



HASAN KALYONCU UNIVERSITY
Faculty of Engineering
Course Description Form

COURSE: Construction Materials					
CODE: CE242		SEMESTER: SPRING			
LANGUAGE: ENGLISH		TYPE: COMPULSORY			
PRE-REQUISITES: - CO-REQUISITES: -		THEORY	PRACTICAL	CREDIT	ECTS
WEEKLY HOURS: 4		2	2	3	5

CONTENT OF THE COURSE:

This course is an introduction to the basic building materials, components and methods of production for these materials: timber, metal, lime, gypsum, stone, polymers, hydraulic cements, aggregates, concrete. Illustration of their applications in civil engineering. Also, the course includes; physical, mechanical and durability properties of fresh and hardened concrete, steel and wood. Load-time deformation characteristics of materials. Laboratory sessions consist of experiments on cementing materials, aggregates, concrete.

OBJECTIVE OF THE COURSE:

To enable students to understand the main properties of building materials in addition to their applications in civil engineering, and to have the opportunity to experience material capacity and behavior, as well as construction methods in demonstrations and lab experiments.

WEEKLY SCHEDULE

Week	Topics
1	Introduction to Construction Materials, Natural Stones
2	Classification of Aggregates, Qualitative Properties of Aggregates
3	Physical Properties of Aggregates
4	Granulometry of Aggregates - Aggregate Experiments
5	Binders; Plaster, Lime, Hydraulic Lime
6	Binders; Cement, Pozzolan, Admixtures
7	Binders - Cement Experiments
8	Midterm
9	Definition and Classification of Concrete
10	Fresh Concrete Properties
11	Concrete Mix Design
12	Hardened Concrete Properties - Concrete Experiments
13	Ceramics, Metals
14	Woods - Concrete Experiments

TEXTBOOK: Lecture Notes

REFERENCE BOOKS

- ERDOĞAN T.Y., Materials of Construction, METU Press Publishing Company, Ankara, Turkey
- NEVILLE A.M., Properties of Concrete

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EVALUATION SYSTEM:		
IN-TERM STUDIES	QUANTITY	PERCENTAGE (%)
Midterm Exam	1	40
Homework		
Laboratory works	4	10
Quiz		
Final Exam	1	50
TOTAL	6	100
CONTRIBUTION OF INTERM STUDIES TO OVERALL GRADE	5	50
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE	1	50
TOTAL	6	100

COURSE CATEGORY:	PERCENTAGE (%)
Mathematics and Basic Sciences	30
Engineering	40
Engineering Design	30
Social Sciences	0

TABLE OF ECTS / WORKLOAD:			
Activities	QUANTITY	Duration (Hour)	Total Workload
Course Duration	13	4	52
Hours for off-the-classroom study (Pre-study, practice)	14	5	70
Laboratory works	4	4	16
Mid-term	1	2	2
Final examination	1	2	2
Homework	0	0	0
Quiz	0	0	0
Total Work Load			142
Total Work Load / 30			4,7
ECTS Credit of the Course			5

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
LO1	3	3	0	0	3	0	0	0	0	0	0
LO2	3	1	0	0	2	0	0	0	0	0	0
LO3	3	3	0	0	2	0	0	0	0	0	0
PO: Program Outcomes LO: Learning Outcomes											

Values: 0: None 1: Low 2: Medium 3: High
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INSTRUCTOR(S):	Assoc.Prof.Dr.Amjad Khabaz
FORM PREPARATION DATE:	22.05.2019

LEARNING OUTCOMES OF THE COURSE:	PROGRAM OUTCOMES:
<p>LO1: Understands the importance of construction materials for construction.</p> <p>LO2: Learns production process, types and usage areas of construction materials.</p> <p>LO3: Learns mechanical and physical properties of construction materials.</p>	<p>PO1: Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems.</p> <p>PO2: Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.</p> <p>PO3: Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.</p> <p>PO4: Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice; ability to employ information technologies effectively.</p> <p>PO5: Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions.</p> <p>PO6: Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually.</p> <p>PO7: Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language; ability to write effective reports and comprehend written reports, prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions.</p> <p>PO8: Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.</p> <p>PO9: Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice.</p> <p>PO10: Knowledge about business life practices such as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development.</p> <p>PO11: Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.</p>