

PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

CONSTRUCTION METHODS
CET 1010

Class Hours: 4.0

Credit Hours: 4.0

Laboratory Hours: 0.0

Revised: Fall 2013

Catalog Course Description:

The basic techniques and fundamentals essential in erecting wood frame, steel frame and reinforced concrete frame buildings. The study involves the various phases from site investigation through finished work.

Entry Level Standards:

Students entering this course should have some note-taking and study skills. They need some reading comprehension and written communication skills. Students may enroll in this course concurrently with COLL, Learning Support Writing and Math courses.

Prerequisites:

None

Textbook(s) and Other Course Materials:

Text:

Principles and Practices of Commercial Construction, 8th edition, Ronald C. Smith. Prentice Hall Publishing Company

CET 1010 Construction Methods Course Booklet

Reference:

Building Construction Illustrated, Francis D. K. Ching. Van Nostrand Reinhold Publishing Company

Architectural Drawing and Light Construction, Edward J. Miller. Prentice Hall Publishing Company

Other:

- USB Drive
- Paper
- Pencil

I. Week/Unit/Topic Basis:

Week	Topic
1	Introduction & Building Siting Factors
2	Site Investigation
3	Structural Systems & Building Load

- 4 Plans and Specifications
- 5 Site Layout
EXAM 1
- 6 Excavation
- 7 Foundations (light)
- 8 Foundations (heavy)
EXAM 2
- 9 Wood Frame Systems
- 10 Wood Frame Systems
EXAM 3
- 11 Concrete Formwork, Transportation & Placement of Concrete
- 12 Concrete & Masonry Systems
- 13 Steel Frame Systems
- 14 Roofing Systems
- 15 FINAL EXAM

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. Expand student understanding and use of appropriate technical terminology in construction. A
2. Enhance the student's knowledge of basic theoretical and practical concepts involved in light construction. A
3. Enhance the student's knowledge of basic theoretical and practical concepts involved in heavy construction. A
4. Expand student understanding of the basic construction components and methods involved in light construction. A
5. Expand student understanding of the basic construction components and methods involved in heavy construction. A
6. Foster the ability to complete assigned tasks in a timely fashion. F
7. Foster the ability to prepare written summaries of topical research. F
8. Foster the ability to present an oral report on areas of topical research. F
9. Enhance the student's self initiative to complete all assignments on time. F

*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. List building site design factors. 1, 2, 3 & 7
- b. List different types of architectural drawings. 1, 2, 3 & 7
- c. Describe the basic building elements and types of loading. 1, 2, 3 & 7
- d. Identify the stresses which occur in simple beams and columns. 1, 2, 3 & 7
- e. List the methods of subsurface exploration along with their limitations. 1, 2, 3 & 7
- f. Identify foundation design factors. 1, 2, 3 & 7
- g. List the components of basic foundation systems. 1, 2, 3 & 7
- h. List the characteristics of basic foundation systems. 1, 2, 3 & 7

- i. List the primary wood frame floor system design factors. A, B & D
- j. Identify basic wood frame floor system components. 4 & 7
- k. List the characteristics of basic wood frame floor system types. 4 & 7
- l. Identify the primary wood frame wall system design factors. 4 & 7
- m. List the basic wood frame wall system components. 4 & 7
- n. List the characteristics of basic wood frame wall system types. 4 & 7
- o. Identify the primary wood frame roof system design factors. 4 & 7
- p. List the basic wood frame roof system components. 4 & 7
- q. List the characteristics of basic wood frame roof system types. 4 & 7
- r. Identify the primary commercial floor system design factors. 5 & 7
- s. List the basic commercial floor system components. 5 & 7
- t. List the characteristics of basic commercial floor system types. 5 & 7
- u. Identify the primary steel frame system design factors. 5 & 7
- v. List the basic steel frame system components. 5 & 7
- w. List the characteristics of basic steel frame system types. 5 & 7
- x. Identify the primary formwork system design factors. 5 & 7
- y. List the basic formwork system components. 5 & 7
- z. Identify the primary reinforced concrete frame system design factors. 5 & 7
- aa. List the basic reinforced concrete frame system components. 5 & 7
- bb. List the characteristics of basic reinforced concrete frame system types. 5 & 7
- cc. Identify the primary commercial roof system design factors. 5 & 7
- dd. List the basic commercial roof system components. 5 & 7
- ee. List the characteristics of basic commercial roof system types. 5 & 7
- ff. List the characteristics of basic types of commercial roofing systems. 5 & 7

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

VI. Evaluation:

A. Testing Procedures:

Four examinations are scheduled. They will be True/False, Multiple Choice, Matching, and Short Answer Essay. The exams are given over the internet. Students normally have 1 week to complete the exam.

When a student misses an exam, he must contact the instructor immediately upon return and make-up the exam within one week.

B. Laboratory Expectations:

n/a

C. Field Work:

n/a

D. Other Evaluation Methods:

Quizzes:

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

Written Assignments:

A minimum of three written reports will be required. They will consist of a synopsis of a magazine article. Topics will be provided by the instructor. Students may also 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, lined paper with smooth edges or forms provided by your instructor. Students are encouraged to use word processing to generate their assignments. 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.

Oral Reports:

Each student is required to make a 5 - 6 minute oral presentation on a topic assigned by the instructor. Failure to give an oral presentation will result in a failing grade in the class.

Miscellaneous:

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 and homework = 10 - 30%

Examinations = 60 - 80%

Oral Report = 15 - 20%

Attendance/Participation = 0 - 10%

Grades are based on the following:

91 - 100 A

86 - 90 B+

81 - 85 B

76 - 80 C+

71 - 75 C

60 - 70 D

Below 60 F

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