



## COURSE OUTLINE: MTF207 - PATTERN & TEMPLATE 1

Prepared: Dave Holley

Approved: Corey Meunier, Chair, Technology and Skilled Trades

<b>Course Code: Title</b>	MTF207: PATTERN AND TEMPLATE DEVELOPMENT 1
<b>Program Number: Name</b>	4051: METAL FABRICATION
<b>Department:</b>	IRONWKR APPR./WELDING RELATED
<b>Semesters/Terms:</b>	21F
<b>Course Description:</b>	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.
<b>Total Credits:</b>	2
<b>Hours/Week:</b>	2
<b>Total Hours:</b>	30
<b>Prerequisites:</b>	MTF140
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>Substitutes:</b>	MTF135
<b>This course is a pre-requisite for:</b>	MTF235
<b>Vocational Learning Outcomes (VLO's) addressed in this course:</b>	<p><b>4051 - METAL FABRICATION</b></p> <p>VLO 1 Interpret blueprints and produce basic drawings and bills of materials.</p> <p>VLO 4 Create and use patterns and templates using common layout and measuring tools.</p> <p>VLO 6 Develop project plans relating to component and sub-assembly production.</p> <p>VLO 7 Complete all work in compliance with health and safety legislation and prescribed organizational practices and procedures to ensure safety of self and others.</p> <p>VLO 8 Work responsibly and effectively in accordance with government safety regulations, manufacturer's recommendations and approved industry standards.</p>
<b>Essential Employability Skills (EES) addressed in this course:</b>	<p>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.</p> <p>EES 3 Execute mathematical operations accurately.</p> <p>EES 5 Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p>

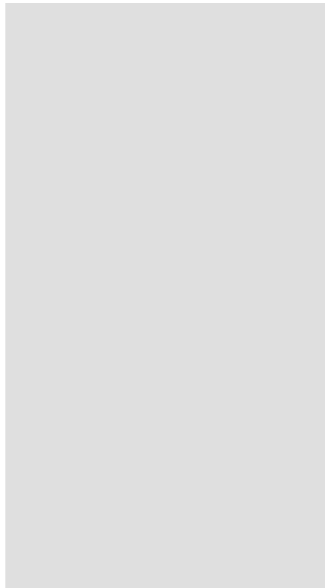
In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2021-2022 academic year.



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	EES 11 Take responsibility for ones own actions, decisions, and consequences.				
<b>Course Evaluation:</b>	<p>Passing Grade: 50%, D</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p>				
<b>Other Course Evaluation &amp; Assessment Requirements:</b>	<ol style="list-style-type: none"> <li>1. Late hand in penalties will be -10% per day.</li> <li>2. If a student misses a test, 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 sitting. If this procedure is not followed the student will receive a mark of zero on the test with no make-up option.</li> <li>3. Re-writes are NOT allowed for any written assignment, quiz or test.</li> <li>4. Course attendance is mandatory. Any student that is not present for the first 3 classes in each course, will be deemed to have not completed the required safety orientation for the course and will not be permitted to continue. One percent (1 %) per hour will be deducted from the final course grade for unexcused* absence. Any unexcused attendance beyond 15% of the total allocated course hours will result in the student receiving a failing grade for the course.</li> </ol> <p>Valid reasons would include: Doctors note Family Death or Serious Illness supported by a written note.</p> <p>Unexcused absence* will be determined in a case by case basis by the instructor of each course.</p>				
<b>Books and Required Resources:</b>	<p>IPT's Metal Trades &amp; Welding Publisher: IPT Publishing &amp; Training Ltd.</p> <p>Kit: ILM Post-Secondary Package by Alberta Government Publisher: AK Graphics, Sault College Print Shop</p>				
<b>Course Outcomes and Learning Objectives:</b>	<table border="1"> <thead> <tr> <th>Course Outcome 1</th> <th>Learning Objectives for Course Outcome 1</th> </tr> </thead> <tbody> <tr> <td>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.</td> <td> <ol style="list-style-type: none"> <li>1. Identify the purpose and fundamentals of layout development. Classes of geometric forms Manual layout development</li> <li>2. Describe methods of pattern development. Radial line Parallel line Mathematical</li> <li>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</li> <li>4. Develop patterns for conical shapes employing radial line development. ..... Concentric cones Verify accuracy</li> </ol> </td> </tr> </tbody> </table>	Course Outcome 1	Learning Objectives for 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.	<ol style="list-style-type: none"> <li>1. Identify the purpose and fundamentals of layout development. Classes of geometric forms Manual layout development</li> <li>2. Describe methods of pattern development. Radial line Parallel line Mathematical</li> <li>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</li> <li>4. Develop patterns for conical shapes employing radial line development. ..... Concentric cones Verify accuracy</li> </ol>
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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

**Evaluation Process and Grading System:**

Evaluation Type	Evaluation Weight
Project 1	25%
Project 2	25%
Project 3	25%
Project 4	25%

**Date:**

September 17, 2021

**Addendum:**

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

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