COURSE OUTLINE: MTF133 - MACHINE OPERATIONS

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Course Code: Title	MTF133: MACHINE OPERATIONS
Program Number: Name	4051: METAL FABRICATION 4053: WELDING TECHNIQUES
Department:	IRONWKR APPR./WELDING RELATED
Academic Year:	2022-2023
Course Description:	Use fabrication equipment for forming plate and structural shapes in accordance with government safety regulations, manufacturer recommendations, and approved industry standards.
Total Credits:	2
Hours/Week:	2
Total Hours:	28
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.**	**4051 - METAL FABRICATION** 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 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. **4053 - WELDING TECHNIQUES** VLO 1 Perform work responsibly and in compliance with the Occupational Health and Safety Act. VLO 2 Interpret engineering drawings and blueprints and produce basic graphics as required by industry. VLO 3 Recognize and understand use of welding symbols. VLO 4 Use layout and fabrication processes typical to the industry to determine correct form with accuracy. VLO 5 Select appropriate tools and devices to perform mathematical calculations and technical measurements for successful completion of a project. VLO 6 Perform weld applications utilizing Shielded Metal Arc (SMAW), Flux Core (FCAW) and Gas Metal Arc (GMAW Mig Welding) welding equipment.

	VLO 7	Use welding techniques according to industry standards.
	VLO 8	Create high quality welds on various types of materials and create joints in the flat, horizontal, vertical and overhead positions.
	VLO 9	Identify defect in welds, demonstrate how to prevent them and define procedures for correction of defective weld quality.
Essential Employability Skills (EES) addressed in this course:	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 7	Analyze, evaluate, and apply relevant information from a variety of sources.
	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:

1.Late hand in penalties will be -10% per day.
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.
3.Re-writes are NOT allowed for any written assignment, quiz or test.
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.

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

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1

	Use fabrication equipment for forming plate and structural shapes in accordance with government safety regulations, manufacturer`s recommendations and approved industry standards	Upon successful completion of this course, the student will demonstrate the ability to: 1. Describe operation and maintenance of common fabrication equipment. - Plate shears - Iron worker - Drills - Band saws - Benders - Chop Saw 2. Select and demonstrate functions of common fabrication machinery and their safety systems. - Plate shears - Drill presses - Band saws - Safe retrieval of drops and marking piece/part number - Safety systems - Applicable codes and manufacturer`` `````````````````` ````s recomendations

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Employability Skills	10%
Project 1	25%
Project 2	25%
Project 3	40%

Date: June 27, 2022

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