Marmara University, Faculty of Architecture and Design
Department of Architecture
2022-2023 Spring Semester

Course Title	**Code**	**Semester**	**Hour (T+P)**	**Credit**	**ECTS**
Material and Technology II	ARCH206	4 (Spring)	2 + 2	3	4
Pre-requisites	-				
Language of Instruction	English				
Course Type (Required / elective)	Required				
Course Coordinator	-				
Instructor /e-mail	Assist. Prof. Dr. H. Nur KIZILYAPRAK nur.kizilyaprak@marmara.edu.tr				
Assistans	Res. Assist. Rümeysa Temel				

Goals	● Introducing the basic material and technology terminology such as buildings, building elements, construction and construction methods within the systems approach. ● Introducing the classifications, design criteria and construction methods of building elements (floor systems, vertical circulation systems, wall systems, windows and doors, roof systems) used in reinforced concrete skeleton building systems. ● Introducing of components and materials of building elements (floor systems, vertical circulation systems, wall systems, windows and doors, roof systems) used in reinforced concrete skeleton building systems. ● Introducing the materials, workmanship, vehicle inputs and construction stages in the construction of building elements by observing the production of full-size models.
Learning Outcomes	1. Ability to understand and analyze buildings as a system. 2. Having conceptual information about functional building elements used in reinforced concrete building systems, such as floor systems, vertical circulation systems, wall systems, windows and doors, roof systems. 3. Ability to classify functional building elements used in reinforced concrete building systems, such as floor systems, vertical circulation systems, wall systems, windows and doors, roof systems. 4. Ability to draw typical area details of functional building elements used in reinforced concrete building systems, such as floor systems, vertical circulation systems, wall systems, windows and doors, roof systems.
Course Content	● the basic material and technology terminology ● the classifications, design criteria and construction methods of building elements (floor systems, vertical circulation systems, wall systems, windows and doors, roof systems) used in reinforced concrete skeleton building systems. ● components and materials of building elements (floor systems, vertical circulation systems, wall systems, windows and doors, roof systems) used in reinforced concrete skeleton building systems.

	Assessment Components	
Assessment Criteria	**Mid-term**	40 %
	Final Exam	60 %
	TOTAL	100 %

Midterm grade: -
Final grade: 50
Course success: 50

WEEKLY TOPICS AND PREPARATIONS		
Weeks	**Topics**	**Initial Studies**
Week 1 28.02.2023	Introduction, explanation of the syllabus, distribution of the plans for the studio works	
Week 2 07.03.2023	**Lecture: RC Floor systems** - RC floor classification - Basic components and materials for RC floors	**Assignment:** Draw of floor plans (structural system only), Scale:1/50
Week 3 14.03.2023	**Short Lecture: 1/50 drawing techniques** **Studio Work: Drawing of RC floor system (1 plan, 2 sections)** - Waffle floor - Ribbed / Hallow Brick floor	**Assignment:** Structural system model of the given building, Scale: 1/50
Week 4 21.03.2023	**Studio Work: Drawing of detail of RC floor system** - Intermediate floor detail - Basement floor detail	**Assignment:** Submission of floor systems -Model -Drawings (Plan, Sections)
Week 5 28.03.2023	**Lecture: RC Stair systems** - General information about stairs - Calculation method - RC stair classification - Basic components and materials for RC stairs	**Assignment:** Calculation of stair system
Week 6 04.04.2023	**Studio Work: Draw of stair system in detail, Scale:1/50** - 3 plans (Basement floor, intermediate floor, top floor) - 2 sections	**Assignment:** Stair system model of the given building, Scale: 1/50
Week 7 11.04.2023	**Studio Work: Draw of stair system in detail, Scale:1/50** - 3 plans (Basement floor, intermediate floor, top floor) - 2 sections	
Week 8 18.04.2023	**Lecture: Wall systems & Openings** - External walls - Internal walls - Windows / Doors	
Week 9 25.04.2023	**Studio Work: Wall systems & Openings**	**Assignment:** Research on walls, windows / doors details from firms **Assignment:** Wall and window / doors system model of the given building, Scale: 1/50
Week 10 02-07.05.2023	**Midterm exam** **SUBMISSION OF FLOOR SYSTEMS** - Model - Drawings (Plans, Sections) **SUBMISSION OF Wall systems & Openings, Windows / Doors**	
Week 11 09.05.2023	**Seminar and Full-Scale Mock-up:** KİLSAN - Brick walls	

Week 12 16.05.2023	**Lecture: Roof systems** - General information about roofs - RC roof classification - Terrace roofs	
Week 13 23.05.2023	**Lecture: Roof systems** - General information about roofs - RC roof classification - Terrace roofs	
Week 14 30.05.2023	**Studio Work: Roof systems – Planning of rain water drainage**	
Week 15 06.06.2023	**Studio Work: Roof systems – Detail of the terrace roof system**	
FİNAL	Final Exam	

REFERENCES

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- Yücesoy, L., (2001), Temeller, Duvarlar, Döşemeler, YEM Yayın, İstanbul

ECTS / WORKING HOUR TABLE			
Activities	**Number of Weeks**	**Duration (Hour)**	**Working Hours**
Duration of the Course (Including Exams: 14 x Total Weekly Course Hour)			
Extracurricular Working Hour (Preparatory Work, Review,Internet studies etc.)			
Midterm exam			
Homeworks and Presentations			
Final Exam			
Working Hours in Total			
Working Hours in Total / 30			
ECTS Credit of the Course			