هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification
(Bachelor)

Course Title:	Properties and Testing of Materials
Course Code:	CE 260
Program:	Architecture
Department:	Architecture
College:	Architecture and Planning
Institution:	Qassim University

1. Course Identification

Course general Description:
This course aims to study engineering Materials which used in construction sites, as well as classification of engineering materials: properties and testing of reinforcing bars. Cement: Manufacture, properties, types of cement, tests. Aggregate: Types, properties, grading, tests. Mixing water, concrete: proportions, mixing, handling, placing, fresh and hardened properties, tests, curing. Bricks. Timber. Glass. Ceramics. Testing machines. Measuring devices. Tests: Tension, compression, bending and hardness.
Course Main Objective(s):
In this course, the students will: In this course, the students will be to: • Understand of the mechanical properties of different structural materials for use in design and constructions, knowledge of experiments and testing procedures for controlling the quality of structural materials. • Understand the properties of concrete as needed in concrete construction, including strength. • Understand the concrete ingredients including cement, water, aggregates, admixtures etc. for their optimal use in designing and proportioning concrete mixtures. Ability to use the relevant standards viz ASTM, AASHTO and ACI. • Use the concrete from design to batch, mixing, transportation, placing, consolidating, finishing. • Understand of properties, specification, and utilization of Bricks, Glass and Ceramics

2. Course Learning Outcomes (CLOs)

Code	Course Learning Outcomes	Code of CLOs aligned with program
1.0	**Knowledge and understanding**	
1.1	Recognize the principle of building structural material properties and application in using structured materials with various thinking solutions.	K-1
2.0	**Skills**	
2.1	Ability to compare structural materials intuitively based on use, limitations, and potential.	S-2
2.2	Ability to apply materials test concepts related to materials properties.	S-2
3.0	**Values, autonomy, and responsibility**	

Code	Course Learning Outcomes	Code of CLOs aligned with program
3.1	Cooperation in carrying out building materials research and studies.	V-2

3. Students Assessment Activities

No	Assessment Activities *
1.	Quizzes, Practical assignments
2.	Mid-term exam
3.	Final Exam

4. Learning Resources and Facilities

Essential References	"The Testing of Engineering Materials by H.E. Davis, G. E. Troxell and G.F.W. Hauk" Fourth Edition. "Materials" by Alan Everett, Mitchell Publishing Company Ltd. "Design and Control of Concrete Mixtures by" Fourth Edition. H.Kosmatk et al., USA
Supportive References	Illustrated lectures and a scientific material prepared according to the PowerPoint program.