SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON

# COURSE OUTLINE

COURSE TITLE: AIRCRAFT SYSTEMS

CODE NO: ASR107 SEMESTER: II

PROGRAM: AIRCRAFT STRUCTURAL REPAIR TECHNICIAN

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APPROVED: L P Arguette 94-02-10
Dean, School of Engineering Tech. Date

COURSE NAME: AIRCRAFT SYSTEMS CODE NO.: ASR107

TOTAL CREDIT HOURS: 45 HOURS (3 CREDITS)

PREREQUISITE(S):

## I. PHILOSOPHY/GOALS:

Extensive research into aircraft plumbing and manufacturing will be performed by students. Materials used to process aircraft solid tubing and flexible lines will be studied. Deicing systems under the heading "Ice and Rain Protection" will be presented. Students will research and discuss various maintenance requirements associated with deicing systems.

## II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course the student will:

Fabricate aircraft plumbing using solid metal tubing and rubber flexible lines.

Describe various types of hand tools used to fabricate aircraft tubing.

Discuss aircraft deicing systems and replacement of deicing boots.

## III. TOPICS TO BE COVERED:

1. Aircraft tubing.
2. Aircraft deicing systems.

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## IV. LEARNING ACTIVITIES

1.0 Aircraft Tubing

Upon successful completion of this unit the student will be able to:

1.1 Describe the types of material used to fabricate aircraft tubing.

1.2 Discuss the advantages of using aluminum tubing versus steel tubing.

1.3 Discuss the advantage of using steel tubing.

1.4 Identify where both aluminum and steel tubing would be used.

1.5 Describe flexible hose material construction.

1.6 Identify where flexible hose would be used.

1.7 Discuss identification codes used to describe rubber hose construction.

1.8 Describe the purpose of marker tapes found on aircraft tubing.

1.9 Discuss how to construct aircraft tubing using various tubing hand tools.

1.10 Discuss types of flares found on aircraft tubing.

1.11 Discuss the reasons why leakage occurs.

1.12 Discuss testing procedures of aircraft tubing after manufacture.

## REQUIRED RESOURCES

Textbook: A/C 65-9A
Chapter V, pg. 99 - 118

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**LEARNING ACTIVITIES**

2.0 Aircraft Deicing Systems

Upon successful completion of this unit the student will be able to:

2.1 Describe the types of ice build up on aircraft systems.

2.2 Discuss the results of ice build up on aircraft.

2.3 Identify methods of eliminating ice formation.

2.4 Describe areas on the aircraft which have ice prevention systems.

2.5 Discuss how deicer boot operation occurs.

2.6 Identify the advantages of using neoprene on deicer boots.

2.7 Discuss methods of attaching deicer boots to the aircraft structure.

2.8 Discuss preventative maintenance procedures used to extend the life of deicer boots.

2.9 Describe the procedures you would follow when removing deicer boots.

2.10 Describe the procedures you would follow when installing deicer boots.

**REQUIRED RESOURCES**

Textbook: A/C 65-15A
Chapter VII, pg. 285-300

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## V. EVALUATION METHODS: (INCLUDES ASSIGNMENTS, ATTENDANCE REQUIREMENTS ETC.)

Written tests (2)

Aircraft Tubing - 50%
Aircraft Deicing Systems - 50%

TOTAL - 100%

Grading system is as follows:

A = 90% - 100%
B = 80% - 90%
C = 70% - 79%
I = Incomplete

## VI. REQUIRED STUDENT RESOURCES

A & P Airframe textbook - A/C 65-15A

A & P General textbook - A/C 65-9A

## VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY:

Book Section (title, publisher, edition, date, library call number if applicable - see attached example)

Periodical Section (Magazines, Articles)

DOT Air Regulations

Audiovisual Section (Films, Filmstrips, Transparencies)

Aircraft Tubing as per Chapter VII of A/C 65-9A
Aircraft Deicing as per Chapter VII of A/C 65-15A

## VIII. SPECIAL NOTES

Students with special needs (eg. physical limitation, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of the students.