SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

COURSE TITLE:	GENERAL HAND TOOLS		
CODE NO. :	ASR113	**SEMESTER:**	ONE
PROGRAM:	AIRCRAFT STRUCTURAL REPAIR TECHNICIAN		
AUTHOR:	Paul Davis		
DATE:	September 2015	**PREVIOUS OUTLINE DATED:**	September 2014
APPROVED:	*"Colin Kirkwood"* **Dean**		
TOTAL CREDITS:	2		
PREREQUISITE(S):			
HOURS: (Total)	32		

For additional information, please contact Colin Kirkwood, Dean,
School of the Environment, Technology and Business
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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 of 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:

Teacher Handouts
Aviation Maintenance Technician Handbook (FAA-H-8083-30)
Standard Aviation Maintenance Handbook

V. EVALUATION PROCESS/GRADING SYSTEM:

Written Test (2):
Test#22A (50% of Final Grade) & 22B (50% 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:

Grade	Definition	Grade Point Equivalent
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.	

If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

VI. SPECIAL NOTES:

Attendance:
Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

Course attendance is mandatory. If a student is absent, he/she must have a valid reason – documentation is required.

Students having missed more than 5 percent of the program through absences, shall not qualify for experience credit from Transport Canada, and will not be granted make-up or re-write options for theory tests and shop projects.

If a student is absent for all of the in-class theory or shop demonstrations for which a test/project is assigned, he/she will not be granted permission to complete the test/project.

It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers will not be granted admission to the room.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located in D2L and on the portal form part of this course outline.