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

MASTER SYLLABUS

COURSE NUMBER – COURSE NAME
CONS 477 – Capstone Project

CIP Code: 15.0201
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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Canino School of Engineering Technology
DEPARTMENT of Civil and Construction Technology
Fall 2023

A.   TITLE: Capstone Project

B.   COURSE NUMBER: CONS 477

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

 # Credit Hours: 3
 # Lecture Hours __3_ per Week
 # Lab Hours ___ Week
  Other ___ per Week

Course Length (# of Weeks):   15

D.   WRITING INTENSIVE COURSE: No

E.   GER CATEGORY:
      Does course satisfy more than one GER category? No If so, which one?

F.   SEMESTER(S) OFFERED: (*Fall, Spring, or Fall and Spring*)   Spring

G.   COURSE DESCRIPTION:
This course provides a learning experience that allows a student to propose, design, and implement a project. This could be a study of a problem and solution of specific equipment, new project design, improvement of an existing product, and many others. All projects must be approved by course faculty.

H.   PRE-REQUISITES: CONS 476 or permission of the instructor.
      CO-REQUISITES: None

I.   STUDENT LEARNING OUTCOMES:

Course Student Learning Outcome [SLO]	PSLO	GER	ISLO
a.Have an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline.	2488: 1		5
b.an ability to design systems, components, or processes meeting specified needs for broadly -defined engineering problems appropriate to the discipline	2488: 2		5

c.an ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature	2488:3		1 (O,W)
d.an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes	2488: 4		5
e.an ability to function effectively as a member as well as a leader on technical teams	2488: 5		4 (T)
f.demonstrate understanding of and apply appropriate principles of ethics, diversity issues and responsibilities, global and societal awareness, and professionalism.	2488: 6		4, 5

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: **Yes_x_____   No_____**

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

Classroom/Lab_x__   Civic Engagement___
Internship___   Creative Works/Senior Project___
Clinical Practicum___   Research___
Practicum___   Entrepreneurship___
Service Learning___   (program, class, project)
Community Service___

K.   TEXTS: N/A

L.   REFERENCES: Project specific

M.   EQUIPMENT: CEET laboratories are used. Students are responsible for materials or components that may be needed to complete an approved project if they cannot be provided by the department.

N.   GRADING METHOD: A-F

O.   SUGGESTED MEASUREMENT CRITERIA/METHODS:
- Project proposal
- final report
- reflective narrative
- Oral presentation
       - Other project deliverables specific to the project

P.   DETAILED COURSE OUTLINE:
I.   Project Proposal
a.   Background
b.   Problem, Goal, Solution
c.   Objectives and Approach
d.   Deliverables
e.   Schedule

I.   Progress Report
a.   Memo style
b.   Weekly
c.   What has been completed
d.   What needs to be accomplished
e.   Comments/discussion on accomplishments, changes, etc.

II.   Project Binder and Electronic Documents
a.   All project documents will be presented as hard copies in a project binder, with proper divisions.
b.   All final versions of documents and draft versions will be provided
c.   All field and lab data sheets
d.   All design plan, estimates, hand calculations, etc.
e.   A full electronic version will be provided on disc/flashdrive

f.   The binder and electronic version will be graded for completeness, organization, and neatness

III.   **Reflective Narrative**
a.   **Individually prepared by each student**
b.   **Approximately 2 pages typed**
c.   **Memo format**
d.   **Required Content:**
i.   **Professional growth: discuss in what ways you grew professionally, what self-learning did you do, how did you do it, was it successful?**

ii.   **Time management: did you meet your initial deadlines? What deviations were there from the original schedule and why? What techniques did you use to track deliverables? If necessary, what might you do in the future to improve your timeliness? While your work progress will be documented in your field/lab book you may want to consider keeping a work log spreadsheet in Excel. Create a new row for each day worked with columns for each project component where you will enter the amount of time worked on a particular component. There could be a total work hours column for each row entry and overall project component. One column could be dedicate to comments for each row entry. When you work in industry you will need to track time spent on multiple projects and individual project components so you can properly bill a client – it's good to get in the habit of tracking your time now.**

iii.   **Continuous improvement: what inefficiencies did you have or areas of weakness? Did you improve in these areas? In what ways? How?**

iv.   **Ethics and awareness of societal/economical issues: An important responsibility of every professional in the engineering and engineering technology field is to have a solid understanding of and commitment to address professional, ethical, and diversity issues and responsibilities; and to have a knowledge of the impact of engineering technology solutions in a societal and global context. Discuss the ways in which your project addressed these issues (where applicable).**
v.   **Team leader/member effectiveness: Discuss roles you had as a team leader and as a team member. How were you effective in each role? Did you improve how you performed in either/both role? How might you improve in the future in these roles? Self and peer evaluations will be conducted.**

IV.   **Database**
a.   **Excel database. File for field and lab data and data analysis, multiple worksheets. (If applicable)**
b.   **Design files (e.g. Civil 3D, STADD Pro) (if applicable)**
c.   **Drafting/mapping files (e.g.. AutoCADD, REVIT, or ArcGIS files) (if applicable)**

V.   **Report**
A report of some nature will need to be prepared. Content will be variable depending on the nature of the project. The project could be presented as an assessment report, feasibility study, or design plan as a few examples. The exact content will be developed by the students and faculty member at the start of the semester and as the project develops and progresses. The following are some content areas that should be applicable to most projects.

a.   **Cover letter to client (faculty advisor)**
b.   **Abstract/Executive Summary**

c.   **Project Statement**
d.   **Introduction - provides background, context, review of pertinent technical literature, etc.**
e.   **Project Specific Sections**
f.   **Recommendations and Future Work**
g.   **Conclusions**
h.   **Reference List**
i.   **Appendices**

VI.   **Presentation**
a.   **Students will give an oral presentation to the IAB board, faculty, administration, and other students at the end of the semester.**
b.   **PowerPoint**
c.   **1 hour period, 45-minute presentation**

VII.   **Project Summary Fact Sheet and/or Technical Poster**
a.   **Students will prepare a one- to two-page, color "fact sheet" style project overview that can be displayed in the hallway or program website. Should summarize the project, be technical in nature, have proper referencing, and be a good and thorough representation of what was accomplished.**
b.   **If applicable, depending on the timing and project, students may develop a technical poster to be presented at the Scholarly Activity Celebration.**

Q.   LABORATORY OUTLINE: