Class Hours: 2.0
Laboratory Hours: 3.0
Credit Hours: 3.0
Revised: Fall 06

Catalog Course Description:

The interpretation of building plans, preparation of quantity surveys dealing with individual sections of work, computation of labor costs, pricing of material costs, overhead, and profit. This class also includes an introduction to Timberline software.

Entry Level Standards:

Students entering this course should have a general familiarity with construction methods, materials, and terminology. A basic familiarity with architectural drawings will also be expected. This basic understanding may come from previous curriculum courses or from field experience. Math skills should be sufficient to allow manipulation of simple algebraic equations. Communication skills should be sufficient for the comprehension and presentation of technical data.

Prerequisites:

None

Textbook(s) and Other Course Materials:

Text:


Reference:


*National Construction Estimator*, Craftsman Book Company.

*Walker's Building Estimator's Reference*, Frank R. Walker. Frank R. Walker Company

Other:

- Scientific Calculator
- Paper - Pencil

I. Week/Unit/Topic Basis:

<table>
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<th>Week</th>
<th>Topic</th>
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| 1    | Lecture: Introduction  
      | Lab: Types of Contracts and Estimates |
| 2    | Lecture: Construction Drawings & Specifications  
      | Lab: Construction Drawings & Specifications |
3 Lecture: Excavation Quantities
Lab: Excavation Quantities – Text example

4 Lecture: Excavation Quantities
Lab: House – Special Project

5 Lecture: Excavation Quantities
Lab: House – Special Project

EXAM 1

6 Lecture: Concrete Quantities
Lab: Concrete Quantities – Text example

7 Lecture: Concrete Forms and Miscellaneous
Lab: Concrete Forms and Miscellaneous – Text example

8 Lecture: Masonry Quantities
Lab: Masonry Quantities – Text example

EXAM 2

9 Lecture: Wood Frame - Floor
Lab: Wood Frame – Floor – Text example

10 Lecture: Wood Frame - Wall
Lab: Wood Frame – Wall – Text example

11 Lecture: Wood Frame - Roof
Lab: Wood Frame - Roof - Text Example

EXAM 3

12 Lecture: Material & Labor Costs
Lab: Material & Labor Costs

13 Lecture: Overhead, Profit and Miscellaneous Costs
Lab: Overhead, Profit and Miscellaneous Costs

14 Lecture: Final Bid Preparation
Lab: Final Bid Preparation

15 FINAL EXAM

II. Course Objectives*:

A. Determine the types of materials, the construction methods, and the architectural concepts as presented in architectural drawings and specifications. A, C, F, G

B. Use the “CSI” specification format in the comprehension and presentation of quantity survey and cost-estimate data. A, C

C. Perform a quantity survey on a simple structure from a set of plans and specifications. A, C, F, G, I, J

E. Calculate indirect costs using various methods of allocating the individual cost to the project cost. A, C, F, G, I, J, K, M

F. Demonstrate self initiative to complete all assignments on time. E

*Letters after course objectives reference CET Program Outcomes (as required by ABET).

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, Technological Literacy 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, Technological Literacy Outcome, Active Learning Strategies

3. Use EXCEL Spreadsheets, MC 2, WordPerfect/Word or other appropriate software to generate written homework assignments. Communication Outcome, Technological Literacy Outcome, Mathematics Outcome, Active Learning 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. Interpret various types of architectural drawings. A

2. Explain the purpose of construction specifications. A

3. Explain the specific characteristics indicated by "plans". A

4. Explain the specific characteristics indicated by "elevations". A

5. Explain the specific characteristics indicated by "sections". A

6. Explain the specific characteristics indicated by "details". A

7. Explain the specific characteristics indicated by "schedules". A

8. Perform the methods of material takeoff sequencing. B

9. Calculate material quantities. C

10. Identify basic categories of material prices. D
11. Identify common material units used for pricing. D
12. Explain the factors affecting labor wages. D
13. Identify labor performance factors. D
14. Identify the types of overhead expenses. E
15. Calculate equipment depreciation costs. E
16. Calculate capital equipment costs. E
17. Identify the means of calculating rental equipment costs. E
18. Explain the concept of profit as a cost. E
19. Present construction material and processes data in the proper "CSI" format. A & B
20. Takeoff material quantities in the proper sequence. C
21. Accurately calculate material quantities. C
22. Properly price material. D
23. Properly calculate labor hours and price. D
24. Properly identify and price indirect costs. E
25. Apply appropriate profit margins. E
26. Properly complete a bid proposal form. E

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

V. Evaluation:

A. Testing Procedures:

Four examinations are scheduled. They will be True/False, Multiple Choice, Matching, and Short Answer Essay. Each exam may be 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 session’s 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, 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.

C. Field Work:

N/A

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 = 35% - 45%
- Examinations = 55% - 65%

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.

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 accommodations 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. Please see the instructor privately after class or in his/her 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 going to Goins 127 or 131 or by phone: 694-6751(Voice/TTY) or 539-7153.

D. Use of Equipment:

Any act of misuse, vandalism, malicious or unwarranted damage or destruction, defacing, disfiguring, or unauthorized use of property/equipment belonging to Pellissippi State is subject to disciplinary sanction.