The Hashemite University
Faculty of Engineering
Civil Engineering Program
Course Syllabus

Course Title:	Building Materials (3,0, 0)	**Course Number:**	110401337
Designation:	Compulsory	**Prerequisite(s):**	110402212*&110103107
Instructor:	Hisham Qasrawi	**Instructor's e-mail**	qasrawi@hu.edu.jo

Office Hours: 11:00 – 12.00: Sun., Tue, and Thur.

Required Course: Mon.and Wed:. 9:30 to 11 for sec 1 and 11 to 12:30 for sec 2
3 hours per week

Course Description (catalog): Cement (types, manufacture, properties and hydration), aggregates, fresh concrete, hardened concrete, strength, strength development, durability, mix design, compliance with specification.

Textbook(s) and/or Other Supplementary Materials:
A. M. Neville and J. J. Brooks: "Concrete Technology", Longman, Latest edition..
References: ACI 211.1, ASTM

Major Topics Covered:

Topic	No. of Weeks	Contact hours*
1. Introduction to Building Materials	2/3	2
2. Cement: Manufacture, Types and Properties	2	6
3. Aggregates: Classification, Testing and Properties	2	6
4. Water for use in concrete	1/3	1
5. Fresh Concrete	2	6
6. Production of concrete: Batching, mixing, transporting, pouring, compacting and finishing.	2	6
7. Admixtures	2	6
8. Hardened Concrete: Strength and Durability	2	6
9. Design of Concrete Mixes	1	3
10. Non-destructive testing of concrete	1	3
Total	15	45

*Contact hours include lectures, quizzes and exams

Specific Outcomes of Instruction (Course Learning Outcomes):

The primary objectives of the course are (1) classify building materials according to their uses and properties, (2) understand the composition, manufacture, and properties of cement, (3) classify cements according to their use, (4) classify aggregates according to their sizes, composition and properties, (5) choose the suitable materials for specific uses. (6) understand the properties and behavior of fresh concrete, (7) understand the properties and behavior of hardened concrete., (8) attain good knowledge about the durability of concrete structures and be able to provide early protection or remedial measures where necessary, (9) design concrete mixes , and (10), use standards and judge the suitability of the materials for use in building construction.

Student Outcomes (SO) Addressed by the Course:

#	Outcome Description	Contribution
	General Engineering Student Outcomes	
1.	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	**40%**

2.	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	
3.	an ability to communicate effectively with a range of audiences	
4.	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	
5.	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	
6.	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	20%
7.	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	40%
H=High, **M**= Medium, **L**=Low		

Grading Plan:	Exam 1	30%	28-11-2022
	Exam 2	30%	2-1-2023
	Final exam	40%	To by announced by the registrar

General Notes: Students are encouraged to visit some of the construction sites if possible.

Prepared by: *Hisham Qasrawi* **Date: 10th** Oct. 2022