



COURSE OUTLINE: ASR113 - GENERAL HAND TOOLS

Prepared: Paul Davis

Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	ASR113: GENERAL HAND TOOLS
Program Number: Name	4067: AIRCRAFT STRUCT TECH
Department:	AIRCRAFT STRUCTURAL REPAIR
Semesters/Terms:	19F
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
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Vocational Learning Outcomes (VLO's) addressed in this course: Please refer to program web page for a complete listing of program outcomes where applicable.	4067 - AIRCRAFT STRUCT TECH VLO 1 Safely use the tools, equipment and identify materials needed to carry out various sheet metal repairs. VLO 7 Refer to specific aircraft manuals such as Aircraft Pocket Manual and Hardware Manual to determine safe and acceptable procedures and parts. VLO 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. VLO 10 Recognize basic hand tools and demonstrate their use for specific maintenance on floats, fuselage structures and control systems. VLO 12 Use specialized equipment such as reamers, taps and dies to complete a detailed repair as per manufacturer's specifications. VLO 16 Demonstrate honesty and integrity to match the requirements of the aircraft industry.
Essential Employability Skills (EES) addressed in this course:	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.



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	EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
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Course Evaluation:	Passing Grade: 70%, B
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Books and Required Resources:	Aviation Maintenance Technician Handbook ISBN: 978-1-56027-716-3
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Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Demonstrate the proper method and safe operation of hand tools.	1.1 identify the various hand tools that are used in aircraft repairs and hand tools specifically used in structural repairs 1.2 discuss and demonstrate the proper method of operation of the hand tools 1.3 demonstrate safe operation of the hand tools 1.4 discuss the importance of proper care and maintenance of hand tools 1.5 identify and choose proper file size and type 1.6 demonstrate proper file operation 1.7 discuss and select proper hacksaw blade for the projects assigned
Course Outcome 2	Learning Objectives for Course Outcome 2
2. Demonstrate the proper method of operating precision measuring instruments.	2.1 identify various measuring instruments used in structural repairs such as micrometers, vernier calipers and various types of gauges 2.2 demonstrate the proper methods used in the operation of various measuring instruments 2.3 discuss the importance of re-calibration of measuring instruments 2.4 discuss Transport Canada's requirements as they affect the usage of aircraft related measuring instruments 2.5 demonstrate how these measuring instruments are associated with layout procedures
Course Outcome 3	Learning Objectives for Course Outcome 3
3. Demonstrate using charts, the proper selection of taps, dies and drills to complete these operations in steel metals.	3.1 identify tap and die sizes 3.2 demonstrate proper tap and die selection as per project assignment 3.3 discuss proper procedures in operation of taps and dies 3.4 discuss proper maintenance of taps and dies 3.5 demonstrate selection procedures using charts to determine tap sizes, and twist drill sizes 3.6 discuss four types of taps 3.7 discuss procedures used to remove taps
Course Outcome 4	Learning Objectives for Course Outcome 4
4. Complete a twist drill operation study and discuss various drill sizes, cutting techniques, lubricants and personal safety requirements.	4.1 identify various types of twist drills such as standard and metric 4.2 identify various types of drills used to operate twist drills 4.3 discuss various parts of a twist drill and the purpose of each of these parts as they pertain to twist drill operations 4.4 research and identify twist drill speeds and feeds 4.5 discuss step drilling procedures



	4.6 discuss lubricants used during the drilling operations 4.7 demonstrate personal safety precautions when using drills								
Evaluation Process and Grading System:	<table> <tr> <th>Evaluation Type</th><th>Evaluation Weight</th></tr> <tr> <td>Measuring Quiz</td><td>10%</td></tr> <tr> <td>Test #22A</td><td>45%</td></tr> <tr> <td>Test #22B</td><td>45%</td></tr> </table>	Evaluation Type	Evaluation Weight	Measuring Quiz	10%	Test #22A	45%	Test #22B	45%
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Date:	August 29, 2019								
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.								