

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



**COURSE OUTLINE
SOET 116 Introduction to Computer Aided Drafting and Design**

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CANINO SCHOOL OF ENGINEERING TECHNOLOGY

Spring 2015

- A. **TITLE:** Introduction to Computer Drafting and Design
- B. **COURSE NUMBER:** SOET 116
- C. **CREDIT HOURS:** 2
- D. **WRITING INTENSIVE COURSE:** NA
- E. **LENGTH OF COURSE:** 15 weeks
- F. **SEMESTER(S) OFFERED:** Fall 2015
- G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
2 - Two hour labs
- H. **CATALOGUE 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.
- I. **PRE-REQUISITES:** None
- J. **GOALS (STUDENT LEARNING OUTCOMES):** By the end of the course the student will be able to:

<i>Course Objective</i>	<i>Institutional SLO</i>
a. Interpret basic drawing layout and standards use in CADD/BIM such as orthographic drawing, basic isometric drawings	2. Crit. Thinking 1. communication 3. Prof. Competence
b Apply basic dimensioning rules to engineering drawings	2. Crit. Thinking 3. Prof. Competence
c. Complete various types of 2D/3D engineering and architectural drawing using Industry standard software	1. Communication 2. Critical thinking 3. Prof. Competence
d. Explore basic 2D, 3D CADD/BIM topics and drawings using AutoCAD, REVIT, INVENTOR	2. Crit. Thinking 3. Prof. Competence
e. Utilize free hand lettering and basic sketching techniques used to create engineering notes to be transferred to CADD/BIM drawings	3. Prof. Competence
f. Comprehend basic 2D concepts using AutoCAD, Explore 3D	2. Crit. Thinking

solid models using INVENTOR software, and Building information modeling (BIM) topics with REVIT	3. Prof. Competence
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- L. REFERENCES:** American National Standards Institute Drafting Manual
- M. EQUIPMENT:** university supplied equipment, i.e., technology enhanced classroom
- N. GRADING METHOD:** A-F or P/F
- O. MEASUREMENT CRITERIA/METHODS**
- Exams
 - Quizzes
 - Papers
 - ANGEL Class Café - online discussions
- P. DETAILED COURSE OUTLINE:**
- 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

Q. LABORATORY OUTLINE: