

Course Title:	Construction Materials
Course Designation:	COTM3051
Course Credit Hours	3Cr. Hrs. (ECTS Credits 5)
Course Prerequisite	None
Course Objectives	At the end of the course the student will understand: ➤ Understand different types of construction materials and able to test the strength. ➤ Understand laboratory report writing procedures.

COURSE OUTLINE

Chapter One

1.Introduction to construction to Materials; (3 week)

1.1 Classification, Nature and Properties of Materials

1.1.1 Mechanical properties of construction materials:

1.1.2 Nature and performance of materials under load

Chapter Two

2. Building Stones

2.1 Classification Stones

2.2 Selection and Application of Stone in Buildings Construction Material

Chapter Three

3.Bricks and Building Blocks

3.1 Classification Blocks

3.2 Manufacture of Bricks Blocks

Chapter Four

4.Binding Materials (Cementing materials);

4.1 Lime

4.1.1 Manufacture,

4.1.1 Slaking

4.1.2 Hydration and

4.1.3 Classification

4.1.4 Uses

4.2 Cement

4.2.1 Manufacture

4.2.2 Composition properties

4.2.3 Types and Handling

4.2.4 Uses

4.3 Gypsum

4.3.1 Manufacture

4.3.2 Composition properties

4.3.3 Types and Handling

4.3.4 Uses

Chapter Five

5. Types and Properties of Cement

5.1 Mortar;

5.2 Concrete, Concrete Making Materials

5.3 Aggregate

5.4 Mix Design

5.5 Fresh and Hardened Concrete Properties

5.6 Concrete Admixtures;

Chapter Six

6. Timber

6.1 Timber and Timber Products

Chapter Seven

7. Metals

7.1 Classification of metals

7.2 Mechanical Tests of metals

Evaluation (may be some of them are surprising): -

- ✓ Class assignments 15%,
- ✓ Tests 15%,
- ✓ Quiz 10%,
- ✓ Lab report 10%,
- ✓ Presentation 10 % and Final Exam 40%

Attendance Requirements: - Minimum of 90% during lectures & 100% of Lab

REFERENCES:

- 1, Waton, Construction Materials & processes. 1986.
- 2, Mitchell's, Materials.
- 3, G.D. Taylor and B. J smith, Materials in construction, 1985.
- 4, Neil Jackson, civil Engineering Materials, 5th edition, 1996