



ECTS COURSE INFORMATION FORM

School/Faculty/Institute Program	Faculty of Arts, Design and Architecture B.Sc. in Architecture				
		Required			
Course Code	ARC 232				
Course Title in English	Architectural Technology III				
Course Title in Turkish	Mimarlık Teknolojisi III				
Language of Instruction	English				
Type of Course	Lecture, Flipped learning				
Level of Course	Undergraduate				
Semester	Spring				
Contact Hours per Week	Lecture: 3	Recitation:	Lab: Studio:		
Estimated Student Workload	120 hours per semester.				
Number of Credits	5 ECTS				
Grading Mode	Standard Letter Grade				
Pre-requisites	None				
Expected Prior Knowledge	None				
Co-requisites	None				
Registration Restrictions	Only Undergraduate Students				
Overall Educational Objective	To communicate the concepts that coordinate with engineers and other professionals on the process of design, form finding and construction				
Course Description	The course focuses on the (principles of) structural and architectural design also relationship of architectural practice with engineering disciplines. During the semester, issues related to architectural and structural design will be discussed through examples and problems related to detailing will be examined closely. Building elements such as floors, surfaces, roofs, circulation elements, facades/skins will be studied. Contemporary approaches for construction, new technologies of prefabrication, energy issues, long span and high rise building techniques will also be briefly discussed.				
Course Description in Turkish	Dönem boyunca mimari ve strüktürel tasarım ile ilgili örnekler üzerinden tartışılan konuların yanında detaylandırma ile ilgili sorunlara yakından bakılmasına çalışılacaktır. Dösemeler, çatılar, sirkülasyon elemanları, cephe/yüzey elemanları konu edilecektir. Çağdaş inşa teknikleri, prefabrikasyon ile ilgili yeni teknolojiler, enerji yaklaşımı, açıklık geçme ve yüksek yapılardan haftalık olarak kısaca bahsedilecektir.				
Course Learning Outcomes and Competences	Upon successful completion of the course, the learner is expected to be able to: <ol style="list-style-type: none">1. reflect on principles of structural systems, behavior of structures to vertical and horizontal forces, development and applications of contemporary structural systems;2. understand the importance of structural design and civil engineering on architectural design and able to use the terminology;3. design through a better understanding of detailing and structure;4. follow new technologies to help design and construct a structurally logical building.				
Relation to Program Outcomes and Competences: N=None S=Supportive H=Highly Related					

Program Outcomes and Competences	Level N/S/H	Assessed by
1. Ability to read, write and speak effectively in Turkish and English, equivalent to a B2 European Language Passport Level in English.	S	Reviews, HW, Assignment.
2. Ability to question and interpret ideas considering diverse points of view; gather and use data, develop concepts related to people, places and the environment, and make individual decisions.	H	HW, BB, Notebook, Presentation
3. Ability to use appropriate graphical methods including freehand and digital drawing techniques, (ECDL advanced) in order to develop ideas in addition to communicate the process of design.	S	
4. Ability to use fundamental principles of architectural design considering the place, climate, people, society as factors, and simultaneously express present principles in relevant precedents.	H	HW, BB, Notebook, Presentation
5. Understanding of architectural principles belonging to global and local cultures shaped by the climatic, technological, socioeconomic, cultural factors, in addition to principles of historic preservation while developing architectural and urban design projects.	S	
6. Understanding the theories and methods used to describe the relationship between human behavior and physical environment; and concurrently understanding different needs, values, behavioral norms, social and spatial patterns of different cultures.	N	
7. Ability to apply various stages of design processes considering the client and user needs, which include space and equipment requirements besides site conditions and relevant laws and standards.	S	
8. Understanding the role of applied research in determining function, form and systems and their impact on human conditions and behavior.	S	
9. Understanding of the basic principles of static and dynamic structural behavior that withstand gravity and lateral forces, in addition to the evolution and applications of structural systems.	H	HW, BB, Notebook, Presentation
10. Ability to apply the principles of sustainability in architectural and urban design projects that aim to preserve the natural and historic resources and provide healthful environments.	S	
11. Ability to apply the fundamental principles of building and safety systems such as mechanical, electrical, fire prevention, vertical circulation additionally to principles of accessibility into the design of buildings.	S	
12. Understanding the basic principles in the selection of materials, products, components and assemblies, based on their characteristics together with their performance, including their environmental impact and reuse possibilities.	H	HW, BB, Notebook, Presentation
13. Ability to produce a comprehensive architectural project from the schematic design phase to design development phase, while integrating structural systems, life safety and sustainability principles.	S	
14. Understanding the principles of environmental systems such as energy preservation, active and passive heating and cooling systems, air quality, solar orientation, day lighting and artificial illumination, and acoustics; in addition to the use of appropriate performance assessment tools.	S	
15. Ability to choose appropriate materials, products and components in the implementation of design building envelope systems.	S	
16. Ability to understand the principles and concepts of different fields in multidisciplinary design processes and the ability to work in collaboration with others as a member of the design team.	S	
17. Understanding the responsibility of the architect to organize and lead design and construction processes considering the environmental, social and aesthetic issues of the society.	S	
18. Understanding the legal responsibilities of the architect effecting the design and construction of a building such as public health and safety; accessibility, preservation, building codes and regulations as well as user rights.	N	
19. Ability to understand the ethical issues involved in the design and construction of buildings and provide services for the benefit of the society. In addition to the ability to act with social responsibility in global and local scales that contribute to the well-being of the society.	N	

20. Understanding the methods for competing for commissions, selecting consultants and assembling teams, recommending project delivery methods, which involve financial management and business planning, time management, risk management, mediation and arbitration.			N				
Prepared by and Date	Irem Korkmaz 10.03.2020						
Semester	Spring 2019 - 2020						
Name of Instructor	Dr. Kürşad ÖZDEMİR						
Course Contents	Week	Topic					
	1.	Introduction – Technological Experiments, Pavilions					
	2.	Floors, Plates, Topological Surfaces, Types and Design Principles Through Examples					
	3.	Roofs, Types and Design Principles Through Examples					
	4.	Facades and Skins, Types and Design Principles Through Examples					
	5.	Facades and Skins, Types and Design Principles Through Examples					
	6.	Prefabrication, Principles and Technology Through Examples					
	7.	Energy Issues, Principles and Technology Through Examples / Discussion Session					
	8.	Energy Issues, Principles and Technology Through Examples / Discussion Session					
	9.	Architectural Elements, Windows, Doors, Stairs, Ramps, Types and Design Principles Through Examples / Discussion Session					
	10.	Field Study					
	11.	Long Span Buildings and Their Design Principles Through Examples / Discussion Session					
	12.	Long Span Buildings and Their Design Principles Through Examples / Discussion Session					
	13.	Presentations					
	14.	High Rise Buildings and Their Design Principles Through Examples / Discussion Session					
	15.	Final Examination Period					
	16.	Final Examination Period					
Required/Recommended Readings	Recommended Readings: Bizley, G. (2010) Architectural Detail I-I, Elsevier Ltd. Boake, T.M. (2014) Diagrid Structures, Systems Connections and Details, Birkhauser. Deplazes, A. (eds.) (2005) Constructing Architecture, Birkhauser. Flury, A.(ed.) (2012) Cooperation The Engineer and the Architect, Birkhauser Kara, H. and Georgoulas, A. (ed.) (2012) Interdisciplinary Design New Lessons from Architecture and Engineering, GSD Harvard, Actar. Kubo, M. (ed.) (2002) The Yokohama Project, Actar Lewis, P., Tsurumaki, M. and Lewis, D.J. (2016) Manual of Section. Princeton University Press Nordenson, G. (2016) Reading Structures: 39 Projects and Built Works 1983-2011, Lars Müller Publishers. Schittich, C. (2006) Building Skins, Birkhauser.						
Teaching Methods	The course will have presentations by the instructor as well as extensive discussion by the class. After the 6th week there will be additional time for group or individual in-class activity. This time is booked for discussions and short presentations about case studies and also coordination/ preparation for end term final assignment. Each student has to have their own sketchbook/notebook for the course and it is expected to use this sketchbook/notebook during the term both on and off the course. Sketchbooks will be graded and will be part of the overall grade.						
Homework and Projects	3 Assessment Tests on Blackboard and 1 Final Presentation						
Laboratory Work	-						
Computer Use	Yes						
Other Activities	-						

Assessment Methods	<ol style="list-style-type: none"> 1. Performance in Course 20 Points 2. Sketchbook/Notebook 20 Points 3. Assessment tests on Blackboard 30 Points 4. Final Presentation 30 Points
Course Administration	<p>Office: Block A, Tomris Akın Floor5 Email: akint@mef.edu.tr</p> <p>Regular attendance and participation is expected (%80 minimum). Class participation counts towards the final grade. Academic Dishonesty and Plagiarism: YÖK Disciplinary Regulation.</p>

ECTS Student Workload Estimation	Activity	No/Weeks	Hours			Calculation	Explanation
			No/Weeks per Semester (A)	Preparing for the Activity (B)	Spent in the Activity Itself (C)		
	Lecture	14	1	3	1	70	A*(B+C+D)
	Lab etc.					0	
	Midterm(s)	14		1		14	A*(B+C+D)
	Assignment, Project, Presentation	4	7	2		36	A*(B+C+D)
	Final Submission					0	A*(B+C+D)
	Total Workload					120	
	Total Workload/25					4,8	
	ECTS					5	