

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



MASTER SYLLABUS

**COURSE NUMBER – COURSE NAME
SOET 115 - Computer Aided Drafting and Design 1**

Created by: Robert Burnett

Updated by: -----

Canino School of Engineering Technology

Department: Civil and Construction Technology

Semester/Year: Fall 2019

- A. **TITLE:** Computer Aided Drafting and Design 1
- B. **COURSE NUMBER:** SOET 115
- C. **CREDIT HOURS:** 3 credit hour(s) per week for 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:**

This course introduces the student to the use of a computer to produce Mechanical engineering, Architectural, MEP and construction drawings. Students shall learn fundamentals functions of 2D AutoCAD software. Other topics covered in the course include Orthographic Projection, National Drafting Standards and Conventions, Detail Drawings, Assembly Drawings, Architectural, Constructions, Electrical, PLMG/HVAC and Civil CADD topics. 3D solid modeling and Building Information Modeling (BIM) are briefly explored at the end of this course. This course introduces 2D drawing topics in lecture as well as lab, with drafting and other related topics covered in lecture. This course cannot be taken for credit by students with credit in SOET 116.

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

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:

<i>Course Student Learning Outcome [SLO]</i>	<i>Program Student Learning Outcome [PSLO]</i>	<i>GER [If Applicable]</i>	<i>ISLO & SUBSETS</i>	
Interpret basic drawing layout and standards use in CADD/BIM such as orthographic drawing, basic isometric drawings	1b,7c,5		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
Apply basic dimensioning rules to engineering drawings	1b,7c,5		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
Complete various types of 2D/3D engineering and architectural drawing using Industry standard software	1b,7c,5		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
Explore basic 2D, 3D CADD/BIM topics and drawings using AutoCAD, REVIT, INVENTOR	1b,7c,5		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
Utilize free hand lettering and basic sketching techniques used to create engineering notes to be transferred to CADD/BIM drawings	1b,7c,5		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets

KEY	Institutional Student Learning Outcomes [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

*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 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:

AuotCAD and its Applications Comprehensive 2019
G-W publisher ISBN#978-1-63563-462-4

L. REFERENCES:

M. EQUIPMENT: None Needed:

N. GRADING METHOD:

- *Exams
- * Quizzes
- *Drawings

O. SUGGESTED MEASUREMENT CRITERIA/METHODS:

A-F

P. DETAILED COURSE OUTLINE:

II. Fundamental drawing

b. Basic drawing Tools

III. Drawing accuracy

IV. 2D representation

a. Orthographic representation

b. isometric/Oblique

VI. Elementary Dimensioning

a. Dimension standards for Mechanical engineering

b. Dimensions standards for Architectural/Construction drawings

c. Formatting dimension styles for different scale drawings

VII. Fundamentals of drawing Management

a. Layers,

- b. groups, blocks
- c. External references (XREF)

Q. LABORATORY OUTLINE: None — Yes —

I. AutoCAD User interface

- a. workspace
- b. Profiles

II. Fundamental drawing

- a. Modifying commands
- b. Basic drawing Tools

III. Drawing accuracy

- a. Efficiency tools
- b. Object Snap
- c. Object Tracking
- d. Ortho/Polar tool

IV. 2D representation

- a. Orthographic representation
- b. isometric
- c. Model space
- d. Paper space

V. Fundamentals of Plotting process

- a. Sheet set up and printing techniques for small drawings
- b. Printing large format drawings to plotter

VI. Elementary Dimensioning

- a. Dimension standards for Mechanical engineering
- b. Dimensions standards for Architectural/Construction drawings
- c. Formatting dimension styles for different scale drawings

VII. Fundamentals of drawing Management

- a. Layers,
- b. groups, blocks
- c. External references (XREF)

VIII. Basic solid modeling techniques with AutoCAD and INVENTOR

- a. Extrude
- b. Revolve
- c. Sweep
- d. Subtract

IX. Building Information Modeling (BIM)

- a. Students will explore basic tools within BIM software
- b. Create small building using REVIT

X. Final Exam