A. **Title:** Construction Drafting

B. **Course Number:** CONS 132

C. **Credit Hours:** 3

D. **Writing Intensive Course:** N/A

E. **Course Length:** 15 weeks

F. **Semester(s) Offered:** Spring

G. **Hours of Lecture, Laboratory, Recitation, Tutorial, Activity:**
   One - 1 hour lecture  Two - 2 hour labs per week

H. **Catalogue 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.

I. **Pre-Requisites/Co-Courses:** SOET 116

J. **GOALS (STUDENT LEARNING OUTCOMES):**

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

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   | a. Review AutoCAD basics and begin Setting up drawings using AIA standards for drafting | 2. Crit. Thinking
   |                                                                               | 3. Prof. Competence                      |
   | b. Draw basic set of residential construction documents                          | 2. Crit. Thinking
   |                                                                               | 3. Prof. Competence                      |
   | c. Creating/learning the symbols used in construction drafting                   | 1. Communication
   |                                                                               | 3. Prof. Competence                      |
   | d. Using external references (xrefs) to create drawing backgrounds               | 2. Crit. Thinking
   |                                                                               | 3. Prof. Competence                      |
   | e. Navigate effectively through residential, light and heavy commercial construction plans | 2. Crit. Thinking
   |                                                                               | 4. Inter-Intrapersonal Skills
   |                                                                               | 1. Communication                         |
f. Draw Building elevations using orthographic projection. Draw Civil/Construction details data

| 2. Crit. Thinking  
| 3. Prof. Competence |

| g. Introduce Revit Architectural software, Advanced CADD topics as time permits  
| 2. Crit. Thinking  
| 3. Prof. Competence |

K. **Textbook:**
   Title: COMMERCIAL DRAFTING AND DETAILING
   Author: ALAN JEFFERIS & KENNETH D. SMITH, AIA, DELMAR CENGAGE LEARNING

L. **References:** American Institute of Architects, Autodesk Education Community, New York State Department of building Codes

M. **Equipment:** 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. **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 Topical 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

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