

Course Code: CIT 111

Course Title: Construction Materials I

Department: Applied Sciences and Technologies

Effective Date: Summer 2026

PCS Code: 1.2 - Occupational/Technical Instruction

CIP Code: 46.0201

Repeatability: 0

Credit Hours

Catalog Notation: 2-2-3

Credit Hour Distribution:

Lecture: 2

Lab: 2

Clinical: 0

Total: 3

General Course Information

Catalog Description

Primary construction materials, their properties, and proper applications: concrete, aggregates, masonry, wood, and steel.

General Course Objectives

- The student will demonstrate understanding of basic material behaviors and proper applications.
- The student will perform basic material quality tests.

Minimum Placement Levels

English	Reading	Math
Placement into ENG 098	Placement into CCS 098	Placement out of MAT 060

Prerequisites

None

Methods of Evaluation

Minimum methods of evaluation: 8 homework assignments, 4 lab exercises, 4 site visit reports, and 2 exams.

Instructional Materials and Additional Supplies

Building Construction: Principles, Materials, and Systems, 978-0134454177

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Concrete: Mixing, sampling, testing, handling, placing, finishing, and curing	1. Explain proper sampling, handling, placing, finishing, and curing methods. 2. Discuss use of various concrete admixtures and reasons for use. 3. Test air content and slump of plastic concrete. 4. Explain manufacturing processes.	6	6	0
Aggregate: Grading, shipping, storage, and testing	1. Perform a sieve analysis and check aggregate gradation against specifications. 2. Describe good storage and handling practices for aggregate. 3. Explain manufacturing processes.	4	4	0
Masonry: Brick types and sizes, concrete block types and sizes, construction techniques	1. Explain brick characteristics such as strength and weathering. 2. Discuss concrete block types and construction methods. 3. Discuss desirable properties of mortar and the constituents. 4. Explain manufacturing processes.	4	4	0
Wood - Lumber: Grade stamps, sizes, moisture, measurement, species, etc.	1. Identify lumber characteristics from the grade stamp. 2. Test and compute moisture content. 3. Select appropriate wood members using span tables. 4. Explain manufacturing processes.	5	5	0
Engineered Wood Products: Grade stamps, sizes, types, and applications	1. Explain how engineered wood products are manufactured, and differentiate between grades. 2. Select a suitable grade of product for a specified use.	1	1	0
Steel Products	1. Identify various structural steel shapes and state some uses for them. 2. Explain the purposes for use of reinforcing steel in concrete. 3. Differentiate sizes of rebars. 4. Explain structural fabrication process.	5	5	0
Material Characteristics	1. Compute material stress, strain, modulus of elasticity, thermal expansion, and unit weight.	5	5	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	30	0