

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: GENERAL HAND TOOLS
CODE NO. : ASR113 **SEMESTER:** 1
PROGRAM: AIRCRAFT STRUCTURAL REPAIR
AUTHOR: STEVE LACHOWSKY
DATE: June **PREVIOUS OUTLINE DATED:** June
2005 2004
APPROVED:

DEAN **DATE**
TOTAL CREDITS: 2
PREREQUISITE(S):
HOURS: (Total) 36

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I. COURSE DESCRIPTION:

Students will research the basic hand tools used to perform aircraft structural repairs and demonstrate the safe method of operations. In-depth presentations will be demonstrated in the techniques used to operate delicate and precision measuring tools. Students will demonstrate the proper techniques in using these instruments.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Demonstrate the proper method and safe operation of hand tools.

Potential Elements of the Performance:

- identify the various hand tools that are used in aircraft repairs and hand tools specifically used in structural repairs.
- discuss and demonstrate the proper method of operation of the hand tools.
- demonstrate safe operation of the hand tools
- discuss the importance of proper care and maintenance of hand tools
- identify and choose proper file size and type
- demonstrate proper file operation
- discuss and select proper hacksaw blade for the projects assigned

2. Demonstrate the proper method of operating precision measuring instruments.

Potential Elements of the Performance:

- identify various measuring instruments used in structural repairs such as micrometers, vernier calipers and various types of gauges
- demonstrate the proper methods used in the operation of various measuring instruments
- discuss the importance of re-calibration of measuring instruments
- discuss Transport Canada's requirements as they affect the usage of aircraft related measuring instruments
- demonstrate how these measuring instruments are associated with layout procedures

3. Demonstrate using charts, the proper selection of taps, dies and drills to complete these operations in steel metals.

Potential Elements of the Performance:

- identify tap and die sizes
 - demonstrate proper tap and die selection as per project assignment
 - discuss proper procedures in operation of taps and dies
 - discuss proper maintenance of taps and dies
 - demonstrate selection procedures using charts to determine tap sizes, and twist drill sizes
 - discuss four types of taps
 - discuss procedures used to remove taps
4. Complete a twist drill operation study and discuss various drill sizes, cutting techniques, lubricants and personal safety requirements.

Potential Elements of the Performance:

- identify various types of twist drills such as standard and metric
- identify various types of drills used to operate twist drills
- discuss various parts of a twist drill and the purpose of each of these parts as they pertain to twist drill operations
- research and identify twist drill speeds and feeds
- discuss “step drilling” procedures
- discuss lubricants used during the drilling operations
- demonstrate personal safety precautions when using drills

III. TOPICS:

1. Hand Tools
2. Measuring Instruments
3. Taps, Dies and Twist Drill Operations

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

A/C 65-9A
 Teacher Handouts
 Standard Aviation Maintenance Handbook
 Aircraft Sheet Metal

V. EVALUATION PROCESS/GRADING SYSTEM:

Written Test (1): Test#22 (100% of Final Grade)

Note: Students in the Aircraft Structural Repair Program require a minimum of seventy (70) percent in a course to obtain a passing grade. This equates to a “B” grade.

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 – 89%	4.00
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.	

VI. SPECIAL NOTES:

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Retention of course outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course outline amendments:

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

COURSE NOTE: All assignments must be completed. Failure to complete assignments will result in removal of 10% from the test associated with the assignment.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.