MOHAWK VALLEY COMMUNITY COLLEGE

UTICA & ROME, NEW YORK

SCHOOL OF SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS - CAREER

**Course Outline:** **CT 299 – Capstone Design Project**

1. **Catalog Description**

CT 299 Capstone Design Project – Civil [C-1, P-4, CR-3]

This course allows students to collaborate with peers on an existing, open-ended civil engineering design project that integrates program course knowledge with long-range planning and economic, budgetary, environmental, scheduling, and public concerns. Students will complete a technical report and deliver a formal presentation of their project. Community partners and industry professionals may be invited for the final design presentations. (Spring semester)

Prerequisite: CT 102 Engineering Drawing and MicroStation CAD, CT 151 Surveying 1, CT 222 Soil Mechanics and Foundations, and CT 231 Transportation Engineering

Co-requisites: CT 232 Environmental Engineering

1. **Materials**

Text: *No text required*

Other: Scientific calculator, engineering computation paper, 3-ring Binder

1. **Course Objectives**

The primary objective of this course is for students to participate in and complete an open-ended design project. Students will utilize the knowledge, techniques, skills, and tools from previous courses to culminate in a final encompassing project representing the complete preliminary design process encountered in the civil engineering field. It will cover best practices in planning, design, reports, submittals, entitlement, and presentation of the project to a professional group.

1. **Student Learning Outcomes** *(ETAC-ABET Assessment Criteria)*
2. Students will be able to identify and use appropriate technology, techniques, and skills to accomplish the assigned project. (2)
3. Students will be able to utilize up to date engineering and technology applications to accomplish the assigned project. (1)
4. Students will be able to conduct, analyze, and interpret engineering data and apply the results to assigned projects. (1)
5. Students will be able to produce designs and reports appropriate to the Civil Engineering Technology program educational objectives that demonstrate creativity, innovation, and originality. (3)
6. Students will be able to work effectively in teams to accomplish the assigned project. (5)
7. Students will be able to identify, analyze and solve technical problems as part of the assigned project. (1)
8. Students will be able to demonstrate effective communication skills in the final design project oral presentation and through the written design report. (3)
9. Students will be able to demonstrate an understanding of the need for professional, ethical, and social responsibilities.
10. Students will be able to demonstrate a commitment to quality, timeliness, and continuous improvement.
11. Students will be able to utilize CAD graphic techniques, and other computer software to produce engineering design documents. (1)

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| **Week** | **Lecture** |
| 1 | Introductions - review course outline & syllabi |
| 2 | Engineering ethics |
| 3 | Engineering ethics |
| 4 | Engineering economics |
| 5 | Engineering economics |
| 6 | Project Development |
| 7 | Spring Break - No Class - Enjoy!! |
| 8 | Project Development |
| 9 | Project Development |
| 10-15 | Project |

Course Name: CT 299 Capstone Design Project - Civil

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| **Date** | **Faculty Name** | **Change** | **Input** | **Measurement** | **Assessment** | **Action** |
| 7 Jan 2019 | Mike Sisti | Reviewed for content and format, updated outcomes and topics, updated ABET assessment criteria |  |  |  |  |
| 14 Jan 2020 | M Sisti | Updated course description and objectives |  |  |  |  |
| 15 Jan 2021 | M Sisti | Reviewed |  |  |  |  |
| 18 Jan 2022 | M Sisti | Reviewed |  |  |  |  |
| 8 Jan 2023 | M Sisti | Reviewed & updated policies |  |  |  |  |
| 10 Jan 2024 | M Sisti | Reviewed & updated policies |  |  |  |  |
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