Marmara University, Faculty of Architecture and Design
School of Architecture
2023-2024 Fall Semester

Course Title	**Code**	**Semester**	**Hour (T+P)**	**Credit**	**ECTS**
Material and Technology I	ARCH 205	4 (Fall)	2+2	3	4
Prerequisities	-				
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	Research Assistant Rumeysa Temel				

Goals	The aim is to provide a holistic perspective to students and enable them to gain **awareness** of these concepts by approaching the structure, construction, and building subsystems at a **conceptual** level.	
Learning Outcomes	1. Gaining the ability to examine the interaction of environment, building and user in the perspective of different architectural approaches. 2. Having knowledge about the development and applications of traditional and contemporary building systems. 3. Gaining knowledge about the principles of functional building elements such as foundations, walls, floors, and roofs. 4. Gaining the skill of analyzing of functional building elements such as foundations, walls, floors, and roofs. 5. To develop research skills related to the collection, processing and utilization of information.	
Course Content	Introducing the construction, material, architectural technology, and construction technology; and Introducing the construction and building technologies through a systems approach. To establish the relationship between the user-environment-structure and the performance criteria expected from the structure in this context. Introducing the traditional and advanced structure and construction systems building sub-systems (building element systems, construction systems, service systems). Introducing the building element as individual systems with examples. Supporting the course with homework and applications that use methods such as literature analysis, models, photographs, drawings, etc.	
Assessment Criteria	**Assessment Components**	
	Midterm Evaluation Components ● Studio Works (2 pieces)-%20 ● Midterm(1 piece)-%20	% 40
	Final Evaluation Components ● Studio Works (8 pieces) -%40 ● Final Exam (1 piece)- %20	% 60
	TOTAL	% 100
Midterm exam success grade: - **Final exam success grade: 50** **Course success grade:50**		

Weekly Topics and Preparations		
Weeks	**Topics**	**Assignments**
Week 1 01.10.2024	Introduction, basic concepts	
Week 2 08.10.2024	**Theoretical Course:** Relation between user, environment, building; Building / Building Systems; Foundations	
Week 3 15.10.2024	**Studio Work + Discussion 1:** 1/50 _The drawing of the foundation plan and sections of the Masonry building (The detail of studio work at page 3)	
Week 4 22.10.2024	**Studio Work + Discussion 1:** 1/50 _The drawing of the foundation plan and sections of the Masonry building (The detail of studio work at page 3)	
Week 5 29.10.2024	NATIONAL HOLIDAY	
Week 6 05.11.2024	**Studio Work + Discussion 2:** 1/50 _The drawing of the foundation plan and sections of the frame structure (The detail of studio work at page 3)	
Week 7 12.11.2024	**Theoretical Course + Studio Work 3:** The floor systems - 1/20 scale sectional physical model of the flooring system (wood or steel). (For studio work details, see page 3)	
Week 8 18.11.2024 - 24.11.2024	**Midterm Exam** -	
Week 9 26.11.2024	**Theoretical Course + Studio Work 4:** The vertical circulation systems - Examination of the components of an existing staircase system. (For assignment details, see page 3)	
Week 10 03.12.2024	**Theoretical Course + Studio Work 5:** The walls systems - Examination of the components of a wall system example. (For assignment details, see page 3)	
Week 11 10.12.2024	**Theoretical Course + Studio Work 6:** The window and door systems - Examination of the components of a window or door system from a photograph. (For assignment details, see page 3)	
Week 12 17.12.2024	**Theoretical Course + Studio Work 7:** The roof systems - Examination of the components of a roof system example. (For assignment details, see page 3)	
Week 13 24.12.2024	**Theoretical Course + Studio Work 8:** The interior wall system – 1/20 scale model of an interior wall system (steel or wood) (For assignment details, see page 4)	
Week 14 31.12.2024	**Studio work 9:** 1/50_ drawing of the masonry structure; plan + 2 cross-sections + front elevation. (For application details, see page 4)	
Week 15 07.01.2025	**Studio work 10:** 1/50_drawing of the reinforced concrete frame structure; plan + 2 cross-sections + front elevation. (For application details, see page 4)	
Week 16 13.01.2025 - 26.01.2025	**Final Exam**	

II. STUDIO WORKS

In the 2024-25 Fall semester, a total of 10 applications/studio works will be conducted within the scope of Materials and Technology 1 course.

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The aim is to enable the student to **understand** the difference between the structure and subsystems and the building element systems.

Information regarding the execution, evaluation, submission method, topics, and dates of the studio works is provided below:

1. Conducting the Studio Works

- The duration of each studio work is 4 hours. Students should bring drawing tools to the class.
- The works conducted in the studio will be submitted to the group coordinator at the end of the class

2. Evaluation of the Applications

- The average of the studio work grades will have a **60%** impact on the final grade.
- Drawings should be made in **accordance with technical drawing rules** (Reference: Orhan Şahinler-Fehmi Kızıl, 'Mimarlık'ta Teknik Resim', Yay Yayıncılık, İstanbul, 1990).

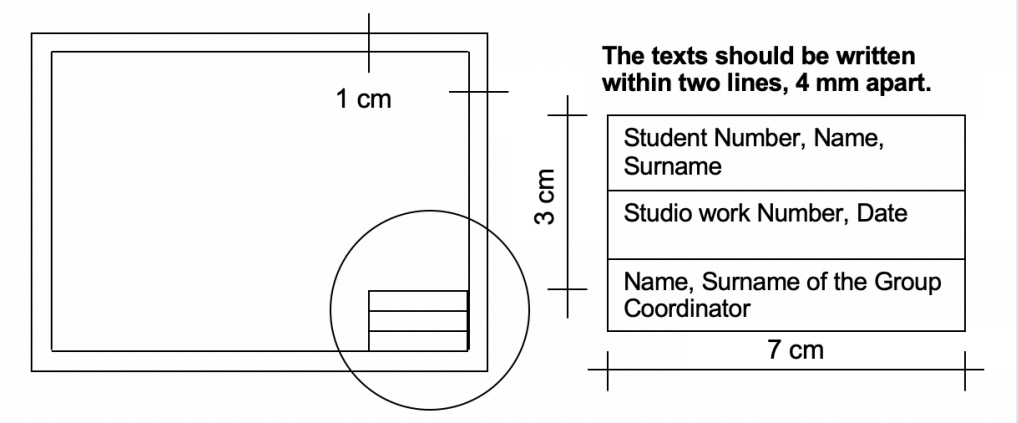
3. The Subjects and the Dates of Studio Works

- **Studio work 1 –** The foundation plan and sections of the masonry structure on the given sheet will be drawn to a scale of 1/50 and submitted to the group coordinator at the end of the class.
- **Studio work 2 –** The foundation plan and sections of the frame structure on the given sheet will be drawn to a scale of 1/50 and submitted to the group coordinator at the end of the class.
- **Studio work 3 –** Make a 1/20 scale sectional physical model of a chosen flooring system (wood or steel) from the literature. Size of the physical model: 20x20 cm.
- **Studio work 4 –** Take a photograph of an existing staircase system, and indicate its components on the photo. Provide written information about its material/structure and construction system.
- **Studio work 5 –** Photocopy a selected example of a wall system from the literature and indicate its components on the photocopy. Provide written information about its material, structure, and construction system.
- **Studio work 6 –** Take a photograph of the window or door system in your home, and indicate its components on the photo. Provide written information about its material, structure, and construction system.
- **Studio work 7 –** Photocopy a selected example of a roof system from the literature, and indicate its components on the photocopy. Provide written information about its material, structure, and construction system.

- **Studio work 8 –** Make a 1/20 scale sectional physical model of a chosen internal system from the literature (timber or steel), and indicate its components on the model. Size of the physical model: 20x20 cm.
- **Studio work 9 –** The plan, two cross-sections, and the front elevation of the single-story masonry residential building provided on the given sheet will be drawn to a scale of 1/50, in accordance with technical drawing rules, and submitted to the group coordinator at the end of the class.
- **Studio work 10 –** The plan, two cross-sections, and the front elevation of the single-story reinforced concrete frame system residential building provided on the given sheet will be drawn to a scale of 1/50, in accordance with technical drawing rules, and submitted to the group coordinator at the end of the class.

4.The Format of Studio Works Submission

- 35x50 sketch papers will be used for **studio works**. Before coming to the class, each student must prepare their sheet in the following format.



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ECTS / WORKING HOUR TABLE			
Activities	**Süre (Hafta)**	**Süre (Saat)**	**Çalışma Saati**
Duration of the Course	14	4	56
Extracurricular Working Hour (Preparatory Work, Review)	15	2	30
Assignments, Studio works	9	3	27
Midterm Exam	1	2	2
Final Exam	1	2	2
Working Hours in Total			117
Working Hours in Total / 30			3.9
ECTS Credit of the Course			4