



SHAMOON COLLEGE OF ENGINEERING

COURSE SYLLABUS

Building Materials 2

1000651

COURSE DETAILS

Campus: Beer Sheva	Academic year: 2023
Department: Civil Engineering	Type of Course: Required
Discipline: Structural Engineering	Level of Course: Undergraduate
Year of Study: Second	Semester: B
Prerequisites: Building Materials 1 1000441	Credit: 2.5
Co-Requisites:	ECTS Credit Points: 3.75
Language of Instruction: English	Mode of delivery: Face to Face, Project oriented.
Work Placement(s):	Teaching Assistant(s):
Lecturer(s): Tal Yadlin talya6@ac.sce.ac.il	

AIM

The aim of this course is to develop a comprehensive understanding of concrete, including its physical, chemical, and environmental properties. Furthermore, the course seeks to expand knowledge about the various types of concrete and how they can be adapted for different applications. Additionally, students will gain knowledge about other construction materials and their appropriateness for various uses.

LEARNING OUTCOMES

On successful completion of the course, the students will be able to:

1. Evaluate the suitability of different building materials for various applications.
2. Analyze how the type of concrete used impacts the functionality of the structure, such as durability, permeability, lifespan, etc.
3. Identify the characteristics and properties of building materials other than concrete, such as steel, glass, wood, stone, and bricks, and applying them to different uses.
4. Categorize building materials based on their physical, chemical, mechanical, and environmental properties.
5. Explain the fundamental principles involved in selecting appropriate building material for a specific element.
6. Conduct independent research on a selected topic from a list of options and collaborate with others to produce a final project.

COURSE CONTENTS

Week	Subject	Relevant Reading
1	Lecture: Defining the structure of the course and its requirements in the P.O. environment. Main topics in the course	[1] Chapters 26-28 [2] Chapters 17, 22 [3] Chapter 23
2	Lecture: Main topics in the course and making a list of topics from which students may choose.	[4] Chapters 1-5
3	Working on the projects in groups	
4	Individual guidance sessions will be provided for each group to collaborate on their project, including setting project goals and referencing relevant literature sources.	
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7	Individual guidance sessions will be provided for each group to collaborate on their project, including setting project goals and referencing relevant literature sources.	
8	Presentation of the work in class by each group	
9	Presentation of the work in class by each group	
10	Presentation of the work in class by each group	
11	Working on the projects in groups	
12	Final Quiz	
13	The hackathon	

RECOMMENDED OR REQUIRED READING

Text book:

1. I. Soroka, Building Materials - Properties and Uses, Part One, Cementitious Materials, Mortars and Concrete, 4th ed. Technion Research and Development Foundation Ltd, 1989.

Other readings:

2. Mindess, Sidney, J. Francis Young, and David Darwin. Concrete. Prentice Hall, 2003
3. Askeland, Donald R. The Science and Engineering of Materials, Springer, 1996 Watts, Andrew, Modern
4. Watts, Andrew, Modern Construction Handbook, Springer, 2001

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS

Lecture hours: 2, Practice hours: 1. Number of face-to-face sessions: 8-10.

This course follows a project-based learning format that incorporates both in-person lectures and group work. As part of the course, students will be responsible for conducting self-directed research on a predetermined topic chosen by the instructor and the students and presenting their findings to the class. Additionally, students will be expected to showcase their final project at an engineering exhibition during the course of a week, which will include a tangible demonstration.

ASSESSMENT METHODS AND CRITERIA

Criterion	Percentage	Comments
Quizzes:	15%	
Project:	35%	20% presenting the work in class 5% presenting the work in English 10% the summary of the work to be submitted in English
Hackathon:	40%	Summary presentation of the work at the exhibition on "Materials Engineering." A minimum passing grade of 56 is required for the Hackathon; otherwise, the grade received at the Hackathon will be the final grade for the course.
Attendance:	10%	Regular attendance at all course lessons is compulsory. In the event of an absence, the student's grade will be adjusted proportionally. Attendance at the Hackathon is also mandatory, and students who fail to attend will be required to retake the course. A notation of 'did not fulfill obligations' will be included in their records.