



COURSE INFORMATION FORM

Course Name	Course Code
MATERIALS OF CONSTRUCTION	151414561

Semester	Number of Course Hours per Week		ECTS
	Theory	Practice	
4	4	0	5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
2	3			

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	The main aim of the course is to make concrete mixture design methods by using concrete and its components which are cements, aggregates, water and admixtures, and winning the ability of having solutions against the problems in applications.
Short Course Content	Content of the course is as follows: Concrete as a construction material, cement types and Portland cements, aggregates, water, concrete admixtures, ready-mix concrete, mixture design, properties of fresh concrete, production of concrete, transporting, placing, compacting, finishing, curing of concrete, mechanical and physical properties of concrete, durability, ceramic materials and masonry walls, effects of thermal and moisture on structures.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Identifies construction material ingredients	1, 7	1,2,3,5,6,10	A, D
2 Can make mixture design	2, 3	1,2,5,6,10	A, D
3 Knows the processes from production, application to cure	4, 9	1,2,5,6,10	A, D
4 Knows the characteristics of fresh state	5, 6	1,2,3,5,6,10	A, D
5 Knows the properties of the hardened state	5, 6	1,2,3,5,6,10	A, D
6 Knows the concept of durability and produces solutions	8, 10, 11	1,2,5,6	A
7			
8			

*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

**Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

Main Textbook	Yapı Malzemesi, Prof. Dr. İlker Bekir Topçu, Nobel Akademik Yayıncılık. 2021.
Supporting References	Beton, Prof. Dr. Turhan Y. Erdoğan, ODTÜ Gelişt. Vakfı Yay. ve İletişim A.Ş. Yayını, . 2003. Yapı Malzemeleri, Prof. Dr. Süheyl Akman, İ.T.Ü. İnş. Fak. Yayını, 1987. Malzeme Bilimi ve Yapı Fiziği Sorunları, Doç.Dr. Murat Eriç, C. 1, Maket Kitabevi Yay., İstanbul, 1982. Yapı Malzemesi Dersleri, Prof. Bekir Postacıoğlu, İ.T.Ü. Matbaası, 1975. Yapı Malzemesi II, Prof. Dr. Bülent Baradan, Dokuz Eylül Üniv. Yayınları, 1996. Concrete, S. Mindess ve J. F. Young, Prentice-Hall, Inc., 1981. Concrete, P.K. Mehta ve P.J.M. Monteiro, Prentice Hall, Englewood Cliffs, New Jersey 07632. Properties of Concrete, A. M. Neville, Pitman Publishing Limited, 1978. Desing and Control of Concrete Mixtures, S.H. Kosmatka ve W.C. Panarese, PCA, 1988.
Necessary Course Material	

Course Schedule	
1	Concrete as a construction material
2	Cement types and Portland cements
3	Aggregates
4	Water,
5	concrete admixtures
6	Ready-mix concrete, mixture design
7	Properties of fresh concrete
8	Mid-Term Exam
9	Production of concrete
10	Transporting, placing, compacting,
11	finishing, curing of concrete
12	Mechanical and physical properties of concrete
13	Durability
14	Ceramic materials and masonry walls
15	Effects of thermal and moisture on structures
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	14	5	70
Classroom Studying Time (review, reinforcing, prestudy,....)	14	2	28
Homework	5	4	20
Quiz Exam	1	0	0
Studying for Quiz Exam	1	0	0
Oral exam	1	0	0
Studying for Oral Exam	1	0	0
Report (Preparation and presentation time included)	1	0	0
Project (Preparation and presentation time included)	1	0	0
Presentation (Preparation time included)	1	0	0
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	14	14
Final Exam	1	2	2
Studying for Final Exam	1	14	14
Total workload			150
Total workload / 30			5
Course ECTS Credit			5

Evaluation	
Activity Type	%
Mid-term	40
Quiz	
Homework	10
Bir öge seçin.	
Bir öge seçin.	
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	Sufficient knowledge of engineering subjects related with mathematics, science and civil engineering; an ability to apply theoretical and practical knowledge on solving and modeling	4
2	Ability to determine, define, formulate and solve complex civil engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	3
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for	3
4	Ability to develop, select and use modern methods and tools required for civil engineering applications; ability to effective use of information technologies.	3
5	In order to investigate civil engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	4
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	3
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	2
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	3
9	Understanding of professional and ethical issues and taking responsibility	3
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	4
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering	3

LECTUTER(S)			
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Signature(s)			

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