STATE UNIVERSITY OF NEW YORK

COLLEGE OF TECHNOLOGY

CANTON, NEW YORK

MASTER SYLLABUS

WELD 210 – Welding Certification

Created by: Christopher Mayville

Updated by:

Canino School of Engineering Technology

Department: Mechanical & Energy Technology

Semester/Year: Spring 2021

A. **TITLE**: Welding Certification

B. **COURSE NUMBER:** WELD 210

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

 # Credit Hours: 3

 # Lecture Hours: 1 **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:**

This course covers the various certifications available in the welding industry as well as the procedures to qualify for a specific weld. Students perform welding certification and qualification procedures.

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

WELD 110, WELD 201, and WELD 202

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***	
Setup and prepare material according to the requirements of a weld for certification or a Welding Procedure Specification (WPS).	2		2-Crit Think ISLO ISLO	CA Subsets Subsets Subsets
Complete SMAW, GMAW, and GTAW to meet the requirements of a weld for certification or a WPS.	4		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
Prepare a weld to test for certification or qualification..	3		4-Soc Respons ISLO ISLO	ER Subsets Subsets Subsets
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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:

Jeffus, Larry. (2017). Welding: Principles and Applications, 8th Edition. Boston, MA: Cengage Learning.

L. REFERENCES:

M. EQUIPMENT: None ☐ **Needed:** Standard Welding Shop Equipment, SMAW, GMAW, and GTAW welders

N. GRADING METHOD: A-F

O. SUGGESTED MEASUREMENT CRITERIA/METHODS:

Homework, quizzes, tests, lab exercises, and hands on practical exams

P. DETAILED COURSE OUTLINE:

1. Material Preparation

2. Root Pass

3. Hot Pass

4. Filler Pass

5. Cover Pass

6. Preheating and Postheating

7. Preparing for testing

8. SMAW Certification

9. GMAW Certification

10. GTAW Certification

Q. LABORATORY OUTLINE: None ☐ Yes ☒

1. Root Pass with Backing Strip-All Positions

2. Open Root Pass- All Positions

3. Hot Pass Repair

4. SMAW Certification

Plate- All Positions

Pipe and Tubing- All Positions

5. GMAW Certification

Plate- All Positions

Pipe and Tubing- All Positions

6. GTAW Certification

Plate- All Positions

Pipe and Tubing- All Positions