I. **OVERVIEW**

The following information will appear in the 2010 - 2011 catalog

**ENGTC 211 Intermediate Computer Assisted Drafting**

1 Unit

*Formerly listed as: ENGTC - 211: Intermediate Topics in Computer Assisted*

**Prerequisite:** Satisfactory completion of ENGTC 210.

Continuation of ENGTC 210 to include topics on the use of layers, blocks, templates, dimensioning and various advanced drawing and editing commands.

Field trips are not required. (A-F or P/NP - Student choice) Lecture /Lab

Transfer: (CSU)

II. **LEARNING CONTEXT**

Given the following learning context, the student who satisfactorily completes this course should be able to achieve the goals specified in Section III, Desired Learning:

A. **COURSE CONTENT**

1. **Required Content:**

   a. Review of AUTOCAD principles
      
      i. Dimensioning
      
      ii. Dimensioning variables
      
      iii. Text

   b. Use of layers
      
      i. Linetypes
      
      ii. Colors
      
      iii. Freezing and thawing

   c. Blocks and inserts
      
      i. Creating blocks
      
      ii. Inserting blocks
      
      iii. Scaling of blocks

   d. Attributes
      
      i. Definition and uses
      
      ii. Inserting attributes
2. **Required Lab Content:**

In lab, students perform the CAD functions listed in the lecture content section. Assignments are given that require application of the content.

a. Review of AUTOCAD principles
   i. Dimensioning
   ii. Dimensioning variables
   iii. Text

b. Use of layers
   i. Linetypes
   ii. Colors
   iii. Freezing and thawing

c. Blocks and inserts
   i. Creating blocks
   ii. Inserting blocks
   iii. Scaling of blocks

d. Attributes
   i. Definition and uses
   ii. Inserting attributes

e. Additional draw/edit commands
   i. Hatch, break, extend, divide.

f. Introduction to templates

B. **ENROLLMENT RESTRICTIONS**

1. **Prerequisites**
Satisfactory completion of ENGTC 210.

2. **Requisite Skills**
   *Before entering the course, the student will be able to:*
   
a. Use AutoCAD commands to draw predefined objects.

   b. Use the computer to draw lines, arcs, and figures of specified shape and location.

   c. Use the computer to properly position, size, and construct text.

C. **HOURS AND UNITS**

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<th>UNITS</th>
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<tbody>
<tr>
<td>Lect</td>
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<td>Lab</td>
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D. **METHODS OF INSTRUCTION (TYPICAL)**
   *Instructors of the course might conduct the course using the following method:*

   1. Lectures and demonstrations to explain/illustrate use of commands in AutoCAD.

   2. In-class review/critique of professional drawings.

   3. In-class review of drawing standards and industry accepted "best practices."

E. **ASSIGNMENTS (TYPICAL)**

   1. **EVIDENCE OF APPROPRIATE WORKLOAD FOR COURSE UNITS**
      *Time spent on coursework in addition to hours of instruction (lecture hours)*

      a. Weekly computer assignments based on lecture content. Students will create various AutoCAD drawings which require the use of multiple commands.

      b. Students will prepare for periodic quizzes/exams based on assignments given.

   2. **EVIDENCE OF CRITICAL THINKING**
      *Assignments require the appropriate level of critical thinking*

      a. Assignments will include creation of drawings in AutoCAD given an existing drawing or sketch.

      b. Example assignments include:

         i. Recreate the drawing by creating blocks for standard hardware.

         ii. Recreate the drawing by placing the following on separate layers: visible lines, hidden lines, dimensions and text.

F. **TEXTS AND OTHER READINGS (TYPICAL)**

   1. Other: No textbook required.
III. **DESIRED LEARNING**

A. **COURSE GOAL**
   As a result of satisfactory completion of this course, the student should be prepared to:

   use AutoCAD software to create drawings using intermediate drawing commands, layers and blocks.

B. **STUDENT LEARNING GOALS**
   Mastery of the following learning goals will enable the student to achieve the overall course goal.

   1. **Required Learning Goals**
      Upon satisfactory completion of this course, the student will be able to:

      a. Execute the AutoCAD commands and directions discussed in a laboratory setting. See "Lab Student Learning Goals" for details.

   2. **Lab Learning Goals**
      Upon satisfactory completion of the lab portion of this course, the student will be able to:

      a. Use intermediate and advanced draw and edit commands in AutoCAD to produce drawings. Examples include hatch, divide, break.
      b. Use intermediate dimensioning techniques on drawings.
      c. Use AutoCAD layers to separate drawing entities.
      d. Create and insert blocks in AutoCAD.
      e. Create AutoCAD template files complete with drawing borders in paperspace.

IV. **METHODS OF ASSESSMENT (TYPICAL)**

A. **FORMATIVE ASSESSMENT**

   1. Weekly grading of instructor-assigned CAD drawings.
   2. Periodic quizzes/exams

B. **SUMMATIVE ASSESSMENT**

   1. Final project