

# AIRCRAFT STRUCTURE ASSEMBLY FAMILIARIZATION and OVERVIEW

## COURSE SYLLABUS

ACADEMIC HOURS:	<u>15.5 hours</u>	PREREQUISITE:	<u>NONE</u>
LABORATORY HOURS:	<u>16.5 hours</u>	ENROLLMENT:	<u>12 STUDENTS (MAX)</u>
TOTAL HOURS:	<u>32.0 hours</u>		

### Course Description:

This course provides a basic familiarization overview of aviation structures with specific emphasis on personal safety, design, measurement, fabrication, machining, manufacturing and installation of aerospace components and parts. The course consists of a combination of academic (lecture) and laboratory (hands-on) phases.

*This course is recommended for students seeking more advanced studies on the topic and is open to any student. Continuing Education (CE) credit will not be given for this course.*

*Total Hours: 32.0*

### Course Learning Objectives:

Upon satisfactory course completion, student will be able to accomplish the following tasks when dealing with aircraft structures assembly: Create a personal project by executing the requirements of a detailed work instruction; Interpret and make use of common industry safety practices; Choose and utilize basic tools and measuring devices to construct a project which will include the layout of hole patterns on multiple parts that will be machined/drilled and assemble together using fasteners commonly used in the aerospace industry.

### Personal Protective Equipment (PPE):

All required Personal Protective Equipment will be provided students at beginning of course.

### Examinations:

No testing will be administered, this is a familiarization course and no credit is awarded.

### Textbooks Requirements:

No Text Books are used. All required text or written material will be provided to student at time of class delivery.

### Grading Policy:

No grades will be awarded due to the course description as a familiarization course.

## Course Schedule (Planned):

### Module 1 (Day 1):

**Module Duration:** 6.5 hours Academic (Lecture) / 1.5 hours Laboratory (Hands-On)

This module consists of: Instructor Introduction, Student Introduction, General Class/Laboratory Set-Up, Course Expectations, Safety Briefing and Introduction to Aircraft Structure, General Tool Identification, Measuring Devices and Hole Pattern Layout. A written knowledge assessment will be administered to measure student base knowledge. *The student begins developing basic understanding through introduction of drilling and measurement tools, safety and recognition. Lecture, Demonstration and Hands-On are the delivery methods used in this Module.*

All needed Materials and Personal Protective Equipment will be provided to the Student.

---

### Module 2 (Day 2):

**Module Duration:** 5.0 hours Academic (Lecture) / 3.0 hours Laboratory (Hands-On)

This module consists of: Lecture of Drilling/Machining of aluminum, titanium, composite materials, Fastener Identification and Installation. Instructor Demonstration and student practice of drilling and machining of full sized holes in scrap material. The student builds understanding from information presented in Module 1, practices hands-on skills inside a controlled laboratory environment. Begin work on a personal drilling project. (Drilling pilot holes in the parts for their individual projects)

All needed Materials and Personal Protective Equipment will be provided to the Student.

---

### Module 3 (Day 3):

**Module Duration:** 2.0 hours Academic (Lecture) / 6.0 hours Laboratory (Hands-On)

This module consists of: Continuation of personal projects, demonstration of the proper drilling and machining of aluminum, titanium, composite materials. The student will use scrap material to set-up tooling and machine the edges of full sized holes.

All needed Materials and Personal Protective Equipment will be provided to the Student.

---

### Module 4 (Day 4):

**Module Duration:** 2.0 hours Academic (Lecture) / 6.0 hours Laboratory (Hands-On)

This module consists of: Instructor will demonstrate fastener installation into parts. Students will install fasteners joining the parts of their personal project. Presentation and discussion of personal projects will be conducted by students. Final clean-up of lab and classroom. A written knowledge assessment will be administered and practical exercises conducted to measure student comprehension.

All needed Materials and Personal Protective Equipment will be provided to the Student.

