

Virginia Western Community College

ARC-133

Construction Methods and Procedures

Prerequisites

None

Course Description

Studies materials used in construction of buildings, covering foundations to structural framing systems. Includes appropriate use of materials for various construction types. Includes specification of materials and installation procedures; types of specifications and writing procedures; bidding procedures and, contract documents.

Semester Credits: 3 Lecture Hours: 3 Lab/Recitation Hours: Select Hours

Required Materials

Textbook:

Building Construction Illustrated, 5th Edition, author: Ching, John Wiley & Sons, ISBN 9781118458341

Other Required Materials:

Calculator

Access to Excel (or other spreadsheet software)



Course Outcomes

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

- Describe the general overall procedure for building construction, including both the design and construction phases.
- Describe the purpose of contract documents, and how the various documents come together to form a legal contract between owner and contractor.
- Understand the process a contractor goes through, to estimate the cost of a building and prepare a bid in order to pursue the work.
- Note the various physical properties that are considered when selecting building materials, and understand how common building materials are produced.
- Understand structural principles related to loads applied to a building, and how the building resists those loads.
- Describe how the different components of a building are constructed, using various materials and framing strategies.

Topical Description

Week	Topic
1	Intro, construction process overview
2	Contract Documents, specs
3	Cost estimating, bid process
4	Materials
5	Materials
6	Structural loads and theory
7	Structural theory, exam review
8	Exam



- 9 Foundation systems
- 10 Foundation systems
- 11 Floor systems
- 12 Floor systems
- 13 Wall systems
- 14 Wall systems
- 15 Roof systems, exam review
- 16 Final Exam

Notes to Instructors

1. All instructors teaching this course will use the same textbook.
2. Course content within this course may be covered at the instructor's discretion but with all topics being understood.
3. This course and its grades will be structured around a minimum of a midterm exam, final exam, and homework.
4. At the end of the semester, all instructors will give the outcome assessment as it relates to the final exam to the program head at the same time they prepare their student final grades.
5. A comprehensive final exam will be given, which must be at least 10% of the final grade.

