

**DEPARTMENT OF ARCHITECTURE**

**2018 - 2019 ACADEMIC YEAR COURSE CURRICULUM**

**COURSE CONTENTS**

**1. YEAR – FALL SEMESTER**

**ARC 1000 Basic Design**

Course Hours: 2 + 4 Credits: 4 ECTS: 8

This course aims to teach basic design concepts such as form, pattern, color, composition, texture and shadow, two and three-dimensional design principles and different presentation techniques. Students are directed to determine the design theories that can be used to solve different visual design problems.

**ARC 1001 Architectural Design I**

Course Hours: 2 + 4 Credits: 4 ECTS: 8

This course focuses to comprehend the design components of the space in a context of the relation of body and space; scrutinizes the space as of an essential element in means of a physical and an experiential; aims to apply the concepts of the architectural design process to obtain products which are transformed into spatial experiences by means of three-dimensional presentation tools.

**ARC 1101 Technical Drawing I**

Course Hours: 2 + 2 Credits: 3 ECTS: 4

This course focuses on practicing various presentation and modeling techniques, orthographic, pictorial drawings and freehand sketches by equipping the students with different graphical expression and presentation skills.

**ARC 1701 Math for Architecture**

Course Hours: 2 + 0 Credits: 2 ECTS: 2

This course aims to improve the mathematical skills of architectural students. Students are introduced with basic mathematical concepts and analytical geometric principles to solve architectural design problems. Besides, an accurate basic knowledge that will benefit students in structural design is also gained.

**ENAR 101 English for Architecture I**

Course Hours: 3 + 0 Credits: 3 ECTS: 4

This course is designed to improve students' reading, listening, speaking and writing skills in the English language on the field of architecture.

## **1. YEAR – SPRING SEMESTER**

### **ARC 1002 Architectural Design II**

Prerequisite: ARC 1001

Course Hours: 4 + 4 Credits: 6 ECTS: 8

This course aims to discuss the basic concepts of this architectural design at different intervals from the body scale to the urban scale; it seeks to reinforce the design problems produced by these discussions with practices.

### **ARC 1102 Technical Drawing II**

Prerequisite: ARC 1101

Course Hours: 2 + 2 Credits: 3 ECTS: 6

The primary purpose is to enhance the students' ability to choose the best way to present their design and presentation of architecture at different scales. Students will do a different kind of practices to visualize their design concepts and to enhance their ability to communicate thoroughly and persuasively. Students will learn to use various tools to improve their graphics skills.

### **ARC 1104 Architectural Model Making Techniques**

Course Hours: 2 + 2 Credits: 3 ECTS: 4

Bu derste, öğrenciler kendi tasarım süreçlerini, fikirlerini ve tasarımlarının sunumunda kullanacakları üç boyutlu maketlerini uygulamaya yönelik teknikler ile malzeme ve yapım yöntemlerine ait bilgileri öğrenecektir.

In this course, students will learn mock-up techniques, materials and methods of construction to apply their design process, their ideas and three-dimensional models to be used in the presentation of their designs.

### **ARC 1402 Material and Construction Techniques**

Course Hours: 2 + 0 Credits: 2 ECTS: 4

Construction methods and technical training are provided in three modules. The content of this course is the first module of three modules. Therefore, it introduces a general overview of both traditional and modern necessary building materials, carrier systems, construction methods and application principles that make up a building. This course provides essential information for the other two modules that have been examined in more detail and gained systematic design and technical presentation skills.

### **ENAR 102 English for Architecture II**

Prerequisite: ENAR 101

Course Hours: 3 + 0 Credits: 3 ECTS: 4

This course aims to reinforce students' usage English language in the field of architecture, to reinforce terminological knowledge and to improve their reading, listening, speaking and

writing skills that they have in ENAR 1001 and to be able to continue their undergraduate programs easily.

## **2. YEAR – FALL SEMESTER**

### **ARC 2001 Architectural Design III**

Prerequisite: ARC 1002

Course Hour: 4+4                      Credit: 6              ECTS: 10

Its aimed to achieve the ability to develop solutions by considering design problem in a holistic way; discussion of the role of historical, natural and cultural environmental conditions in design; acquire the ability to discuss using terminology and concepts related to architecture; a critical evaluation of contemporary design approaches; integrate the outputs of all processes into the architectural project production process.

### **ARC 2101 Architectural Drawing and Representation I**

Course Hour: 2+2                      Credit: 3              ECTS:4

To acquire skills necessary for visual-graphic expression of spatial thoughts: Writing technique, scale concept, linear interpretation of plane intersection (plan-section-elevation relationship), orthographic drawing technique, axonometric and oblique drawing, 2-dimensional representation technique of 3-dimensional space geometry. It contains gaining freehand drawing skills: expressing visual perception and perceived freehand drawing, using various materials and presentation techniques to show thoughts, sketches, draft drawings.

### **ARC 2301 History of Architecture I**

Course Hour: 3+0                      Credit: 3              ECTS :3

This course focuses on ancient architecture dating up to 6th century AC. Notable buildings and cities of this period will be discussed. A thematic discussion will be held in the background of some topics within architectural ideas and practices. Each theme focuses on a particular period in history, and thus the course aims at a combination of chronological and thematic methodologies in architectural historiography.

### **ARC 2401 Building Construction Systems and Technologies I**

Prerequisite: ARC 1402

Course Hour: 1+2                      Credit: 2              ECTS: 5

The education on building materials and technologies are presented to the students with three modules. This course is the second step of these three modules. This initial presentation of primary building material and technologies knowledge introduced in ARC 1402, has been elaborated with a review of mechanical and structural behaviors, the hierarchy of combinations of these materials as building components to support the solidification of abstract design ideas. Theoretical information provided to students are encouraged to be practiced and implemented in student in-class projects which are resulted in 1/20 scale or bigger scale 2-dimensional and 3-dimensional technical representations with computer-aided design and drafting tools.

### **ARC 2403 Statics and Strength of Materials**

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Course Hour: 2+2                      Credit: 3                      ECTS:5

Introduction, principles of forces, free body concept, the support conditions, internal forces of structural elements, analysis of statically determinate structures, defining a section with its center of gravity, moment of inertia, radius of gyration and section modulus of elasticity, basic concepts of stress, tension, compression, flexure, shear, bending, torsion, dimensional determination of elements of different stress conditions related to static and strength of materials are taught in this course.

**2. YEAR – SPRING SEMESTER**

**ARC 2002 Architectural Design IV**

Prerequisite: ARC 2001

Course Hour: 4+4                      Credit: 6                      ECTS: 10

It is aimed to consideration of design discussions and ideas together with concepts such as structure, construction, environmental conditions; to gain the ability to transform the analysis of the built environment into data for design problems; to incorporate technical data into the design process and to develop the ability to express the design approach with architectural terminology.

**ARC 2004 Sustainable Design**

Course Hour: 1+2                      Credit: 2                      ECTS: 4

It examines issues that highlight energy-efficient design approaches and strategies based on economic, social and environmental benefits. It teaches sustainable principles based on passive and active green design. Green design evaluation tools are also introduced.

**ARC 2102 Architectural Drawing and Representation II**

Course Hour: 2+2                      Credit: 3                      ECTS: 4

To acquire skills necessary for visual-graphic interpretation of spatial thoughts: Writing technique, scale concept, linear expression of plane intersection (plan-section-elevation relationship), orthographic drawing technique, axonometric and oblique drawing, 2-dimensional representation technique of 3-dimensional space geometry. It contains gaining freehand drawing skills: expressing visual perception and perceived freehand drawing, using various materials and presentation techniques to show thoughts, sketches, draft drawings.

**ARC 2302 History of Architecture II**

Course Hour: 3+0                      Credit:3                      ECTS :3

The course is a survey of architecture starting from Middle Age Architecture until the Renaissance. While doing this, the subjects examined in this course are Turkish-Islamic architecture, Ottoman Architecture, Byzantine Architecture, Romanesque and Gothic Architecture. A thematic discussion will be held in the background of some topics within architectural ideas and practices. Each theme focuses on a particular period in history, and thus the course aims at a combination of chronological and thematic methodologies in architectural historiography.

### **ARC 2404 Building Construction Systems and Technologies II**

Prerequisite: ARC 2401

Course Hour: 2+2                      Credit:3                      ECTS: 6

The education on building materials and technologies are presented to the students with three modules. This course is the third and final step of these three modules. This initial presentation of primary building material and technologies knowledge introduced in ARC 2401, has been elaborated with a review of mechanical and structural behaviors, the hierarchy of combinations of these materials as building components to support the solidification of abstract design ideas. Theoretical information provided to students are encouraged to be practiced and implemented in student in-class projects which are resulted in 1/20 scale or bigger scale 2-dimensional and 3-dimensional technical representations with computer-aided design and drafting tools

### **ARC 2404 Design of Construction Systems**

Course Hour: 3+0                      Credit:3                      ECTS :3

The environmental, economic and constructive advantages and disadvantages that will determine the preference of each carrier system through the traditional grouping of carrier systems (masonry, structure, composite) will be discussed. Information on other building materials that can be integrated according to the structure of the relevant system will be provided. The views of the architectural and spatial potentials of the choice of the system concerned will be discussed.

## **3rd YEAR – FALL SEMESTER**

### **ARC 3001 Architectural Design Studio V**

Prerequisite: ARC 2002

Course Hours: 4+4                      Credit: 6                      ECTS: 10

The student will develop capability to analyze, synthesize and in the light of personal observation, represent his/her design approaches; ability to transform the design approaches to own perception shaped and influenced by environmental, cultural, historical, social and such kind of factors; resolving space relation and developing new relationships; regarding architectural criticism as a part of design process.

### **ARC 3003 Urban Design Studio I**

Course Hours: 1+2                      Credit: 2                      ECTS: 4

The course aims to guide the students to gain critical thinking ability by regarding various approaches of urban design principles. Selected readings, specific design comparisons, and multiple theories will be discussed with students. Later, by deciding on a particular theme, and regarding the learnings of the course, the students will design an urban area.

### **ARC 3301 History of Architecture III**

Course Hours: 3+0                      Credit: 3                      ECTS: 3

In this course, the history of architecture will be overviewed regarding the period starting from Mannerism to the late of 19th century. Mannerism, Baroque, Rococo, Neo-Classicism Eclecticism and Art Nuova are the topics that will be examined during the course. Each topic

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focus on a specific historical period thus the background factors leading to the establishment of these periods are also discussed together. By this way, the course establishes a methodology combining thematic and chronologic topic in the historiography.

**ARC 3401 Environmental Control Systems in Buildings I**

Course Hours: 2+0                      Credit: 2                      ECTS: 3

In this course, the scope and definition of environmental control technologies and daylight illumination. Furthermore, the ways of heat transfer in a built environment, precautions for heat and moisture control, heat and moisture permeability of building materials, control of condensation, and architectural and space acoustics, sound and noise, sound transfer, and noise control opportunities are the subtopics that will be overviewed during the course.

**ARC 3403 Construction Project**

Prerequisite: ARC 2402

Course Hours: 2+4                      Credit: 3                      ECTS: 5

The objective of the course is providing enough knowledge and capability to the students for management of an application phase of a project including all dimensions, materials, details and approximate cost estimation of an architectural project. By implementing both theoretical and practical knowledge together, the students will have enough management capacity to execute an application project. The building materials, exterior and interior spaces, advanced techniques for understanding structural and construction details, essentials for application project drawing and fundamentals for construction site are the topics that will be discussed in this course.

**ARC 3701 Summer Practice I**

Course Hours: 0+0                      Credit: 0                      ECTS: 2

The intern is 30 work days

**3. YEAR – SPRING SEMESTER**

**ARC 3002 Architectural Design Studio VI**

Prerequisite: ARC 3001

Course Hours: 4+4                      Credit: 6                      ECTS: 10

Development of design approaches together with environment upon complex and multi-functional building program; discussion of findings derived from analyze, synthesize and personal observation with concepts such as structure and construction; aiming to discuss these findings without considering different scale and complication levels.

**ARC 3004 Urban Design Studio II**

Course Hours: 2+2                      Credit: 3                      ECTS: 4

In this course, appropriate information and knowledge on contemporary, wealthy, identifiable and sustainable urban space and environments such as two dimensional and 3-dimensional design in urban design; development and implementation methods in which level of aesthetic, social and functional aspects are strong. Furthermore, by paying attention to cultural heritage,

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and providing not only national but also international examples, the technological, socio-economic and other factors influencing urban design outputs will be discussed.

**ARC 3302 History of Contemporary Architecture**

Course Hours: 3+0                      Credit: 3                      ECTS: 3

Starting from mid of 19th century to nowadays, history of contemporary architecture present trends, works, and theories; by gaining of historical criticism and interpretation to the students, this knowledge will be used in the architectural design process as a cultural and historical heritage.

**ARC 3402 Environmental Control Systems in Buildings II**

Course Hours: 2+0                      Credit: 2                      ECTS: 4

The course includes space acoustic, sound in open and closed space, absorption of sound, criteria of space acoustic, vibration and its time, illumination, light reflection and permeation of objects, photometric magnitudes, lamps and lighting devices, quality, attributes and design of lighting, color string and color in architecture.

**ARC 3602 Recording and Analysis of Historical Buildings**

Prerequisite: ARC 1102

Course Hours: 3+2                      Credit: 4                      ECTS: 6

The course is aiming to provide to the student's essential ability to survey and document the historical buildings and sites. At the end of the course, it is expected of the students to know not only traditional but also modern methods including dimensioned drawings and edited photos. Moreover, the historical and functional importance of the site is emphasized.

**4. YEAR – FALL SEMESTER**

**ARC 4001 Architectural Design VII**

Prerequisite: ARC 3002

Course Hours: 4 + 4 Credits: 6 ECTS: 10

Establishing and developing a building program by conducting environmental assessment with data collection, analysis and synthesis methods; the ability to master all stages in the neighborhood, the program, and the process of transforming the program into a structure; incorporating components such as structure, detail, construction into all processes of design; the ability to transform building systems and technologies into part of design during the development of complex building programs; It is aimed to demonstrate the ability to manage the entire design process using different scales and inputs.

**ARC 4601 Conservation and Restoration Project**

Prerequisite: ARC 3602

Course Hours: 2 + 4 Credits: 4 ECTS: 6

The course deals with the restoration process, conservation techniques, reuse of historical heritage. At the beginning of the course, summaries of historic structures and survey drawings and documentation of the areas are presented. Students will prepare a restoration project starting

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from the survey point to the detailed design scale. The course includes topics that affect contemporary conservation practices of cultural heritage.

**ARC 4703 Occupational Health and Safety in Architecture I**

Course Hours: 2 + 0 Credits: 2 ECTS: 3

For this course focuses, concept of occupational health and safety, holistic approach to occupational health and safety; a culture of risk prevention at work; the importance of safety culture and its place in everyday life; ensuring the creation and continuity of safety culture; basic principles of occupational health and safety; the place of business health and safety in business management, healthy and safe life.

**ARC 4002 Architectural Design VIII**

Prerequisite: ARC 4001

Course Hours: 4 + 4 Credits: 6 ECTS: 10

Ability to discuss architectural design problem by assessing developmental program (facility programming, functional and operational requirements, and scoping, environmental factors, all other conditions, and requirements. Converting all acquired data, observations and inferences into scale and content to be included in the design process; evaluation of design concepts, criteria and criticisms through architectural projects and development of alternative proposals and projects; it is aimed to reveal the ability of reflecting the experience and knowledge obtained in the whole process of design and transforming them into spatial relations.

**ARC 4702 Summer Practice II**

Course Hours: 0 + 0 Credits: 0 ECTS: 2

The internship is 30 working days.

**ARC 4704 Occupational Health and Safety in Architecture II**

Course Hours: 2 + 0 Credits: 2 ECTS: 3

National and international definitions of occupational health and safety concepts for students, examples and applications of holistic approach to occupational health and safety; investigation of activities that contribute to risk prevention culture at work; activities that can be carried out to ensure the creation and continuity of safety culture; the place of occupational health and safety in the operational budget, healthy and safe life and practices.

**ARC 4706 Professional Practice and Regulations**

Course Hours: 3                      Credit: 3                      ECTS: 3

The content of the course includes necessary knowledge and information about architectural professional practice such as ethical codes, regulations, liabilities, duties, rights, procedures for architectural business establishments, the role of architecture in project life-cycle, impacts of information technologies in architecture, project development according to the stages defined in architectural service specification document, preparation of material take-off list, bill of quantities, cost estimations and current building codes and regulations and urban transformation studies.