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:	3 hours lectures 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.
The previous points cover a, e and k.

Student Outcomes (SO) Addressed by the Course:

#	Outcome Description	Contribution
	General Engineering Student Outcomes	
(a)	an ability to apply knowledge of mathematics, science, and engineering	M (25%)
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data	
(c)	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	
(d)	an ability to function on multidisciplinary teams	
(e)	an ability to identify, formulate, and solve engineering problems	H(70%)
(f)	an understanding of professional and ethical responsibility	
(g)	an ability to communicate effectively	
(h)	the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
(i)	a recognition of the need for, and an ability to engage in life-long learning	
(j)	a knowledge of contemporary issues	

(k)	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	L(5%)
H=High, **M**= Medium, **L**=Low		

Grading Plan:

1st Exam	30 Points	**To be announced**
2nd Exam	30 Points	**To be announced**
HWs. & Qs	********	
Final exam	40 Points	

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

Prepared by: *Hisham Qasrawi* **Date:**