

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?v=55>*

*or reach out to Sarah Todd at [todds@canton.edu](mailto:todds@canton.edu)*

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**Updated by:**

**Canino School of Engineering Technology  
Mechanical & Energy Technologies  
Fall 2023**



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

J. APPLIED LEARNING COMPONENT: Yes \_\_\_X\_\_\_ 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 hand tools, hand drill, drill press, stick and wire feed welders, propane and oxy/fuel torch

N. GRADING METHOD: A-F

O. SUGGESTED MEASUREMENT CRITERIA/METHODS:

Quizzes, exams, laboratory activities, and laboratory participation

P. DETAILED COURSE OUTLINE:

I. Welding

A. Torch Cutting

B. SMAW/Stick Welding

C. GMAW/Wire feed Welding

- 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