SITE PLANNING & DEVELOPMENT W/ LAB
CET 2220

Class Hours: 2.0 Credit Hours: 3.0
Laboratory Hours: 3.0 Revised: Fall 2004

Catalog Course Description:

Basic concepts and design considerations in site planning and development. Topics include
topography, storm water drainage, retention basins, sanitary sewer considerations, subdivision
planning and pavement alignment and design. AutoCAD Land Desktop software is taught in the
development of a parcel of land.

Entry Level Standards:

Students must be adept in applying their background in trigonometry, geometry and algebra to the
solution of land development related problems. Previous surveying and CAD experience or
education is helpful.

Prerequisites:

None

Textbook(s) and Other Course Materials:

Text:
Land Desktop 3 Update AOTC CW, Autodesk, Autodesk
Reference:
Other:
- Scientific Calculator
- Paper
- Pencil

I. Week/Unit/Topic Basis:

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<th>Week</th>
<th>Topic</th>
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| 1    | Lecture: Site Investigation  
Lab: Zoning Ordinances |
| 2    | Lecture: Subdivision Regulations  
Lab: Subdivision Regulations |
| 3    | Lecture: Street and Lot Layout; EXAM 1  
Lab: Street and Lot Layout |
| 4    | Lecture: Survey Calculations Review |
Lab: Intro to Land Desktop

5 Lecture: Route Survey
   Lab: Project Setup

6 Lecture: Route Survey (continued)
   Lab: Project Point Control

7 Lecture: Route Survey (continued); EXAM 2
   Lab: Generating Contours

8 Lecture: Hydrologic Cycle
   Lab: Conceptual Plan setup

9 Lecture: Computer Applications
   Lab: Horizontal Road Alignment

10 Lecture: Storm Water Runoff
   Lab: Horizontal Road Alignment

11 Lecture: Storm Water Runoff
   Lab: Subdividing into Lots

12 Lecture: Storm Drainage Design
   Lab: Subdividing into Lots

13 Lecture: Storm Drainage Design
   Lab: Drainage Easements

14 Lecture: Computer Applications/Erosion and Sedimentation Control
   Lab: Complete Concept Plan

15 FINAL EXAM

II. Course Objectives*:

A. Understand and interpret governmental zoning laws. I, II, III

B. Understand and interpret governmental subdivision regulations. I, II, III

C. Understand the basic principles of boundary and route surveying and the corresponding calculations. II, III

D. Lay out streets and lots for maximum density and safety. III, IV, V

E. Design Storm Sewer and Detention Basin System for a subdivision. II, III, IV

F. Design a basic development of a subdivision from concept to final plan. III, IV, V

*Roman numerals after course objectives reference goals of the CET program.

III. Instructional Processes*:

Students will:

1. Actively listen to class lectures and participate in class activities that develop and reinforce comprehension of the theories, concepts, principles and applications of distance
measurement using surveying instruments. *Communication Outcome, Problem Solving & Decision Making Outcome, Active Learning Strategies*

2. Work individually and in teams to complete lab assignments related to the theories, concepts and principles covered in the lecture portion of the course. *Communication Outcome, Problem Solving & Decision Making Outcome, Information Literacy Outcome, Active Learning Strategies, Transitional Strategies*

3. Use EXCEL Spreadsheets, WordPerfect/Word or other appropriate software to generate written home work assignments. *Communication Outcome, Problem Solving & Decision Making Outcome, Technological Literacy Outcome, Numerical Literacy Outcome, Information Literacy Outcome, Active Learning Strategies*

4. Use AutoCAD and related software to generate a plat design to standards presented by the instructor. *Communication Outcome, Problem Solving & Decision Making Outcome, Technological Literacy Outcome, Numerical Literacy Outcome, Active Learning Strategies, Transitional Strategies*

*Strategies and outcomes listed after instructional processes reference TBR’s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.*

**IV. Expectations for Student Performance***:

Upon successful completion of this course, the student should be able to:

1. Identify the permitted land use in accordance with local zoning ordinances. A

2. Identify the procedure for developing preliminary subdivision plans from developers conception. A,B,F

3. Identify the procedure for finalizing subdivision plans from developers conception. A,B,F

4. Know terminology and minimum subdivision requirement. A

5. Explain efficient methods used in street and lot layout. D

6. Traverse closure calculations. C

7. Traverse adjustment calculations (compass, transit and Crandell's rule). C

8. Calculate a horizontal curve. C

9. Calculate a vertical curve. C

10. Calculate minimum horizontal and vertical sight distances. C

11. Describe and explain the hydrologic cycle. E

12. Calculate direct storm runoff. E

13. Understand the function of each part of a storage and control structure. E

14. Understand the types of water flow. E

15. Understand the layout and design of an urban storm drainage system. E
16. Design a storm sewer system. E,F
17. Design a detention basin. E,F

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures:

Three examinations are scheduled. They will be True/False, Multiple Choice, Matching, and Short Answer Essay. Each exam is supplemented with a take-home exam which is primarily problem solving. Students may make up one exam due to absences. Examination will normally be given as scheduled. Should a student have a planned vacation, operation, etc. occur during a scheduled exam, every effort should be made to take the exam prior to the scheduled absence. When a student misses an exam due to illness, he must contact the instructor immediately upon return and make-up the exam within one week.

B. Laboratory Expectations:

Quizzes:
Quizzes may be given by the instructor. Most quizzes will be unscheduled and randomly given. They cover the previous sessions material or the reading assignment for that day. There is no make-up or extra credit given for quizzes missed.

Written Assignments:
Students may be required to hand in answers to select questions at the end of each chapter or other appropriate homework at the instructor's discretion. All written assignments must be handed in on 8 x 11 engineering notepad, typing paper, or forms provided by your instructor. Students are encouraged to use word processing to generate their reports. All written assignments will be assessed a 10% penalty for each school day it is late. All student work submitted for evaluation may be retained by the instructor.

C. Field Work:

Semester Project: Each student will complete a plat design as required by the instructor.

D. Other Evaluation Methods:

A subjective evaluation based on attendance, classroom participation and attitude may be included (10%).

E. Grading Scale:

Final grades will be computed from the grades obtained on homework, quizzes and examinations as follows:
Quizzes & Homework = 10% - 20%
Semester Project = 25% - 30%
Examinations = 45% - 60%

Grades are based on the following:
90 - 100 A
80 - 90 B
70 - 80 C
60 - 70 D
Below 60 F
VI. Policies:

A. Attendance Policy:

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course (Pellissippi State Catalog). Individual departments/programs/disciplines, with the approval of the vice president of Academic and Student Affairs, may have requirements that are more stringent.
It is the student's responsibility to attend every scheduled class activity on time.
Students are responsible to get assignments missed and to make-up any work missed during an absence.

B. Academic and Classroom Misconduct:

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. In addition to other possible disciplinary sanctions that may be imposed as a result of academic misconduct, the instructor has the authority to assign either (1) an F or zero for the assignment or (2) an F for the course.

C. Accommodations for disabilities:

If you need accommodation because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please inform the instructor immediately. Privately after class or in the instructor's office.
To request accommodations students must register with Services for Students with Disabilities: Goins 127 or 131, Phone: (865) 539-7153 or (865) 694-6751 Voice/TDD.