STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

MASTER SYLLABUS

COURSE NUMBER – COURSE NAME
WELD 212 – Fabrication and Repair

Created by: Christopher Mayville

Updated by:

Canino School of Engineering Technology

Department: Mechanical & Energy Technology

Semester/Year: Spring 2021

A. **TITLE**: Fabrication and Repair

B. **COURSE NUMBER:** WELD 212

C. **CREDIT HOURS: (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)**

 # Credit Hours: 2
 # Lecture Hours: **per week**
 # Lab Hours: 4 **per week**
Other: **per week**

Course Length: 15 **Weeks**

D. **WRITING INTENSIVE COURSE**: Yes ☐ No ☒

E. **GER CATEGORY: None:** ☒ **Yes:** GER
***If course satisfies more than one*:** GER

F. **SEMESTER(S) OFFERED: Fall** ☐ **Spring** ☒ **Fall & Spring** ☐

G. **COURSE DESCRIPTION:**

Students will use techniques and procedures common to the the welding and fabrication industry to build functional assemblies and repair parts, including cast iron.

H. **PRE-REQUISITES: None** ☐ **Yes** ☒ **If yes, list below:**

WELD 110, WELD 112, WELD 113, and WELD 201

CO-REQUISITES: None ☒ **Yes** ☐ **If yes, list below:**

I. **STUDENT LEARNING OUTCOMES**: (***see key below***)

By the end of this course, the student will be able to:

Course Student Learning Outcome [SLO]	***Program Student Learning Outcome [PSLO]***	***GER*** *[If Applicable]*	***ISLO & SUBSETS***	
Apply welding and fabrication skills to complete real-world hands-on activities.	4		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
Create job estimates for materials, labor time, and cost.	1		1-Comm Skills ISLO ISLO	W Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets

KEY	**Institutional Student Learning Outcomes [ISLO 1 – 5]**
ISLO #	**ISLO & Subsets**
1	**Communication Skills** Oral [O], Written [W]
2	**Critical Thinking** *Critical Analysis [CA] , Inquiry & Analysis [IA] , Problem Solving [PS]*
3	**Foundational Skills** *Information Management [IM], Quantitative Lit./Reasoning [QTR]*
4	**Social Responsibility** *Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]*
5	**Industry, Professional, Discipline Specific Knowledge and Skills**

*Include program objectives if applicable. Please consult with Program Coordinator

J. **APPLIED LEARNING COMPONENT:** Yes ☒ No ☐

If YES, select one or more of the following categories:

- ☒ Classroom/Lab
- ☐ Internship
- ☐ Clinical Placement
- ☐ Practicum
- ☐ Service Learning
- ☐ Community Service

- ☐ Civic Engagement
- ☐ Creative Works/Senior Project
- ☐ Research
- ☐ Entrepreneurship

(program, class, project)

K. TEXTS:

None

L. REFERENCES:

None

M. EQUIPMENT: None ☐ Needed: Typical welding and metal fabrication tooling to include, but not limited to: SMAW, GMAW, and GTAW welders; sheet and metal plate cutting and bending equipment; pipe cutting, notching, and bending equipment; oxy-fuel welding and cutting equipment as well as plasma cutter; gantry or jib crane capable of lifting 5 tons or more.

N. GRADING METHOD: A-F

O. SUGGESTED MEASUREMENT CRITERIA/METHODS:

Lab activity performance

P. DETAILED COURSE OUTLINE:

N/A

Q. LABORATORY OUTLINE: None ☐ Yes ☒

1. Create job estimates for material, time, and cost
2. Oxy-fuel and plasma cutting to remove damaged material or parts.
3. Metal sizing and shaping using oxyfuel, plasma, grinding, and sawing.
3. Gouging to remove old weld
4. Pipe bending and notching
5. Bending and pattern making for sheet metal and plate
6. Basic machining
7. Heat treating
8. Forging
9. SMAW, GMAW, and GTAW
10. Building jigs and fixtures
11. Hard facing of wear surfaces