



COURSE OUTLINE

ASR113

Prepared: Paul Davis Approved:

Course Code: Title	ASR113: GENERAL HAND TOOLS
Program Number: Name	4067: AIRCRAFT STRUCT TECH
Department:	AIRCRAFT STRUCTURAL REPAIR
Semester/Term:	17F
Course Description:	This course consists of theory/practical work that is related to using the general hand tools needed for aircraft structural repair work. Following in-class presentations along with Instructor demonstrated techniques in the shop, the student will demonstrate the safe and proper way to use hand tools and precision measuring instruments.
Total Credits:	2
Hours/Week:	2
Total Hours:	32
Vocational Learning Outcomes (VLO's): Please refer to program web page for a complete listing of program outcomes where applicable.	<p>#1. Safely use the tools, equipment and identify materials needed to carry out various sheet metal repairs.</p> <p>#7. Refer to specific aircraft manuals such as Aircraft Pocket Manual and Hardware Manual to determine safe and acceptable procedures and parts.</p> <p>#8. Demonstrate a sense of responsibility and appreciation of the high cost of the equipment and materials used to train the practical portion of this program.</p> <p>#10. Recognize basic hand tools and demonstrate their use for specific maintenance on floats, fuselage structures and control systems.</p> <p>#12. Use specialized equipment such as reamers, taps and dies to complete a detailed repair as per manufacturer's specifications.</p> <p>#16. Demonstrate honesty and integrity to match the requirements of the aircraft industry.</p>
Essential Employability Skills (EES):	<p>#1. Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>#2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <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>



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#9. Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.
 #10. Manage the use of time and other resources to complete projects.
 #11. Take responsibility for ones own actions, decisions, and consequences.

Course Evaluation: Passing Grade: 70%, B

Other Course Evaluation & Assessment Requirements: Grade
 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
Measuring Quiz	10%
Test #22A	45%
Test #22B	45%

Books and Required Resources: Aviation Maintenance Technician Handbook
 ISBN: 978-1-56027-716-3

Course Outcomes and Learning Objectives: **Course Outcome 1.**

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



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Learning Objectives 1.

- 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

Course Outcome 2.

Demonstrate the proper method of operating precision measuring instruments.

Learning Objectives 2.

- 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

Course Outcome 3.

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

Learning Objectives 3.

- identify tap and die sizes



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- 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

Course Outcome 4.

Complete a twist drill operation study and discuss various drill sizes, cutting techniques, lubricants and personal safety requirements.

Learning Objectives 4.

- 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

Date:

Friday, September 1, 2017

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