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



MASTER SYLLABUS

MECH 180 - Survey of Engineering Trades

CIP Code: 15.0000

For assistance determining CIP Code, please refer to this webpage https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=55 or reach out to Sarah Todd at todds@canton.edu

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Updated by:

Canino School of Engineering Technology Mechanical & Energy Technologies Fall 2023

- A. TITLE: Survey of Engineering Trades
- B. COURSE NUMBER: MECH 180
- C. CREDIT HOURS (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity):

Credit Hours: 3

Lecture Hours __2_ per Week

Lab Hours _3__ Week

Contact hours _5__ per Week

Course Length (# of Weeks): 15

- D. WRITING INTENSIVE COURSE: No
- E. GER CATEGORY:

Does course satisfy more than one GER category? If so, which one?

- F. SEMESTER(S) OFFERED: Fall and Spring
- G. COURSE DESCRIPTION:

This course provides introduction to some of the trade opportunities in the field of engineering and technology. Students will gain introductory experience in the areas of welding, plumbing, heating, air conditioning, and residential electricity.

H. PRE-REQUISITES: None CO-REQUISITES: None

I. STUDENT LEARNING OUTCOMES:

Course Student Learning Outcome [SLO]	<u>PSLO</u>	<u>GER</u>	<u>ISLO</u>
a. Demonstrate an understating of SMAW and GMAW.			
b. Properly assemble various plumbing connections.			
c. Build wood framed walls using industry best practice.			
d. Build electrical circuits using industry best practices.			

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		

J.	APPLIED LEARNING COMPONENT:	YesX_ No	
	If Yes, select one or more of the following categories:		
	Classroom/Lab_X_ Internship Clinical Practicum Practicum Service Learning Community Service	Civic Engagement Creative Works/Senior Project Research Entrepreneurship (program, class, project)	
K.	TEXTS: None		
L.	REFERENCES: None		
M.	EQUIPMENT: Technology education classroom with: basic ha welders, propane and oxy/fuel torch	nd tools, hand drill, drill press, stick and wire feed	

P. DETAILED COURSE OUTLINE:

GRADING METHOD: A-F

I. Welding

N.

0.

- A. Torch Cutting
- B. SMAW/Stick Welding
- C. GMAW/Wire feed Welding

SUGGESTED MEASUREMENT CRITERIA/METHODS:

Quizzes, exams, laboratory activities, and laboratory participation

- II. Plumbing, Heating, and Air Conditioning
 - A. Ductwork and Pattern Making
 - B. Pipe fitting
 - Soldering
 - Threading
 - Gluing PVC
 - PEX
- III. Construction
 - A. Sawing tool safety
 - B. Wood frame construction
- IV. Electricity
 - A. Lighting, Outlets, and Switch Circuits

Q. LABORATORY OUTLINE:

- A. Setup and Cutting Coupons
- B. FCAW
 - a. Stick Welding- Flat butt joints
 - b. Stick Welding- T-joints
- C. GMAW
 - a. Wire-feed Welding- Flatt butt joints
 - b. Wire-feed Welding- T-joints
- D. Pattern making
- E. Soldering Pipe
- F. Assemble pipe fittings: threaded, PVC, PEX
- G. Wood frame construction
- H. Wiring lights, outlets, and switches