

DEPARTMENT OF ARCHITECTURE

COURSE CONTENT

(Curriculum after 2019-2020 Academic Year)

ARCH1101 Concepts and Culture of Architecture : (2+0+2) 3C/ 5 ECTS

The objective of this course is to introduce the scope of architectural discipline. The course offers an overview of architecture within the framework of different ideas, approaches and associated disciplines. The meaning, definitions, images, themes and instruments of architecture; topics such as programming, context, concept development and body-action-space-form relationship form the theoretical scope of the course. In addition, the design process and fundamentals of architectural design are examined practically regarding the main spaces of dwelling in the studio. At the end of the semester; within the framework of the concepts of function, architectural principles, integration and being part of the whole, a basic architectural project is carried out.

ARCH1103 Basic Design : (2+0+4) 4C/ 7 ECTS

ARCH1103 is a foundation course that introduces architecture students with design principles and prepare them for architectural design understanding and working culture. Students are expected to construct the relationship between form-function-structure and space using various design elements. In addition to the traditional design principles, within the scope of experimental techniques, it is aimed to develop the creativity of the students.

ARCH1105 Architectural Presentation Techniques : (2+0+4) 4C/ 7 ECTS

ARCH1105 is a foundation course, that introduces tools in order to understand and present three-dimensional objects, and to design new ones. Students are expected to convey the expression of basic geometries using technical hand drawing principles. In addition to technical drawing, free hand sketching studies are carried out in the course to improve the students's ability to understand and convey what they see. At the end of the term, students are expected to learn to present the materials they produce in an architectural manner.

ARCH1102 Building Technologies I : (2+0+2) 3C/ 5 ECTS

Within the scope of the course, general concepts and basic principles related to structure, construction and load bearing systems are explained. Properties such as classifications of buildings, building loads and load transfer, the relationship of building elements with each other, material dimensions are detailed. The structural features of traditional construction systems, which are widely used in our country, are explained in the context of structure, materials and components. The aim of the course is to provide information about the building systems and its sub-components.

Prerequisite: ARCH1105 Architectural Presentation Techniques

ARCH1014 Introduction to Architectural Design :**(2+0+2) 3C/ 5 ECTS**

Within the scope of the course, fundamental principles and architectural design skills that students acquired in ARCH1101 and ARCH1103 courses are continued in the design studio. The architectural project process is introduced through the design of small-scale spaces. In this context, students are expected to gain the ability to solve and present simple architectural problems by experiencing the main stages of an architectural design process. The course focuses on key issues of the architectural design process such as; using environmental data in architectural design, programming and concept development; multi-dimensional and directional thinking; researching and examining various architectural examples from the world; designing space for users and expressing the design with various architectural presentation techniques.

Prerequisite: ARCH1101 Concepts and Culture of Architecture, ARCH1103 Basic Design, ARCH1105 Architectural Presentation Techniques

ARCH1106 Building Materials :**(3+0+0) 3C/ 4 ECTS**

The course aims to introduce the basic properties of the building materials, their production methods and their use in architecture. In this course, the relation of the building with the design and material is established. Insulation materials required for comfort conditions are examined in the building. Students are aimed to learn the relationship between the various layers by examining the different materials and properties that form the components and elements of the building.

ARCH1108 Computer Aided Architectural Design I :**(1+0+2) 2C/ 3 ECTS**

The aim of the course is to provide students with the basic principles of current computer softwares. It is aimed that students gain the ability to visualize the designs they have developed using various programs and to turn these images into a means of expression and transfer. The principles of using computer as a design visualization tool, the interfaces of the programs, physical output jobs, data transfer opportunities are to be studied. During the semester, two-dimensional and three-dimensional drawings are carried out, drawing methods and techniques are to be instructed.

ARCH1112 Statics and Strength of Materials :**(3+1+0) 3C/ 5 ECTS**

This course deals with the applications of the basic concepts of mechanics in architectural structures. Topics include analysis and design problems of rigid objects that do not change shape and change shape under external influences. Classification of building systems and external effects affecting the structure, calculation of internal forces that will occur after external effects in the structure are among the topics of this course. Behavioral models suitable for the mechanical properties of the material used in the building, deformation and stress analysis and calculation of the strength of the building are also an area of applied mechanics course. In general, the strength, deformation and stability of building systems are the main topics of this course.

ARCH1114 Architectural Design Thinking :**(3+0+0) 3C/ 5 ECTS**

The main objectives of this course are; grasping of different theoretical approaches concerning architecture and architectural thinking; discussing the interdisciplinary features of architecture and its relations with nature, culture, science and art within the unity of theory and practice; examining various dimensions related to the field of architectural design in the framework of basic concepts, texts, works and figures and raising awareness about contemporary architecture, philosophy and cultural theories that generate critical thinking in architecture.

ARCH2201 Architectural Design Studio I :**(0+0+8) 4C/ 8 ECTS**

Creating an idea about the space within the scope of an uncomplicated architectural problem, to express it architecturally and to elaborate the information on building technology at a basic level are the main objectives of the studio. Determining the design problems; generating metaphors on conceptual ideas; examining the physical and social layers of the built environment; data collection, analysis, synthesis and evaluation; architectural program research-development in the context of project area-subject; architectural evaluation - interpretation of the data obtained within the design process and resolving the design problem with a spatial proposal constitute the main steps of the studio.

Prerequisite: ARCH1104 Introduction to Architectural Design

ARCH2203 History and Theory of Architecture I :**(3+0+0) 3C / 5 ECTS**

The course aims to provide the student with the fundamental knowledge on the development of architectural thought and practices from the earliest built environments to the Renaissance period. Selected examples from throughout the world will be analyzed in terms of planning, function, structure, technique, social context and meaning. The course encompasses discussions of the transformation of architecture and the physical environment around the world. It presents an overview of the history of world architecture that takes into account all cultures and societies.

ARCH2205 Building Technologies II :**(2+0+2) 3C/ 5 ECTS**

Within the scope of the course, properties of construction systems, structure, material and building components are explained and complex construction systems, current materials and structures are introduced. Building components and elements are detailed specifically in the application of reinforced concrete systems. It is aimed to enable students to use theoretically learned knowledge while designing and producing drawings. Designing a space depending on the structure, functional building elements in the building subsystem are examined and the building components are detailed.

Prerequisite: ARCH1102 Building Technologies I

ARCH2207 Computer Aided Architectural Design II :**(1+0+2) 2C/ 3 ECTS**

Within the scope of the course, through CAD programs, fundamentals of design, visualization and presentation methods and techniques are studied. Relations and usage of different softwares are taught. It is aimed to strengthen the drawings with effects by using visualization programs and prepare them for the web presentation.

Prerequisite: ARCH1108 Computer Aided Architectural Design I

ARCH2210 Reinforced Concrete Structures :**(3+1+0) 3C/ 4 ECTS**

Reinforced concrete as a structural material. Building regulations and hypotheses in the process of calculation. Peculiarities of the method of load bearing. Simple (rectangular and T section) and combined bending under load bearing. Columns. Reinforced concrete sections subject to shear and torsion forces. Foundations. Basic principles for designing the reinforced concrete structure. Reinforced concrete skeleton systems. Special reinforced concrete structures. High rise and large span structures. Study of the structure of a reinforced concrete building and development of solutions.

Prerequisite: ARCH1112 Statics and Strength of Materials

ARCH2215 Accessibility in Architectural Design :**(2+0+0) 2C/ 2 ECTS**

In this course, history of the universal design approach is given; and the concepts and principles of accessibility, inclusive design and universal design are discussed. The rights of people with diverse abilities, ages, sizes etc. in using different scales of design products in built environment are examined within the framework of the ideas of equality, equity, discrimination and human rights. Design solutions eliminating physical and social barriers in the built environment to make it universally accessible for all are analyzed for various building typologies.

ARCH2202 Architectural Design Studio II :**(0+0+8) 4C/ 8 ECTS**

Reading the existing natural / physical pattern with environmental analysis, developing an uncomplicated architectural program and architectural design thinking, and realization of conceptual design studies are the main objectives of the studio. The outlines of the studio: designing a project that meets formal, functional and structural needs by considering spatial and environmental factors; integration of architectural thinking with program, space organization, contextual data and formal - tectonic features; associating structure, material and technology issues with the design process; and researching on specific representation techniques.

Prerequisite: ARCH2201 Architectural Design Studio I

ARCH2204 History and Theory of Architecture II :**(3+0+0) 3C / 5 ECTS**

The main objective of this course is treating the history of architecture as a history not of buildings per se, but of cultural beliefs and ideas, values and aesthetic ideals actualized through architectural forms and experiences. This course seeks to foster the students' ability to analyze and understand the unique formal vocabulary of architecture and its expressive potential, as well as the complex and instrumental dialogue between architecture and culture. The course focuses on the transformation of architecture, urban planning, and design from the Renaissance through the end of the 20th century.

Prerequisite: ARCH2203 History and Theory of Architecture I

ARCH2206 Contemporary Building Structures :**(2+0+2) 3C/ 5 ECTS**

Within the scope of the course, load bearing, the behavior of structural elements and structural members are explained. Contemporary construction systems, Shell structures and solutions for the carrier system are examined through examples. The structural system diversity is examined in form active, vector active, section active and surface active system categories. It is aimed that students comprehend the behavior of different structural systems, present the given structural system through its features and examples, and analyze the structural principles according to the specific design concept.

ARCH2214 Environmental Control :**(3+0+1) 3C/ 5 ECTS**

The course covers basic information, on the use of solar radiation and energy, temperature and humidity control, building acoustics, noise control and architectural lighting, to improve the physical conditions in the space and control the components of the physical environment. Design decisions related to efficient energy use in the building to provide optimum comfort conditions are evaluated.

ARCH3301 Architectural Design Studio III :

(0+0+8) 4C/ 8 ECTS

In Studio III, architectural design is considered as an intervention in the urban context as well as building scale. Social and cultural layers of architecture; dimensions that integrate with the city as part of a public whole in a historical/ built environment; focusing on function, action, program, spatial use, experience possibilities and open-closed space relationships constitutes the content of the studio. Within the scope of the studio, medium-scale architectural design projects for public use are studied.

Prerequisite: ARCH2202 Architectural Design Studio II

ARCH3305 Contemporary Architecture :

(3+0+0) 3C/ 5 ECTS

The course aims to give the student a basic critical understanding of the major shifts in architectural thinking in the 20th and 21st centuries, taking into consideration the main theoretical, cultural, technological, and social changes that affected architectural production. The course scrutinizes the pivotal phenomena and movements of the 20th and 21st centuries, focusing on the outstanding architects of the time, and their canonical ideas, design approaches, and works that have been figured out the present discourses and practices of contemporary architecture. In addition, the course focuses on the shifts in architecture and design theories and discourses; deals with several perspectives, paradigms and examples in architecture. The course deals with the social, economic, cultural, and political processes that shape architecture, design and cities.

Prerequisite: ARCH2203 History and Theory of Architecture I, ARCH2204 History and Theory of Architecture II

ARCH3306 Construction Management and Economics :

(2+1+0) 2C/ 3 ECTS

Project management planning, cost management, time management, quality management, contract administration, safety management, and the responsibilities and structure of the project management team. Organizing and leading by implementing project controls, defining roles and responsibilities, developing communication protocols, and identifying elements of project design and construction which may lead to disputes and claims.

ARCH3313 Urban Planning and Design :

(2+0+2) 3C/ 5 ECTS

Within the scope of the Urban Planning and Design Course; the aim is to explain to the students of architecture the relationships between urban scale, urban planning and urban design processes and architectural scale and architectural design processes.

The course-related application study aims to give the ability to analyze urban space elements in urban areas with different features and make urban texture analysis, define urban problems, set priorities, reach a synthesis, develop option/alternative thinking and design suggestions.

The Urban Planning and Design Course will cover definitions about the city, urban planning and urban design, historical development of cities, *plan* types and scales, urban planning and design process, and will focus on defining different activity areas in cities, determining population, area, density relationships in settlements, urban space formation and examining the texture of the urban landscape as well as the pedestrian-vehicle transportation systems. The relationship between the studies of urban planning, urban design and architecture will be explained, and the role of the architect in these fields will be defined.

In the application study, the sample areas selected from the existing urban environments will be analysed within the framework of potential analysis, potentials, constraints, problems and possibilities, and appropriate design options will be developed.

ARCH3302 Architectural Design Studio IV :**(0+0+8) 4C/ 8 ECTS**

In the studio, making versatile analysis of urban environment within the context of cultural heritage, sustainability, disasters, technological changes etc.; researching a multi-functional architectural program; and developing a critical, experimental and innovative design idea are the main objectives. The outline of the course are elaboration of the original architectural thought; space organization researches; critical evaluation of advanced structural systems and building technologies in the context of current architectural practices; and the development of techniques for visual, written and verbal communication and representation of design idea.

Prerequisite: ARCH3301 Architectural Design Studio III

ARCH3304 Environmental and Zoning Law :**(3+0+0) 3C/ 5 ECTS**

In the Environmental and Zoning Law Course; the aim is to introduce to architecture students the legal processes and legislation related to urban planning, design, environment and zoning.

The contents of the Environmental and Zoning Law Course are the place of environmental and zoning law in the Turkish legal system, scope, essential features of environmental law, principles, the Turkish environmental legislation, international agreements on the environment to which Turkey is a party, environmental impact assessment, application of zoning law, building law regulations, planning hierarchy, master plan types, special purpose plans, conservation planning, conservation of natural and cultural areas, urban transformation and renewal areas applications, legal framework, tourism planning, land and land arrangement, the concept of parcelling, building license, unlicensed building, building use permit and amnesty.

ARCH3310 Conservation Theories :**(3+0+1) 3C/ 5 ECTS**

The aim of this course is to introduce students with the concepts of historical environment, historical structure and cultural assets, and make them become conscious about the functional changes in historical structures within the historical context. The content of the course is the definition of concepts related to conservation and restoration, explanation of restoration techniques, examination of domestic and international applications, explanation of laws and regulations related to the subject and understanding of contemporary approaches. It is aimed to reinforce the content of the course, with the field study and group seminars in the curriculum.

ARCH4401 Architectural Design Studio V :**(0+0+8) 4C/ 8 ECTS**

In Studio V, multi-dimensional urban intervention and spatial transformation scenarios of different scales and qualities are developed. It is expected to integrate architectural design theories and practices that affect the form of the built environment. Resolving mixed-use and large-scale architectural design problems with a critical perspective in the design process; discussing public-semi-public-private space relationships; application of advanced information about building technology throughout the design process; and producing innovative, creative and individual architectural solutions constitute the main objectives of the studio.

Prerequisite: ARCH3302 Architectural Design Studio IV

ARCH4407 Application Project :**(0+0+8) 4C/ 8 ECTS**

Within the scope of the course, an advanced architectural preliminary project is developed into an application project. Design of the structural system, construction elements/ techniques and environmental control systems; and the production of necessary application details constitute the content of the course. The objective of the course is to integrate architectural design with building technology according to building regulations and ensuring coordination between them.

ARCH4900 Graduation Project :**(0+0+8) 4C/ 12 ECTS**

In the Graduation Project, projects are developed in the light of the knowledge and skills acquired during architectural education process. Resolution of a complex and multifunctional architectural program taking into account local and global, ecological, social, technological and cultural data; development of an original architectural and urban design proposal based on a high level of creative and critical thinking; fictionalization of architecture with different technical components such as structural system, material, etc.; analyzation and interpretation of the built and natural environment within the framework of social and professional awareness and ethical values; creating aesthetic, sustainable, safe and accessible spaces and developing and presenting a unique representation language are the main objectives of the study.

Prerequisite: ARCH4401 Architectural Design Studio V

ARCH2208 Computer Aided Architectural Design III :**(3+0+0) 3C/ 5 ECTS**

Within scope of the course, the concept and logic of modeling in digital environment are emphasized. Students are introduced with digital multimedia hardwares and softwares in the context of increasing effective use of information technologies in the field of design. The possibilities of designing and presenting by current softwares are examined. Building information modeling and techniques are studied through Autodesk Revit Architecture software. Coloring and resolution applications are carried out in the preparation of digitally designed products for different mediums. Polygon applications, motion, time, light, material, scenario and scene creation methods are taught in producing three dimensional geometric forms.

Prerequisite: ARCH2207 Computer Aided Architectural Design II

ARCH2211 Components:**(3+0+0) 3C/ 5 ECTS**

e-campus'teki ders tanımı: The functions, performance and application of internal and external building components. Joinery, doors, windows, gazing. Metal and pvc windows. Suspended ceilings, raised floors, demountable partitions, rooflights. Patent glazing and structural glazing.

ARCH2212 Contemporary Approaches In Architectural Presentation:**(3+0+0) 3C/ 5 AKTS**

This course aims to create a technical foundation for students for presenting their designs creatively, by providing information about the prominent contemporary and traditional architectural presentation methods and tools, and their use together. Within the scope of the course, first, verbal presentation, sketching, various graphical visualization, and video presentation methods are examined separately. Then, the possibilities of using these methods together are discussed, with simultaneous supporting assignments throughout the course, which will result in the manifestation of an authentic presentation language for each student.

Prerequisite: ARCH 1105 Architectural Presentation Techniques

ARCH3303 Building Services Systems :**(3+0+0) 3C/ 5 ECTS**

Within the scope of the course, it is aimed to transfer conceptual and technical information about sanitary installation, electrical and mechanical systems in buildings and to gain the ability to think the design of building service systems together with architectural concept. Necessary equipment, HVAC (heating, ventilation and air conditioning) systems, shafts, clean and waste water systems, rain water drainage systems, electrical and fire extinguishing installations etc. are detailed.

ARCH3309 3D Modelling and Animation :**(3+0+0) 3C/ 5 ECTS**

Modelling of complex and organic forms in virtual environment. Creation of photographic and realistic outprints of models developed and their presentation. Activation of camera and model objects. Creation of moveable vision outputs and development of video presentation.

Prerequisite: ARCH2207 Computer Aided Architectural Design II

ARCH3311 Environmental Psychology:**(3+0+0) 3C/ 5 AKTS**

Evolution of environmental psychology. Environmental effects on human behavior; environmental stress, restorative environment, human dimensions of wild life, evaluation of build environments, urban environment quality, environment and quality of, living. Factors affecting environmental behavior. Supporting environmental behaviors

ARCH 4042 Urban Planning History :**(3+0+0) 3C/ 5 ECTS**

The history of cities that have been formed and developed since the dawn of civilization until the present day, in the light of social, cultural, political, economic, and religious events affecting them. Description of the development and the activities of the city, its channels of movement and its components that provide its physical form. Historical background of urban planning and urban design.

ARCH4404 Urban Design :**(3+0+0) 3C/ 5 ECTS**

Analyzing the current situation in, and the development and transformation of a determined urban area, examining the problems and opportunities in a holistic and fragmented manner and carrying out studies based on design principles and decisions in the subjects needed in this field. Developing design alternatives with planning and design criteria, principles and methods and expressing them in 1/5000, 1/1000, 1/500 scales with models and drawings.

Prerequisite: ARCH3313 Urban Planning and Design

ARCH4405 Restoration Project :**(3+0+1) 3C / 5 ECTS**

The aim of this course is to introduce students with traditional and contemporary techniques of measuring for historical buildings and with the methods of transferring the measurements to rolove drawings. The content of the course includes presenting a restitution and restoration projects according to rolove drawings.

Prerequisite: ARCH3310 Conservation Theories

ARCH4406 Culture and Architecture :**(3+0+0) 3C/ 5 ECTS**

The primary objectives of Culture and Architecture Course are to gain ability on conceptualizing relations between architecture, culture and context; and to discuss the interdisciplinary features of architecture and its relation with culture within the unity of theory and practice. The course focuses on the evaluation of architectural designs located in different cultures and contexts through examples, discussion on culture in non-designed -or autogenous- environments, examples from Turkey and establishes historical and theoretical frameworks for investigation.

ARCH4408 Sustainable Architecture :**(3+0+0) 3C/ 5 AKTS**

Theoretical framework of ecological approach and its reflection to architecture; the concepts of green and sustainable architecture; historical evolution of ecological design in architecture. Examples of different approaches in ecological point of view from Turkey and other countries.

ARCH4409 Disaster Resilient Urban and Architectural Design:**(3+0+0) 3C/ 5 AKTS**

This course, focusing on earthquake and other natural hazard risks affecting urban and architectural scales, aims to improve students' awareness and skills on spatial planning and architectural design through risk management and hazard risk reduction measures against potential natural hazards and climate change impacts. Urban resilience, sustainable urban development and resilient architectural design are closely interrelated with this objective. Different natural hazards and climate change driven ones are taken into consideration in the content of the course with multi-hazard, multi-stakeholder and multi-scale approach to improve natural hazard resilience through urban and architectural design processes.

ARCH4411 Steel Structures:**(3+0+0) 3C/ 5 AKTS**

Historical trajectory of iron and steel; technical properties of steel; fundamental concepts, principles and systems of steel construction. Steel aesthetics in architecture; in-depth analysis of selected contemporary architectural examples

ARCH4413 Industrialized Buildings:**(3+0+0) 3C/ 5 AKTS**

Introducing systems related to the electric, electronic and mechanic installations used in buildings. Investigation of the effects of wind and sun on integrated systems.

ARCH4415 New Buildings In Historical Areas :**(3+0+0) 3C/ 5 ECTS**

The course aims to introduce to the concepts of culture and historical site as well as to the basic components and the processes that determine identity formation of historical areas. It includes discussions of different approaches and principles used in the design of contemporary buildings within historical areas and analyses of multiple local and global examples. As part of the course, students are required to develop a design of a new building within an existing historical site according to the analysis methods and scrutiny identified in advance.

ARCH4416 Surveying :**(3+0+0) 3C/ 5 ECTS**

The aim of the course is to convey the relationship of topography with architecture and to discuss common issues, terms and definitions of two disciplines. Students are expected to gain, theoretical knowledge and practical experience in subjects such as preliminary field work, exploration, sketch, installation of measuring instruments, measurement and calculation for the measurement applications, required at the beginning and continuation of architectural projects during the course.

ARCH4420 Housing in the Urban Environment :

(3+0+0) 3C/ 5 ECTS

The course aims at understanding the main concepts and approaches of housing studies, focusing on the socio-economic and spatial factors that affect the change of housing phenomenon. Developments of formal and informal housing in the urban environment and housing production models are examined; contemporary solutions such as co-housing, self-organized and community-led examples along with participatory, open-ended and flexible models are analyzed. Quality issues for housing design and good practices of quality housing are examined comparatively with the examples from various countries.

ARCH4421 Open and Green Space Design for Architecture:

(3+0+0) 3C/ 5 AKTS

This course aims to examine typology, standards, systemic planning and design of green areas and open spaces and to explore new methods and approaches for designing green spaces and open space. The course examines the design criteria and seeks an answer to how to make a successful design within the scope of different parameters. The course will also be a guide for designing green and open spaces of the future and for designing green and open spaces according to building typologies, different scales and climate characteristics.

ARCH2900 Industrial Practice I :

0C/ 1 AKTS

Consolidation of the knowledge and skills obtained through theoretical and practical lectures of architectural education, with the real design, construction, management and production processes. (Practice in office)

ARCH3900 Industrial Practice II :

0C/ 1 AKTS

Consolidation of the knowledge and skills obtained through theoretical and practical lectures of architectural education, with the real design, construction, management and production processes. (Practice in construction site)