



Alabama
Department of
Postsecondary Education

Representing Alabama's Public Two-Year College System

AMT 111
Aircraft Sheetmetal Structures and Welding
Plan of Instruction

Effective Date: 2022

Version Number: Base Document

AMT111 Aircraft Sheetmetal Structures and Welding

135 Hours Theory 45 Laboratory 90

COURSE DESCRIPTION: This course introduces aircraft sheetmetal repairs. Emphasis is placed on the use of proper procedures, tools, and materials to complete sheetmetal repairs. Upon completion, students should be able to install conventional rivets; form, layout, and bend sheetmetal; install special rivets and fasteners; and inspect and repair sheetmetal structures.

This is a CORE course.

CONTACT/CREDIT HOURS (applicable if entire course is taught in a career/technical education degree or non-degree program)

Theory Contact/Credit Hours	3/3 hours	45 hours (1:1)
Lab Contact/Credit Hours	6/2 hours	90 hours (3:1)
Total Contact/Credit Hours	9/5 hours	135 hours

NOTE: Colleges may schedule lab hours as manipulative (3:1) or experimental (2:1). Adjustments in contact hours must be made accordingly.

PREREQUISITE COURSES (applicable if entire course is taught in a career/technical education degree or non-degree program)

Determined by college unless stated otherwise.

CO-REQUISITE COURSES (applicable if entire course is taught in a career/technical education degree or non-degree program)

Determined by college unless stated otherwise.

INDUSTRY COMPETENCIES

AM.II.A Metallic Structures

AM.II.A.K1 – 17 Knowledge associated with aircraft Sheetmetal Structures and Welding

AM.II.A.R1 - 5 Ability to identify, assess, and mitigate risks associated with associated with Aircraft Sheetmetal Structures and Welding

AM.II.A.S1 – 14 Ability to Demonstrate SKILLS associated with aircraft Sheetmetal Structures and Welding

COURSE OBJECTIVES

The cognitive objective of this course is for each student to comprehend foundational knowledge needed to perform stated entry-level industry competencies.

The performance objective of this course is for each student to apply foundational knowledge and risk management to problems and exercises encountered in class.

COURSE CONTENT OUTLINE FAA AUTHORITY 147

AM.II.A Metallic Structures

AM.II.A.K9 Maintenance safety practices/precautions for sheet metal repairs or fabrications.

AM.II.A.R2 Utilizing maintenance safety practices/precautions for sheet metal structures.

AM.II.A.K1 Inspection/testing of metal structures.

AM.II.A.K2 Types of sheet metal defects.

AM.II.A.K3 Selection of sheet metal repair materials.

AM.II.A.K17 Types of structures and their characteristics.

AM.II.A.R3 Use of PPE when working with sheet metal structures.

111 AM.II.A Practical 1

AM.II.A.K4 Layout, forming, and drilling of sheet metal components.

AM.II.A.K5 Selection of rivets, hardware, and fasteners for a sheet metal repair.

AM.II.A.K6 Heat treatment processes for aluminum.

AM.II.A.K7 Rivet layout.

AM.II.A.K8 Rivet removal and installation methods.

AM.II.A.R1 Selection of repair materials.

AMT 111 Exam 1

AM.II.A.K10 Flame welding gases.

AM.II.A.K11 Storage/handling of welding gases.

AM.II.A.K12 Flame welding practices and techniques.

AM.II.A.K13 Inert-gas welding practices and techniques.

AM.II.A.K14 Purpose and types of shielding gases.

AM.II.A.K15 Types of steel tubing welding repairs.

AM.II.A.K16 Procedures for weld repairs.

AM.II.A.R4 Handling, storage, and use of compressed gas bottles.

AM.II.A.R5 Use of electric welding equipment.

111 AM.II.A Practical 2

AM.II.A.S1 Install and remove solid rivets.

AM.II.A.S2 Install and remove a blind rivet.

AM.II.A.S3 Determine applicability of sheet metal for a repair in a specific application.

AM.II.A.S4 Select and install special purpose fasteners.

AMT 111 Exam 2

AM.II.A.S5 Design a repair using a manufacturer's structural repair manual.

AM.II.A.S6 Prepare and install a patch to repair an aircraft or component.

AM.II.A.S7 Make a drawing of a repair, including the number of rivets and size of sheet

AM.II.A.S8 Remove a repair that was installed with rivets.

AM.II.A.S9 Trim and form a piece of sheet metal to fit a prepared area.

111 AM.II.A Practical 3

AM.II.A.S10 Fabricate an aluminum part in accordance with a drawing.

AM.II.A.S11 Determine a rivet pattern for a specific repair.

AM.II.A.S12 Countersink rivet holes in sheet metal.

AMT 111 Exam 3

AM.II.A.S13 Perform a repair on a damaged aluminum sheet.

111 AM.II.A Practical 4

AM.II.A.S14 Determine extent of damage and decide if metallic structure is repairable.

AMT 111 Exam 4

AMT 111 Final Examination