

**PELLISSIPPI STATE COMMUNITY COLLEGE  
MASTER SYLLABUS**

**ADVANCED AUTOCAD W/LAB  
CET 2550**

**Class Hours: 3.0**

**Credit Hours: 4.0**

**Laboratory Hours: 3.0**

**Revised: Fall 2013**

**Catalog Course Description:**

Extends the knowledge and use of AutoCAD software commands with the continuation of training begun in CET 1100. The course covers topics involving the creation and manipulation of orthographic and three-dimensional drawings, introduction of solid modeling, the concept of creation and management of symbol libraries, and rendering the models. The students will be able to use AutoCAD to enhance their performance in producing various drafting projects, create a three-dimensional model, and turn the model into a fully detailed set of working drawings.

**Entry Level Standards:**

Must have college level English and math skills.

**Prerequisites:**

CET 1100

**Textbook(s) and Other Course Materials:**

Required Text:

*Harnessing AutoCAD 2002* Thomas A. Stellman, and G.V. Krishnan (International Thomson Publishing)

Reference:

*Technical Drawing* MacMillan (Giesecke)  
Notebook and Digital storage media

**I. Week/Unit/Topic Basis:**

<b>Week</b>	<b>Topic</b>
1	Review of AutoCAD 2D commands
2	Dimensioning setup and exercises
3	Flat pattern layout
4	Customizing AutoCAD
5	Site plans and site layout
6	Floor plans

- 7 Introduction to AutoCAD 3D environment
- 8 Creating and manipulating surfaces
- 9 Creating and manipulating solids
- 10 Furniture models
- 11 Building models
- 12 Creating lights and materials
- 13 Rendering
- 14 Final Project
- 15 Final Exam Period

## **II. Engineering Technology General Outcomes (Educational objectives)**

- I. Apply basic engineering theories and concepts creatively to analyze and solve technical problems
- II. Utilize with a high degree of knowledge and skill equipment, instruments, software, and technical reference materials currently used in industry.
- III. Communicate effectively using developed writing, speaking, and graphics skills.
- IV. Assimilate and practice the concepts and principles of working in a team environment.
- V. Obtain employment within the discipline or matriculate to a four year program in engineering or industrial technology

## **III. Engineering Technology Concentration Competencies\***

Students will:

- A. Apply the knowledge, techniques, skills, and modern tools for the concentration of study to specifically defined engineering technology activities
  - B. Demonstrate the knowledge of mathematics, science, engineering and technology to engineering technology problems using developed practical knowledge
  - C. Conduct and report the results of standard tests and measurements, and conduct, analyze and interpret experiment or project results
  - D. Function effectively as a member of a technical team
  - E. Identify, analyze and solve specifically defined engineering technology-based problems
  - F. Employ written, oral and visual communication in a technical environment
- At the program level all 6 competencies apply to roman numerals I – V of the Engineering Technology General Outcomes (Educational objectives) listed above.

## **IV. Course Goals\*:**

### **The course will**

1. Create and use prototype drawings. (A)
2. Use all drawing commands to make professional quality drawings. (A,F)
3. The ability to create and use symbols and blocks. (A,B)
4. Basic understanding of creation and manipulation of three-dimensional images. (A,B,C,F)
5. Basic understanding of Windows environment, use of other software and standards as required in a professional environment. (A,B,F)
6. The ability to use various computer applications to communicate in professional environment. (A,F)
7. Create 3D models that represent building environments. (A,B,F)
8. Create plans, elevations, sections, details and other drawings typically required by building industry. (A,F)
9. Create rendered images (A,C,F)
10. Introduce customizing the AutoCAD environment. (A,B,E)

\*Capital letters after course goals reference the competencies of the Engineering Technology concentrations listed above.

### **V. Expected Student Learning Outcomes\*:**

Students will be able to:

- a. Create and use a prototype drawing with layers, dimstyle, textstyles, attributes. (1)
- b. Demonstrate knowledge of drawing, dimensioning and modifying commands. (8)
- c. Create auxiliary views (8)
- d. Create section views (8)
- e. Create 3-dimensional models. (7)
- f. Print in model and paperspace to specified scales. (8)
- g. Use the xreference command to create and assembly drawings. (8)
- h. Manipulate perspective view and lighting in a 3D model. (7,9)
- i. Apply materials to a model. (7,9)
- j. Use Word, Excel, and media player. (5,6)
- k. Create Workspace, menu and pallet in AutoCAD. (10)

\*Numbers after Expected Student Learning Outcomes reference the course goals listed above.

### **VI. Evaluation:**

A. Testing Procedures:

Tests, quizzes, timed drawings can be used at the instructor's discretion.

B. Laboratory Expectations:

Drawings will be assigned for completion as laboratory exercises. These drawings will comprise the majority of student's grade.

Reports and other assignments will be assigned for completion as laboratory exercises.

NOTE: Laboratory assignments cannot be completed during the scheduled class times. Students will be expected to schedule laboratory times to complete assignments.

C. Field Work:

The student will be expected to research additional resources (library, films, professionals, professional documents, staff, etc.).

D. Other Evaluation Methods:

A portfolio of students work will be submitted

E. Grading Scale:

A	90-100
B+	85-89.99
B	80-84.99
C+	75-79.99
C	70-74.99
D	60-69.99
F	Below 59.99

**VII. Policies:**

A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared

by another person or agency that sells term papers or other academic materials to be presented as one's own work.

- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

C. Accommodations for disabilities:

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by sending email to [disabilityservices@pstcc.edu](mailto:disabilityservices@pstcc.edu), or visiting Goins 127, 132, 134, 135, 131. More information is available at <http://www.pstcc.edu/sswd/>.

D. Other Policies:

**Safety and Equipment Abuse:**

Repeated safety violations will result in a reduction of final grade, at the instructor's discretion. Flagrant violations which result in equipment damage or personal injury could result in automatic failure of the course