



## COURSE OUTLINE: MTF236 - FIELD FIT & LAYOUT

Prepared: Dave Holley

Approved: Corey Meunier, Dean, Technology, Trades, and Apprenticeship

<b>Course Code: Title</b>	MTF236: FIELD FITTING AND LAYOUT
<b>Program Number: Name</b>	4051: METAL FABRICATION
<b>Department:</b>	IRONWKR APPR./WELDING RELATED
<b>Academic Year:</b>	2023-2024
<b>Course Description:</b>	This course is designed to incorporate all skills that students have obtained in Fabrication 1 & 2. Students will demonstrate the independent ability to assemble various structures using bending, forming, shaping, tacking and welding procedures. Students will also take the role of a business and will be required to receive a verbal order, provide cost of job, submit the required materials, build entire assembly and produce full blueprints for all parts required.
<b>Total Credits:</b>	8
<b>Hours/Week:</b>	8
<b>Total Hours:</b>	112
<b>Prerequisites:</b>	MTF201, MTF211
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>Vocational Learning Outcomes (VLO's) addressed in this course:</b>	<b>4051 - METAL FABRICATION</b> VLO 1 Interpret blueprints and produce basic drawings and bills of materials. VLO 2 Apply knowledge of various welding and metal cutting techniques and theories to produce components and sub-assemblies. VLO 3 Prepare materials by utilizing fabrication machinery and equipment. VLO 4 Create and use patterns and templates using common layout and measuring tools. VLO 5 Understand and use a variety of destructive and non-destructive methods to test welds. VLO 6 Develop project plans relating to component and sub-assembly production. 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. VLO 8 Work responsibly and effectively in accordance with government safety regulations, manufacturer's recommendations and approved industry standards.
<b>Essential Employability Skills (EES) addressed in this course:</b>	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 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.
	EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.
	EES 10 Manage the use of time and other resources to complete projects.
	EES 11 Take responsibility for ones own actions, decisions, and consequences.

**Course Evaluation:** Passing Grade: 50%, D

A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.

**Other Course Evaluation & Assessment Requirements:**

- Late hand in penalties will be -10% per day.
- 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.

Valid reasons would include:  
Doctors note  
Family Death or Serious Illness supported by a written note.

Unexcused absence\* will be determined in a case by case basis by the instructor of each course.

**Books and Required Resources:**

IPT's Metal Trades & Welding  
Publisher: IPT Publishing & Training Ltd

Kit: ILM Post Secondary Package by Alberta Government  
Publisher: AK Graphics, Sault College Print Shop

<b>Course Outcomes and Learning Objectives:</b>	<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
	1. Plan and Set-up Workspace	Locate and set up sufficient space for work to take place Plan a safe work environment 1.1 Ensure lighting is adequate 1.2 Describe appropriate ventilation and air flow requirements 1.3 Ensure proper material handling 1.4 Identify overhead hazards 1.5 Ensure and plan for proper work process flow
	<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
	2. Plan and Schedule Job	Respond to verbal production request 2.1 Develop working sketch for project 2.2 Identify materials required 2.3 Produce accurate material cut list 2.4 Calculate cost estimate for labor and material 2.5 Estimate job start and completion dates
	<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
	3. Set up and use jigs and	3.1 Material selection

	fixtures to establish critical dimensions and datum locations	3.2 Fabrication 3.3 Clamping 3.4 Forming and shaping 3.5 Part removal 3.6 Accessibility
	<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>
	4. Assemble components and sub assemblies	Sequence of assembly Alignment 4.1 Seam alignment tools 4.2 Jigs and fixtures 4.3 Tack welds 4.4 Fasteners 4.5 Bracing
	<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
	5. Conduct quality assurance inspections	5.1 Ensuring weld sizing and location 5.2 Removing any sharp edges 5.3 Cleaning slag and weld splatter

**Evaluation Process and Grading System:**

<b>Evaluation Type</b>	<b>Evaluation Weight</b>
Employability Skills	10%
Handrail Fabrication	30%
Platform Fabrication	30%
Stair Fabrication	30%

**Date:** May 31, 2023

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