

COMPOSITE FAMILIARIZATION and OVERVIEW

COURSE SYLLABUS

ACADEMIC HOURS:	<u>14.0 hours</u>	PREREQUISITE:	<u>NONE</u>
LABORATORY HOURS:	<u>18.0 hours</u>	ENROLLMENT:	<u>12 STUDENTS (MAX)</u>
TOTAL HOURS:	<u>32.0 hours</u>		

Course Description:

This course provides a basic familiarization overview with specific emphasis on identification, personal safety, fabrication, design, manufacturing, repair, alteration of aerospace components and parts utilizing composite materials. 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, students will be able to accomplish the following tasks when dealing with composite materials: define and recognize raw materials, properly handle components and parts, implement all recognized common industry safety practices, eliminate contamination and waste, identify and implement proper handling and storage, list and use basic tools used in fabrication, design, manufacturing, repair and alteration.

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: 8.0 hours Academic (Lecture)

This module consists of: Instructor Introduction, Student Introduction, General Class/Laboratory Set-Up, Course Expectations, Safety Briefing, Composite Overview, Demo of Materials, Definitions, Drawing Rosette, Building Compaction Bag, Making Templates and Stack and Compact Plies. *The student begins developing basic understanding through introduction of composite materials that emphasizes safety and recognition. Lecture, Demonstration and Hands-On the delivery methods used in this Module.*

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

Module 2 (Day 2):

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

This module consists of: Begin 6x6 Step Project, Compact (3 Plies Maximum), Build Curing Bag, Perform Leak Check (< or = 2 inches of mercury (InHG) in 5 minutes) and Begin Personal Composite Fabrication Project. The student builds understanding from information presented in Module 1, practices hands-on skills inside a controlled laboratory environment and begins work on a personal composite fabrication project.

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 Three (3) Different Types of Hotbonders, Programming of Three (3) Hotbonders, Building Compaction Bag, Beginning Compaction Bag Project, Introduction to Autoclave, Safe Usage of Autoclave, Building Large Curing Bag for Autoclave (Leak Check < or = 1 InHG in 5 Minutes).

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: Students will Present Finished Composite Cure Projects and Explain Process in Detail, Demonstration Hat Channel Layup and Bag Dimensions, Demonstration DVD Process and Pleats (Top Bag < or = 1 InHG of Lower Bag), Clean Up of Laboratory and Projects, Safe Disposal of Scrap and Debris.

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