Marmara University, Faculty of Architecture and Design
Department of Architecture
2024-2025 Spring Semester

Course Title	Code	Semester	Hour (T+P)	Credit	ECTS
Introduction to Building Construction	ARCH 1012	2 (Spring)	2+0	2	2
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				
Assistant	Res. Assist. Rumeysa TEMEL / rumeysa.temel@marmara.edu.tr				

Aim	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 sub-systems at a **conceptual** level.	
Learning Outcomes	▪ To have knowledge about building/construction concepts, building sub-systems and building element systems. ▪ To gain the ability to examine the interaction of environment, building and user in the perspective of different architectural approaches. ▪ To have knowledge about the development and applications of traditional and contemporary building systems. ▪ To have knowledge about the principles of functional building elements such as walls, floors, and roofs. ▪ To develop research skills related to the collection, processing and utilization of information.	
Course Content	▪ Concepts of building, architectural technology and building technology. Introducing building and construction methods with systems approach. ▪ User-environment-building system interaction and in this context, environmental factors and performance requirements expected from the building. ▪ Introducing building/construction systems and building sub-systems (building element systems, structural systems, service systems). ▪ Giving information about the classification, material and technology, performance requirements and construction systems of functional building element systems (floor, vertical circulation, wall, joinery, roof and interior partition systems).	
Assessment Criteria	**Assessment Components**	
	Midterm Evaluation Components Midterm Exam (1 piece) - %20 Assignment (1 piece)-%5 Studio Work (2 piece)-%15	% 40
	Final Evaluation Components Assignments (5 pieces) - %25 Fair Report (1 piece)- %5 Studio Works (2 pieces) -%30	% 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 18.02.2025	**Theoretical Course:** Introduction, concepts	
Week 2 25.02.2025	**Theoretical Course:** Interaction between user-environment-building	
Week 3 04.03.2025	**Theoretical Course:** Building and Construction Systems	
Week 4 11.03.2025	**Studio work 1:** Building Subsystems	**Studio work 1:** Recognizing the subsystems of a building (see page 4)
Week 5 18.03.2025	**Theoretical Course:** Foundations	
Week 6 25.03.2025	**Studio work 2:** Foundations	**Studio work 2:** 1/50 _The drawing of the foundation plan and sections of the frame system (see page 4)
Week 7 1.04.2025	**Ramadan Eid Holiday**	-
Week 8 08.04.2025	**Theoretical Course:** The floor systems	**Assignment 1:** 1/20 scale sectional physical model of a flooring system (wood or steel) (see page 3)
MIDTERM 14-20.04.2025	**Midterm Exam** -	
Week 9 22.04.2025	**Theoretical Course:** Vertical circulation systems	**The Submission of Assignment 1** **Assignment 2:** Examination of the components of an existing staircase system (see page 3)
Week 10 29.04.2025	**Theoretical Course:** Wall systems	**The Submission of Assignment 2** **Assignment 3:** Examination of the components of a wall system example. (For assignment details, see page 3)
Week 11 6.05.2025	**Theoretical Course:** Window and door systems	**The Submission of Assignment 3** **Assignment 4:** Examination of the components of an existing window system (see page 3)
Week 12 13.05.2025	**Theoretical Course:** Roof systems	**The Submission of Assignment 4** **Assignment 5:** Examination of the components of a roof system example (see page 3)
Week 13 20.05.2025	**Theoretical Course:** Interior wall systems	**The Submission of Assignment 5** **Assignment 6:** 1/20 scale sectional physical model of an interior partition system (wood or steel) (see page 3)
Week 14 27.05.2025	**Studio work 3:** Masonry system	**The Submission of Assignment 6** **Studio work 3:** 1/50 drawing of the masonry structure; plan + 2 cross-sections + front elevation (see page 4-5)
Week 15 3.06.2025	**Studio work 4:** Reinforced concrete frame system	**Studio work 4:** 1/50 drawing of the reinforced concrete frame structure; plan + 2 cross-sections + front elevation (see page 4-5)
Week 16 10.06.2025	Process Evaluation, Feedback, and Revisiting Key Concepts	
FINAL 16 -29.06.2025	**Final Exam**	

IN-TERM STUDIES:

A. ASSIGNMENTS

Assignment 1

Make a 1/20 scale sectional physical model of a flooring system (wood or steel) chosen from the literature. Physical model size: 20x20 cm.

Assignment 2

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.

Assignment 3

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.

Assignment 4

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.

Assignment 5

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.

Assignment 6

Make a 1/20 scale sectional physical model of an interior partition system (wood or steel) chosen from the literature. Physical model size: 20x20 cm.

NOTES ABOUT THE FORMAT OF ASSIGNMENT SUBMISSION

- The cover page should be organized to include the name and surname of the person preparing the assignment, the topic of the assignment, the submission date, and the sources used. If there are multiple papers, they should be fastened together with a pin or a paperclip or submitted in a folder.
- The assignment number and topic to be written on the first page should be as shown below, exactly as provided on the given sheet:

  Assignment 3

  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.

  - SOURCE: The source from which the selected example is obtained should be specified, such as the journal/book it is taken from or its location (e.g., MU Library staircase or the window/door frame of a residential building in Şişli).
  - The prepared assignment should clearly explain the required information (the information requested on the assignment topics is underlined).

B. STUDIO WORKS

In the 2024-25 Spring semester, a total of 4 applications/studio works will be conducted within the scope of Introduction to Building Construction course.

AIM

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

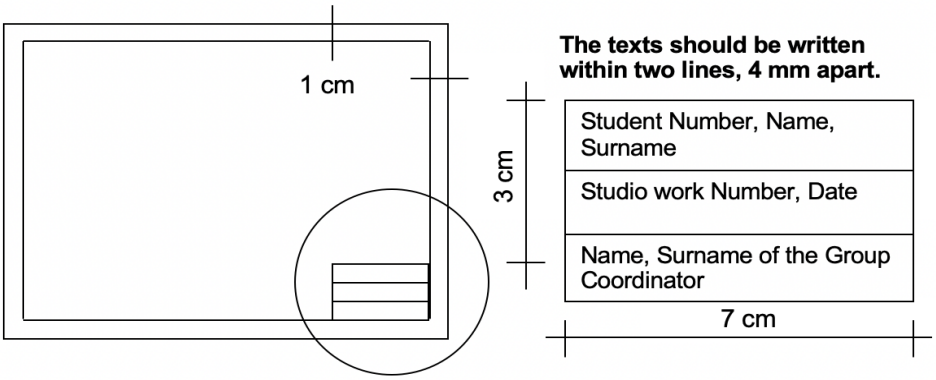
- The average of the studio work grades will have a **45%** impact on the final grade.
- Drawings should be made in **accordance with technical drawing rules** (Reference: Orhan Şahinler & Fehmi Kızıl, 'Mimarlık'ta Teknik Resim', Yay Yayıncılık, İstanbul, 1990).

3. The Subjects and the Dates of Studio Works

- **Studio work 1 –** The components of the building subsystems (structural system, mechanical system and building element systems) on the given sheet will be colored, named, 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 –** 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 4 –** 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

- A2 sketch papers will be used for **studio works**. Before coming to the class, each student must prepare their sheet in the following format.



References

ENGLISH REFERENCES:

- Allen, E., *"Fundamentals of Building Construction, Materials and Methods"*, John Wiley and Sons, Canada, 1990.
- Blanc, A., Blanc, S., *"Stairs"*, Architecture Press, Oxford, 2001.
- Brookes, A., Meijs, M., *"Cladding of Buildings"*, Taylor & Francis, New York, 2008.
- Brotrück, T., *"Basics Roof Construction"*, Birkhäuser-Publishers for Architecture, 2007
- Charlet, A., J., *"Fundamental Building Technology"*, Taylor&Francis Group, 2007.
- Ching, F. D. K., Adams, C., *"Çizimlerle Bina Yapım Rehberi"*, Endüstri Merkezi Yayınları, 2006.
- Chudley, R., *"Construction Technology, I, II, III, IV"*, Longman Ltd., 1999.
  Construction Press, 1984.
- Davies, R.L., Petty, D.J., *"Building Elements"*, The Architectural Press, London, 1960.
- Deplazes, A., "*Constructing Architecture: materials, processes, structures, a handbook"*, Birkhäuser-Publishers for Architecture, Basel, 2005.
- Fleming, Eric, *"Construction Technology"*, Blackwell Publishing, 2005.
- Foster, J. S., *"Structure and Fabric"* (Mitchell's Building Construction Series), B.T. Batsford Limited, London, 1986.
- Handler, A.B., "*Systems Approach to Architecture"*, American Elsevier Publishing Company Inc. New York, 1970.
- Morton, N., *"Standard structural details for building construction"*, New York: McGraw-Hill, 1968.
- Nield, D., *"Mitchell's advanced building construction*" (revised by Denzil Nield), London: B. T. Batsfold, 1968.
- Olin, H. Schmitt, J.L., Lewis, W. *"Construction, Principles, Materials, and Methods",* Van Nostrand Reinhold, 1995.
- Osbourn, D., *"Introduction to Building"*, Essex: Longman, 1991.
- Reid, E., *"Understanding Buildings - A Multidisciplinary Approach,* Cambridge, Mass.: MIT Press, 1984.

TURKISH REFERENCES:

- Binan, M., *"Ahşap Çatılar"*, Birsen Yayınevi, 1990.
- Binan, M., *"Doğramalar"*, İTÜ Mimarlık Fakültesi, 1977-1980.
- Binan, M., *"Yapı Elemanları, Çizimler ve Açıklamalar"*, İTÜ Vakfı, 1986.
- Eldem, S.H., Soygeniş, M., *"Yapı 1-2-3-4"*, Birsen Yayınevi, İstanbul, 2005.
- Eser, Y., *"Yapı Bilgisi: Ders Kitabı"*, İTÜ Mimarlık Fakültesi, İstanbul, 1961-1962.
- Eser, Y., *"Yapı Bilgisi: Ders Notları"*, İTÜ Mimarlık Fakültesi, İstanbul, 1967-1969.
- Sarı, A., *"Merdivenler"*, İstanbul : Yem Yayınları, 2000.
- Şahinler, Orhan, Kızıl, Fehmi, "Mimarlık'ta Teknik Resim", Yay Yayıncılık, İstanbul, 1990.
- Toydemir, N., *"Yapı Elemanı Tasarımında Malzeme"*, Literatür, 2000.
- Toydemir., N., *"Çatılar"*, Yapı Endüstri Merkezi, 2004.
- Türkçü, Ç., *"Yapım ",* Mimarlar Odası İzmir Şubesi Yayınları, 1997.
- Yücesoy, L., *"Temeller, Duvarlar ve Döşemeler",* Yapı Endüstri Merkezi Yayınları, 1998.

ECTS / WORKING HOUR TABLE

Activities	**Süre (Hafta)**	**Süre (Saat)**	**Çalışma Saati**
Duration of the Course	14	2	28
Extracurricular Working Hour (Preparatory Work, Review)	14	1	14
Assignments, Studio works	10	2	20
Midterm Exam	1	2	2
Final Exam	1	2	2
Working Hours in Total			66
Working Hours in Total / 30			2,2
ECTS Credit of the Course			2