COURSE OUTLINE: WLD301 - FAB AND WELDING III

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Course Code: Title	WLD301: FABRICATION AND WELDING III
Program Number: Name	4039: MECH. ENG. TN-MANUFA
Department:	ELECT./INSTRUMENTATION PS
Academic Year:	2024-2025
Course Description:	Plan and perform practical welding and fitting projects in accordance with government safety regulations, manufacturer recommendations, and approved industry standards.
Total Credits:	2
Hours/Week:	0
Total Hours:	0
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.**	**4039 - MECH. ENG. TN-MANUFA** VLO 1 Complete all work in compliance with current legislation, standards, regulations and guidelines. VLO 2 Apply quality control and quality assurance procedures to meet organizational standards and requirements. VLO 3 Comply with current health and safety legislation, as well as organizational practices and procedures. VLO 4 Apply sustainability best practices in workplaces. VLO 12 Develop strategies for ongoing personal and professional development to enhance work performance.
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 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:

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.

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
Apply safe work practices according to Occupational Health and Safety Act (OHSA) legislation.	1.1 Identify hazards for welding and cutting operations. 1.2 Identify the use of personal protective equipment for welding and cutting operations. 1.3 Explain the hazards involved with welding fumes and gases. 1.4 Identify welding fume ventilation methods. 1.5 Explain the effects of electricity and precautions used to prevent injury. 1.6 Describe the procedure for welding or cutting in confined spaces or potentially dangerous enclosures. 1.7 Interpret sections of the occupational Health and Safety Act General Safety Regulations
Course Outcome 2	**Learning Objectives for Course Outcome 2**
Describe layout procedures.	2.1 Describe layout and abbreviations and symbols. 2.2 Describe Layout tools and mark-up methods. 2.3 Describe templates. 2.4 Describe procedure for flat plate utilization.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
Fabricate projects to required tolerances and specifications.	3.1 Plan for fabrication process by using drawings and selecting materials required. 3.2 Prepare for fabrication by creating an order of operations to create components and sub-components. 3.3 Verify all measurements and calculations. 3.4 Select proper tools and equipment for the task. 3.5 Perform proper tacking and welding techniques to ensure distortion is minimized. 3.6 Verify dimensions of finished components for acceptable tolerances.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
Stress relieve component as	

	required and to specifications.	4.1 Identify how heat and temperature relate to distortion.
	Course Outcome 5	**Learning Objectives for Course Outcome 5**
	Describe the machining functions.	5.1 Describe the machining functions normally performed on shears and universal ironworker. 5.2 Describe the component parts, holding devices, and accessories of shears and universal ironworker, and describe the function of each. 5.3 Safely set up and operate equipment such as shears and ironworker to crop, notch, bend, and shear.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Shop assignments	85%
Theory Tesing	15%

Date: September 26, 2024

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