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

MASTER SYLLABUS

CIVL 477– Capstone

CIP Code: 14.0801

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Updated by:

School: Canino School of Technology
Department: Civil and Construction Technology
Implementation Semester/Year: Fall 2026

A. TITLE: Capstone

B. COURSE NUMBER: CIVL 477

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

# Credit Hours per Week	**3**
# Lecture Hours per Week	**3**
# Lab Hours per Week	
Other per Week	

D. WRITING INTENSIVE COURSE:

Yes	x
No	

E. GER CATEGORY:

Does course satisfy a GER category(ies)? If so, please select all that apply.

[1-2] Communication	
[3] Diversity: Equity, Inclusion & Social Justice	
[4] Mathematics & Quantitative Reasoning	
[5] Natural Science & Scientific Reasoning	
[6] Humanities	
[7] Social Sciences	
[8] Arts	
[9] US History & Civic Engagement	
[10] World History & Global Awareness	
[11] World Languages	

F. SEMESTER(S) OFFERED:

Fall	
Spring	x
Fall and 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 Pre-Capstone, or permission of the instructor
CO-REQUISITES:

I. STUDENT LEARNING OUTCOMES:

Course Student Learning Outcome [SLO]	Program Student Learning Outcome [PSLO]	GER	ISLO & Subsets
a. have an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	SO1		ISLO 2 (PS)
b. have an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.	SO2		ISLO 5
c. have an ability to communicate effectively with a range of audiences through written, oral, and graphical communication; and an ability to identify and use appropriate technical literature	SO3		ISLO 1 (O+W)
d. have an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	SO4		ISLO 4 (ER)
e. have an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	SO5		ISLO 4 (T)
f. have an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions	SO6		ISLO 5
g. have an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	SO7		ISLO 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 [X] one or more of the following categories:

Classroom / Lab		Community Service	
Internship		Civic Engagement	
Clinical Practicum		Creative Works/Senior Project	X
Practicum		Research	
Service Learning		Entrepreneurship [program, class, project]	

K. TEXTS: N/A

L. REFERENCES: Project Specific

M. EQUIPMENT: Civil 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:
- final report
- reflective narrative
- Oral presentation
- Progress reports
- project binder and electronic documents/database
- Other project deliverables specific to the project

P. DETAILED COURSE OUTLINE:

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/flash drive
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: