

GAU, Faculty of Engineering

Course Unit Title	Construction Materials	
Course Unit Code	CVEN308	
Type of Course Unit	Compulsory, All civil engineering students	
Level of Course Unit	Undergraduate	
National Credits	3	
Number of ECTS Credits Allocated	4 ECTS	
Theoretical (hour/week)	1	
Practice (hour/week)	0	
Laboratory (hour/week)	4	
Year of Study	3	
Semester when the course unit is delivered	6	
Mode of Delivery	Face to Face	
Language of Instruction	English	
Prerequisites and co-requisites	-	
Recommended Optional Programme Components	Basic background in chemistry	
Objectives of the Course:		
<ul style="list-style-type: none"> ➤ To understand the physical properties of major construction materials, ➤ To be able to effectively evaluate, select and apply them in civil engineering practice. ➤ To have hands-on experience with testing of construction materials. ➤ To develop effective lab report writing skills. 		
Learning Outcomes		
When this course has been completed the student should be able to		Assesment.
1	To familiarize the student with typical civil engineering construction materials regarding their production, types, properties and uses in construction.	1,2,3
2	To present relationships between microstructure and macroscale material behavior, i.e., mechanical properties and durability.	2,3,5
3	To introduce students to standard methods for testing physical and mechanical properties of construction materials.	1,2,3,5
4	To build an awareness of material strength, durability, and cost to promote effective material selection, material design, and structural design.	1,2,3,4,5
5	To develop an intuitive sense of material behavior with a series of laboratory experiments	3,4,5
Assesment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work		
Course's Contribution to Program		
		CL
1	Ability to understand and apply knowledge of mathematics, science, and engineering	2
2	Ability to design and conduct experiments as well as to analyze and interpret data	5
3	Ability to work in multidisciplinary teams while exhibiting professional responsibility and ethical conduct	1
4	Ability to apply systems thinking in problem solving and system design	3
5	Knowledge of contemporary issues while continuing to engage in lifelong learning	2
6	Ability to use the techniques, skills and modern engineering tools necessary for engineering practice	4
7	Ability to express their ideas and findings, in written and oral form	3
8	Ability to design and integrate systems, components or processes to meet desired needs within realistic constraints	3
9	Ability to approach engineering problems and effects of their possible solutions within a well structured, ethically responsible and professional manner	3
10	Ability to manage time and resources effectively and efficiently while carrying out civil engineering projects	4
11	Ability to combine knowledge from different areas of civil engineering for problem solving and system design with an ethical and sustainable approach	3
CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)		

Course Contents			
Week			Exams
1		Introduction to materials of construction	
2		Understanding of Lime	
3		Understanding of Gypsum	
4		Understanding of Cements	
5		Understanding of Aggregates	
6		Fresh Concrete	
7		Hardened Concrete	
8		Concrete Mix Design	
9			Mid Term
10		Types of Bricks	
11		Types of Building Stones	
12		Understanding of plasters	
13		Identify of Steel & wood	
14		Understanding of polymers	
15			Final
Recommended Sources			
Textbook:			
1. Concrete Technology, Neville A. M., & Brooks J. J., Prentice Hall, 2008.			
2. Concrete- Microstructure, Properties and Materials, Mehta P. K., Monteiro P. J. M., McGraw- Hill, 2006.			
3. Materials of Construction, Turhan Y. Erdoğan, METU Press, 2002.			
Supplementary Material (s):			
Assessment			
Attendance	%0		
Laboratory	%20		
Midterm Exam (Written)	%30		
Quiz (Written)	%10		
Final Exam (Written)	%40		
Total	%100		
ECTS Allocated Based on the Student Workload			
Activities	Number	Duration (hour)	Total Workload(hour)
Course duration in class (including the Exam week)	15	3	45
Labs and Tutorials	3	1	4
Assignments	-	-	-
Project/Presentation/Report Writing	1	10	10
E-learning Activities	-	-	-
Quizzes	1	8	8
Midterm Examination	1	16	16
Final Examination	1	20	20
Self Study	14	2	28
Total Workload			131
Total Workload/30 (h)			4.36
ECTS Credit of the Course			4