PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

ARCHITECTURAL 3D MODELING W/LAB
CET 2560

Class Hours: 3.0   **Credit Hours: 4.0**

Laboratory Hours: 3.0   **Revised: Fall 2013**

Catalog Course Description:

An architectural modeling and drafting class using AutoDesk's Architectural Desktop. The course will use Architectural Desktop placement commands to model walls, doors, windows, floor slabs, roof, kitchen appliances, bathroom fixtures and other components of a building. The student will generate dimensioned plans, sections, elevations and wall sections from the 3D digital model. Students will also create a digital walk-through and rendered images of the model.

Entry Level Standards:

Basic knowledge of a CAD application such as AutoCAD or Microstation is required.

Prerequisites:

CET 1310 or consent of instructor.

Textbook(s) and Other Course Materials:

 Textbook:
AutoDesk Architecture 2008: A Comprehensive Tutorial, Prentice Hall, H. Edward Goldberg
Reference:
 Architectural Graphic Standards (McGraw-Hill)
 Sweets Building Products Catalog & Sweets On-line
 International Building Code
Materials:
 1. Notebook
 2. Architectural scale
 3. Digital storage media

I. Week/Unit/Topic Basis:

Week	Topic
1	Class objectives and organization, Log-in procedures for computer. Review of Architectural drawing concepts, Basic CAD commands and environment settings.
2	Architectural Desktop environment, pallets, commands, projects, placing and modifying walls
3	Overview Project; Elements, Constructs, Views, Sheets; Introduction to projects & drawing sheets for plans, elevations, sections.

4	Overview Project; Modify walls, doors, windows, roof plan
5	Overview Project; Sections, elevations, site plan
6	Finalize Overview Project and print
7	Create Project 2: Define project parameters, create element files
8	Project 2 floor plans; wall styles
9	Continue Project 2 floor plans; door styles, window styles
10	Project 2 foundation plan, site plan
11	Project 2 Roof plan, profile definitions
12	Project 2 Views: Annotated floor plans, foundation plan, roof plan
13	Project 2 Views: Elevations & Sections
14	Project 2 Sheets; Floor plans, Foundation Plan, Framing Plans, Roof Plan, Sections, Elevations, Site plan
15	Final exam period; complete Project 2, turn in hardcopy set & electronic files

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. Use Architectural Desktop application to create virtual model of a building. (A,B,E,F)

2. Relate material sizes, equipment requirements and codes requirements to virtual model. (A,E,F)

3. Demonstrate parametric relationship of a database and virtual model. (A,B,E)

4. Use virtual model to generate standard drawings required by industry. (A,B,F)

5. Produce annotated architectural drawings on the computer. (A,B,F)

6. Use virtual model to create rendered images. (A,F)

7. Apply industry practices to project development. (A,B)

*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 a virtual model of a building. (1,2,3,7) *Communication Outcome, Technological Outcome*

b. Manipulate virtual model with parametric database. (2,3) *Mathematics Outcome, Communication Outcome, Technological Outcome*

c. Evaluate model to verify design intent and code compliance. (1,7) *Communication Outcome, Technical Outcome*

d. Use standard industry reference materials in electronic format and hardcopy. (7) *Communication Outcome, Technological Outcome*

e. Create rendered views of virtual model with Architectural Desktop. (6) *Communication Outcome, Technological Outcome*

f. Use three-dimensional model to generate plans, sections and elevations for production drawings. (5) *Communication Outcome, Technological Outcome*

g. Use dimensioning tools to completely and properly dimension final drawings as well as use annotation tools to completely annotate final drawing. (1,4,7) *Technological Outcome, Mathematics Outcome*

h. Use word processing and spreadsheet to generate reports and memos and calculations. (7) *Communication Outcome, Technological Outcome, Mathematics Outcome*

i. Use CAD application to generate plots according to industry standards. (7) *Technological*

Outcome, Communication Outcome, Mathematics Outcome

      j.   Complete a basic set of architectural drawings of professional quality. (5,7) *Active Learning Strategies, Active Learning Strategies, Technical Outcome*

*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, 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