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Course Title: **Civil Engineering Materials**

Type: **Theory**                      Credit Hours: **02**

Approved Under Reference: \_\_\_\_\_

Verified By: \_\_\_\_\_                      Signature: \_\_\_\_\_

Date: \_\_\_\_\_                      Effective From: \_\_\_\_\_

Effective For Session: \_\_\_\_\_                      Effective To: \_\_\_\_\_

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**Cements, Ceramics, and Refractories:**

Manufacture, properties, and application of lime, cement, ceramic and bricks  
Mortars and concrete, Pozzolanic material, effects of various chemicals on cement and concrete.  
Methods of protection, strength and test of building stone. Quarrying and dressing of stone.

**Timbers:**

Varieties and uses of important timbers, method of seasoning and sawing Decay, seasoning and preservation of timber, laminated materials.

**Glass and Plastics:**

Composition, varieties, properties and use of glass, plastic, laminates and adhesive.

**Metals:**

Composition and properties of ferrous and non ferrous metals used in civil engineering. Effect of various heat treatments on the properties of steel and its alloys. Corrosion and methods of corrosion control. Properties of thermal insulation material for use in buildings.

**Paints and Varnishes:**

Composition, preparation, properties, test and uses of paints, plasters, varnishes and distempers.

**Other Materials:**

Acoustical material and geo-textiles, properties and uses of asphalt, bitumen, rubber and asbestos, laminates and adhesive.

**Books recommended:**

1. Neville A. Properties of Concrete, English Language Book Society
2. Smith R. C. Material of Construction, McGraw-Hill

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**NWFP University of Engineering & Technology Peshawar**

Document Type: **Course Outline**

Department: **Civil Engineering**

Course No.: **CE-106**

Serial No.: \_\_\_\_\_

Course Title: **Civil Engineering Materials**

Type: **Lab**

Contact Hours: **01**

Approved Under Reference: \_\_\_\_\_

Verified By: \_\_\_\_\_

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Date: \_\_\_\_\_

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1. Gradation of coarse aggregate
2. Gradation of fine aggregate
3. Fineness of cement
4. Setting time
  - Normal Consistency
  - Initial Setting time
  - Final Setting time
5. Tensile Strength of Briquette
6. Compressive strength of mortar cube
7. Soundness test of Cement
8. Density of Cement
9. Slump Test