

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



**MASTER SYLLABUS**

**COURSE NUMBER – COURSE NAME  
CONS 132 - CONSTRUCTION DRAFTING**

**Created by: Robert F. Burnett**

**Updated by: Robert F. Burnett**

**Canino School of Engineering Technology**

**Department: Civil/Cons**

**Semester/Year: Spring 2019**

A. **TITLE:** Construction Drafting

B. **COURSE NUMBER:** CONS 132

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

# Credit Hours: 3

# Lecture Hours: 1 per week

# Lab Hours: 4 per week

Other: per week

Course Length: 15 Weeks

D. **WRITING INTENSIVE COURSE:** Yes  No

E. **GER CATEGORY:** None:  Yes: GER  
*If course satisfies more than one:* GER

F. **SEMESTER(S) OFFERED:** Fall  Spring  Fall & Spring

G. **COURSE DESCRIPTION:**

An introduction to the fundamental principles of engineering and architectural drafting and to the basic idea that all people involved in engineering/Architecture and/or construction will communicate with CADD drawings of some nature. The student will demonstrate a basic understanding of orthographic projection, perspective and isometric views, descriptive geometry, good CAD practices. A variety of construction prints will be utilized to create the ability to deal with all varieties of drawings commonly emanating from architectural engineering firms and those found on construction job sites. Throughout the course, CAD concepts are reinforced through the use of AutoCAD and software.

H. **PRE-REQUISITES:** None  Yes  If yes, list below:

SOET 116

**CO-REQUISITES:** None  Yes  If yes, list below:

**I. STUDENT LEARNING OUTCOMES: (see key below)**

By the end of this course, the student will be able to:

<u>Course Student Learning Outcome</u> <i>[SLO]</i>	<u>Program Student Learning Outcome</u> <i>[PSLO]</i>	<u>GER</u> <i>[If Applicable]</i>	<u>ISLO &amp; SUBSETS</u>	
Review AutoCAD basics and begin Setting up drawings using AIA standards for drafting	NA		2-Crit Think 3-Found Skills ISLO	Subsets Subsets Subsets Subsets
Creating/learning the symbols used in construction drafting	NA		2-Crit Think 3-Found Skills ISLO	Subsets Subsets Subsets Subsets
Using external references (xrefs) to create drawing backgrounds	NA		1-Comm Skills 3-Found Skills ISLO	Subsets Subsets Subsets Subsets
Navigate effectively through residential, light and heavy commercial construction plans	NA		2-Crit Think 4-Soc Respons 1-Comm Skills	Subsets Subsets Subsets Subsets
Draw Building elevations using orthographic projection. Draw Civil/Construction details data	NA		2-Crit Think 3-Found Skills ISLO	Subsets Subsets Subsets Subsets

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

\*Include program objectives if applicable. Please consult with Program Coordinator

J. **APPLIED LEARNING COMPONENT:** Yes  No

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

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Classroom/Lab | <input type="checkbox"/> Civic Engagement              |
| <input type="checkbox"/> Internship               | <input type="checkbox"/> Creative Works/Senior Project |
| <input type="checkbox"/> Clinical Placement       | <input type="checkbox"/> Research                      |
| <input type="checkbox"/> Practicum                | <input type="checkbox"/> Entrepreneurship              |
| <input type="checkbox"/> Service Learning         | (program, class, project)                              |
| <input type="checkbox"/> Community Service        |  |

K. **TEXTS:**

COMMERCIAL DRAFTING AND DETAILING

Author: ALAN JEFFERIS & KENNETH D. SMITH, AIA, DELMAR CENGAGE LEARNING  
ISBN-13: 978-1-4354-2597-2

L. **REFERENCES:**

American Institute of Architects, Autodesk Education Community, New York State Department of building Codes

M. **EQUIPMENT:** None  **Needed:** Mechanical (automatic) pencil, engineering computation paper, straight edge/45 degree triangle, Flash drive/Memory Stick, Architects and engineers scales,

N. **GRADING METHOD:** A-F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

Students are evaluated using quizzes, exam, drawing assignments; a major CAD project is employed as a final project. The final exam is comprehensive. Participation in the discussion board and or Class Café on ANGLE is also including in the final grade.

P. **DETAILED COURSE OUTLINE:**

I. Blueprint reading

a. Use of scales

b. Metric drawings

c. Print reading practice exercises

d. Use conversion of fractions and decimal measurements

II. AutoCAD

a. Review of AutoCAD environment and basic commands

b. Drawings in AutoCAD

1. Section drawings

2. Isometric drawings

3. Dimensioning

4. Construction drawings

5. Floor plans

## **6. Elevations**

### **III. Manual Sketching and Drawing**

- a. Students may practice creating a rough sketch to be used converted to a CAD drawings**
- b. Sketching techniques (No Manual drafting) shall be basic skills to create a drawings/detail that is considered legible by someone other than the student who created the drawing. This course does not cover Manual drafting and should not be confused with Sketching**
- c. Manual lettering standards practiced**

**Q.    LABORATORY OUTLINE: None  Yes**

**NOTE: The laboratory projects assigned in this course are assignments that require the students to create a variety of industrial quality drawings adhering to the AIA standards.**

#### **I. Reintroduce AutoCAD 2010**

- a. Briefly review of 2D CAD skills**

#### **II. Construction Drawing Organization using CADD**

- a. Advanced Layer management**
- b. Xref management**
- c. PEN WIEGHT**
- d. PAPER/MODEL space**
- e. MVSETUP**
- f. PSLTSCALE**
- g. VIEWPORTS**

#### **III. Reading Measuring Tools**

- a. Use Architects and Engineers Scales**

#### **IV. Applications of Dimensioning**

- a. Dimension style formatting for typical scales in construction documents (AIA)**
- b. Various layout standards used in the Construction and Architectural Industry are covered.**
- c. Residential dimension standards of plan view drawings**

#### **V. Complex layer management tools**

- a. Advanced Layer management**
- b. Layer states manager**
- c. LAYERS II tools**
- d.**

#### **VI. Proper use of external references in Cad drawings**

- a. XREF manager**
- b. INSERT**
- c. BIND/DETACH**
- d. Sharing files with other CADD users**