

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



MASTER SYLLABUS

CONS 201 – Civil Engineering Software Topics

CIP Code: 15.0201

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Updated by:

Canino School of Engineering Technology

Department: Civil and Construction

Technologies Semester/Year: Spring 2026

A. TITLE: Civil Engineering Software Topics

B. COURSE NUMBER: CONS 201

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

# Credit Hours	3
# Lecture Hours per Week	1
# Lab Hours per Week	4
Other per Week	

D. WRITING INTENSIVE COURSE:

Yes	
No	x

E. GER CATEGORY:

Does the 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 introduces drafting and detailing software and techniques used by engineers and professionals in civil and construction engineering fields. Students learn to prepare detailed drawings and plans consistent with industry standards and practice. Autodesk AutoCAD, Civil 3D, and other commonly used civil engineering software are used to create site plans and maps, as well as structural detailing plans.

- H. PRE-REQUISITES: SOET 116 or SOET 115
CO-REQUISITES: SOET 116 or SOET 115

I. STUDENT LEARNING OUTCOMES:

Course Student Learning Outcome [SLO]	Program Student Learning Outcome [PSLO]	GER	ISLO & Subsets
a. Prepare Civil 3D drawings consistent in form and content with standard practice in the industry.	SO1a,b,e and SO3c		ISLO 5
a. Prepare structural detail drawings consistent in form and content with standard practice in the industry.	SO1a,b,e and SO3c		ISLO 5
b. Operate civil engineering computer drawing application software such as Civil3D and AutoCAD with proficiency in preparing industry standard documents.	SO1a,b,e and SO3c		ISLO 5
c. Prepare in-depth study of proper annotation techniques used in civil engineering and construction documents.	SO1a,b,e and SO3c		ISLO 5

KEY	<u>Institutional Student Learning Outcomes</u> [ISLO 1 – 5]
ISLO #	ISLO & Subsets
1	Communication Skills Oral [O], Written [W]
2	Critical Thinking <i>Critical Analysis [CA], Inquiry & Analysis [IA], Problem Solving [PS]</i>
3	Foundational Skills <i>Information Management [IM], Quantitative Lit, /Reasoning [QTR]</i>
4	Social Responsibility <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
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	x	Community Service	
Internship		Civic Engagement	
Clinical Practicum		Creative Works/Senior Project	
Practicum		Research	
Service Learning		Entrepreneurship [program, class, project]	

- K. **TEXTS:** Autodesk Civil 3D 2023 Fundamentals ISBN: 978-1-63057-494-9
- L. **REFERENCES:** None
- M. **EQUIPMENT:** Computer Drafting Lab and drafting tools (e.g. engineers and architects scales).
- N. **GRADING METHOD:** A-F
- O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:** assignments, quizzes, exams, and projects

P. **DETAILED COURSE OUTLINE:**

I. Civil 3D

1. The Autodesk Civil 3D Interface
2. Survey, Points, and Linework
3. Surfaces
4. Alignments
5. Profiles
6. Corridors
7. Grading
8. Pipe Networks
9. Project Explorer
10. Production plan
11. Autodesk Civil 3D Styles and Settings
12. Project Management
13. Parcels
14. Surfaces - Beyond the Basics
15. Corridors - Beyond the Basics
16. Pipes - Beyond the Basics
17. Sheet Set Manager

18. Quantity Takeoff and Visualization Index

II. Structural Detailing

1. Structural Steel Detailing: framing, sections, connections, and details
2. Reinforced Concrete Detailing: elements, walls, columns, floors, and beams

Q. LABORATORY OUTLINE:

I. Civil 3D Lab Topics

1. The Autodesk Civil 3D Interface
2. Survey, Points, and Linework; Surfaces; and Alignments
3. Profiles, Corridors, Grading and Pipe Networks
4. Project Explorer, Plan Production, and Autodesk Civil 3D Styles and Settings, Project management
5. Parcels and Surfaces
6. Corridors, Pipes
7. Sheet Set Manager and Quantity Takeoff and Visualization

II. Structural drafting lab topics

8. Drawing Structural Steel Framing Plans
9. Drawing Structural Steel Sections
10. Drawing Structural Steel Connections
11. Creating Steel Fabrication Details
12. Drawing Structural Concrete Foundation Elements
13. Drawing Concrete walls and columns
14. Drawing Concrete floors and beams