topics. Upon completion, students should be able to identify and repair minor direct and indirect damage including removal/repairing/ replacing of body panels to accepted standards.

AUB 134 Autobody MIG Welding 1-4-3

This course covers the terms and procedures for welding the various metals found in today's autobody repair industry with an emphasis on personal/environmental safety. Topics include safety and precautionary measures, setup/operation of MIG equipment, metal identification methods, types of welds/joints, techniques, inspection methods, and other related topics. Upon completion, students should be able to demonstrate a basic knowledge of welding operations and safety procedures according to industry standards.

AUB 141 Mechanical and Electrical Components I 2-2-3

This course covers the basic principles of automotive mechanical and electrical components. Topics include personal and environmental safety and suspension and steering, electrical, brake, heating and air-conditioning, cooling, drive train, and restraint systems. Upon completion, students should be able to identify system components and perform basic system diagnostic checks and/or repairs according to industry standards.

ENG 102 Applied Communications II 3-0-3

Prerequisites: RED 080 and ENG 090 or appropriate placement test scores

This course is designed to enhance writing and speaking skills for the workplace. Emphasis is placed on generating short writings such as job application documents, memoranda, and reports and developing interpersonal communication skills with employees and the public. Upon completion, students should be able to prepare effective, short, and job-related written and oral communications. The computer is used as a writing and design tool for this course. This is a diploma-level course.

MAT 101 Applied Mathematics I 2-2-3

Prerequisites: MAT 060, MAT 070, or MAT 080 or appropriate placement test scores

This course is a comprehensive review of arithmetic with basic algebra designed to meet the needs of certificate and diploma programs. Topics include arithmetic and geometric skills used in measurement, ratio and proportion, exponents and roots, applications of percent, linear equations, formulas, and statistics. Upon completion, students should be able to solve practical problems in their specific areas of study. This course is intended for certificate and diploma programs.