

University of Toledo

Construction Engineering Technology

Master Syllabus

Course Title: Construction Materials and Codes **Course Code & Number:** CET-1150

Credit Hour Total: 3 **Weekly Contact Hours Lecture:** 3 **Lab Hours:** 0

Prerequisite(s): None

Text: Fundamentals of Building Construction, Materials and Methods 6th Ed.
Allen & Iano, Joseph Wiley & Sons, ISBN: 978-0470075688

The Essentials of MLA Style: A Guide to Documentation for Writers of Research Paper
Trimmer, Mariner Books, ISBN: 0395883164

Software: None

Course Coordinators: Beall

A. **Course Description** (Approved catalog description.)

This course consists of an introduction to terminologies and properties of construction materials and techniques from foundation, floor, wall and roof systems, as well as thermal and moisture protection and finish work. Sources of manufacturer's material information are discussed. An introduction is made into the various building codes and code organizations as related to new and existing buildings.

B. **Related Program Outcomes:**

Upon successful completion of the Construction Engineering Technology program, graduates will have:

ABET/Student Outcomes

- 1) an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;
- 3) an ability to apply written, oral, and graphical communication in broadly defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;

The course also supports coverage of the following curricular areas:

Program Criteria Outcomes

- a) the utilization of techniques that are appropriate to administer and evaluate construction contracts, documents, and codes;
- b) the estimation of costs, estimation of quantities, and evaluation of materials for construction projects;
- g) the selection of appropriate construction materials and practices;

Discipline Specific Content

+ Industry standards & codes

Evidence of the success of these outcomes is provided by the collection and analysis of:

- Final Exam Results
- Construction Research Essays

C. Course Objectives:

Upon completion of this course the student will have:

1. An understanding of the terminology and systems regarding buildings.
2. An understanding of the use and limitations of building materials.
3. An understanding of building codes with relation to the use of specific materials.
4. An understanding of building codes with relation to the size and occupancy of buildings.
5. An understanding of life safety matters especially as they relate to building egress.

D. Course Outline – Major Content Areas:

1. Building Construction
2. Foundations
3. Wood
4. Fire and Smoke Codes
5. Wood and Timber Framing Construction
6. Masonry Construction
7. Steel Framing Construction
8. Concrete Construction
9. Roofing
10. Glass and Glazing
11. Windows and Doors
12. Cladding Systems
13. Interior Finishes

E. Suggested Laboratory Tests

None