Prepared: Dave Holley Approved: Corey Meunier

Course Code: Title	MTF207: PATTERN AND TEMPLATE DEVELOPMENT 1
Program Number: Name	4051: METAL FABRICATION
Department:	IRONWKR APPR./WELDING RELATED
Semester/Term:	17F
Course Description:	This course takes students through a step-by-step process on accurately laying out a template to be used for accurately completing projects. Techniques for the coping, bending, and rolling of metals are all covered. Each template is created using drafting and blueprint-reading skills for appropriately-sized templates as they relate to specific material size.
Total Credits:	2
Hours/Week:	2
Total Hours:	30
Prerequisites:	MTF140
Substitutes:	MTF135
This course is a pre-requisite for:	MTF235
Vocational Learning Outcomes (VLO's): **Please refer to program web page for a complete listing of program outcomes where applicable.**	#1. Interpret blueprints and produce basic drawings and bills of materials. #4. Create and use patterns and templates using common layout and measuring tools. #6. Develop project plans relating to component and sub-assembly production. #7. Complete all work in compliance with health and safety legislation and prescribed organizational practices and procedures to ensure safety of self and others. #8. Work responsibly and effectively in accordance with government safety regulations, manufacturer's recommendations and approved industry standards.
Essential Employability Skills (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. #3. Execute mathematical operations accurately. #5. Use a variety of thinking skills to anticipate and solve problems. #10. Manage the use of time and other resources to complete projects. #11. Take responsibility for ones own actions, decisions, and consequences.

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Course Evaluation:	Passing Grade: 50%, D
Other Course Evaluation & Assessment Requirements:	Late hand in penalties will be -10% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances (as determined by instructor). 2. If a student misses a test/lab he/she must have a valid reason (i.e. medical or family emergency documentation shall be required). In addition, the instructor MUST be notified PRIOR to the test or lab sitting. If this procedure is not followed the student will receive a mark of zero on the test/lab with no make-up option. 3. Re-writes are NOT allowed for any written assignment, quiz or test. 4. Repeats are NOT allowed for any shop test. 5. Course attendance is mandatory. One percent (1 %) per hour will be deducted from the final course grade for unexcused* absence. *[Any absence without a written, valid reason will be deemed unexcused.]* Valid reasons would include: Doctors note Family Death or Serious Illness supported by a written note.
Evaluation Process and Grading System:	

Evaluation Type	Evaluation Weight
Project 1	20%
Project 2	20%
Project 3	20%
Project 4	20%
Project 5	20%

Course Outcomes and Learning Objectives:

Course Outcome 1.

Develop the ability to layout templates and patterns, through the interpretation of drawings, using common layout and measuring tools, applying shop formulas and performing calculations to ensure the accuracy and functionality to meet the tolerances specified in the blueprints and specifications of the manufactured item.

Learning Objectives 1.

1. Identify the purpose and fundamentals of layout development.
   - Classes of geometric forms

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	• Manual layout development 2. Describe methods of pattern development. • Radial line • Parallel line • Mathematical 3. Develop patterns for rectangular tapered shapes employing radial line development method. • Layout method for flat surfaces • Flat, angled (sloping) surfaces • Hoppers, shuts and pyramidal shapes • Truncated pyramidal shape • Verify accuracy 4. Develop patterns for conical shapes employing radial line development. • Concentric cones • Verify accuracy 5. Develop patterns for cylindrical shapes employing parallel line development. • Straight, round, rolled shells and tanks • Circular ducting • Circular elbows • Circular branches • Piping intersections • Verify accuracy 6. Select materials for templates. • Paper • Cardboard • Wood • Metal 7. Develop templates for checking flat and curved surfaces. • Radius • Diameter • Angles • Parallel bar • Squaring methods • Verify accuracy
Date:	Friday, September 1, 2017
	Please refer to the course outline addendum on the Learning Management System for further information.