



# COURSE OUTLINE

## ASR115

Prepared: Devin York    Approved:

<b>Course Code: Title</b>	ASR115: INTRODUCTION TO COMPOSITES
<b>Program Number: Name</b>	4067: AIRCRAFT STRUCT TECH
<b>Department:</b>	AIRCRAFT STRUCTURAL REPAIR
<b>Semester/Term:</b>	17F
<b>Course Description:</b>	This course is comprised of 32 hours of theory/practical work designed to introduce the student to the manufacturing and repair of advanced composites for modern aircraft.
<b>Total Credits:</b>	2
<b>Hours/Week:</b>	2
<b>Total Hours:</b>	32
<b>This course is a pre-requisite for:</b>	ASR116, ASR126
<b>Vocational Learning Outcomes (VLO's):</b>  Please refer to program web page for a complete listing of program outcomes where applicable.	<p>#2. Demonstrate a working knowledge of the principles of aircraft design by applying theory and shop practice.</p> <p>#4. Read and follow blueprint, shop drawings and manufacturer`s manuals necessary in all manufacturing and overhaul facilities.</p> <p>#6. Carry out any repair according to specifications, stated job procedures and the requirements of the Department of Transport Regulations.</p>
<b>Essential Employability Skills (EES):</b>	<p>#3. Execute mathematical operations accurately.</p> <p>#4. Apply a systematic approach to solve problems.</p> <p>#5. Use a variety of thinking skills to anticipate and solve problems.</p> <p>#6. Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>#7. Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>#8. Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>#9. Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</p> <p>#11. Take responsibility for ones own actions, decisions, and consequences.</p>
<b>Course Evaluation:</b>	Passing Grade: 70%, B
<b>Other Course Evaluation &amp;</b>	Grade



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### Assessment Requirements:

Definition Grade Point Equivalent

A+ 90 – 100% 4.00

A 80 – 89%

B 70 - 79% 3.00

C 60 - 69% 2.00

D 50 – 59% 1.00

F (Fail) 49% and below 0.00

CR (Credit) Credit for diploma requirements has been awarded.

S Satisfactory achievement in field /clinical placement or non-graded subject area.

U Unsatisfactory achievement in field/clinical placement or non-graded subject area.

X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.

NR Grade not reported to Registrar's office.

W Student has withdrawn from the course without academic penalty.

### Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
TEST 28A	50%
TEST 28B	50%

### Books and Required Resources:

ADVANCED COMPOSITES by JEPPESEN  
ISBN: 9780884873167

### Course Outcomes and Learning Objectives:

#### Course Outcome 1.

Identify the types of composite materials being used in aircraft structures.

#### Learning Objectives 1.

- Define modern composites
- Give examples of composite materials
- Describe the composite materials being used in aircraft structures
- Explain the advantages and disadvantages of composites for aircraft use

#### Course Outcome 2.



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Identify and describe laminated structural materials.

### **Learning Objectives 2.**

- Describe glass fiber and other fiber reinforcement products
- Explain polyester and epoxy resin systems
- Understand how thixotropic agents are used

### **Course Outcome 3.**

Explain the types of laminated construction.

### **Learning Objectives 3.**

- Lay up, moulds and parting agents
- Laminated stack-ups
- Sandwich panel construction

### **Course Outcome 4.**

Describe general manufacturing and repair techniques.

### **Learning Objectives 4.**

- Assessment of damage
- Criteria of a good manufactured part or a good repair
- Equipment required
- Safety equipment and precautions

### **Course Outcome 5.**

Describe the general repair procedures.



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### Learning Objectives 5.

- Surface scratches
- Step cut repair
- Dents in sandwich structure
- Potted repairs
- Skin penetrated and core damage

**Date:**

Friday, September 1, 2017

Please refer to the course outline addendum on the Learning Management System for further information.