



SUMMARY of COURSE DESCRIPTIONS

BACHELOR OF ARCHITECTURAL ENGINEERING

Remarks:

According to the academic instruction of the Art University of Isfahan, the academic system of this degree is credit-based. The minimum duration of education is 4 years (8 semesters), with courses provided during 17 weeks in each semester. Each Theoretical credit is presented in 17 hours, each Practical credit in 34 hours, and each Workshop credit in 51 hours.

Various types of courses need to be taken by an Undergraduate student at this university, with 142 cumulative credits as listed below:

1. Basic (29 credits)
2. Major (60 credits)
3. Specialized (27 credits)
4. Elective (2 credits)
5. General (24 credits)

Each of these categories contains some courses to be passed, according to the educational regulations administered by the Ministry of Science, Research, and Technology of the Islamic Republic of Iran.

The Grading System in this university is based on a scale from 0 to 20. The minimum passing grade for a course leading to an Associate's Degree or Bachelor's Degree is 10, for a course leading to a Master's Degree is 12, and for a course leading to a Ph.D. Degree is 14.



Basic Courses

NO.	Course Title	Credit	Hours					Total	Description
			Per Week	Theory	Practical	Design Workshop			
01	Applied Geometry <u>1411001</u>	3	7	17	-	102	119	This course aims to develop the ability to understand and visualize architectural volumes, emphasizing exercises on recognizing and depicting lines, surfaces, and volumes. Additionally, it focuses on honing skills in architectural drawing, covering topics such as drawing parallel lines, network of circles, and using computer drawing software after mastering traditional drawing tools.	
02	Materials & Construction Workshop <u>1411002</u>	2	6	-	-	102	102	This course aims to acquaint students with diverse materials, enhance object-making skills, and emphasize the significance of materials in architectural works. The course includes hands-on exercises with materials like plaster, clay, wood, and metal, covering tasks such as creating reliefs, constructing volumes, imitating objects, and practicing fundamental building techniques.	
03	Perception & Expression of Environment <u>1411003</u>	3	7	17	-	102	119	This course aims to develop a keen observation and meaning-seeking perspective, facilitating the expression of environmental perceptions through words, images, or other means. The syllabus includes exercises such as documenting a chosen life group, enhancing freehand drawing skills with various tools, and using imaginative sources like literature and films to strengthen the ability to imagine and describe environments.	
04	Architectural Expression I <u>1411004</u>	2	4	17	-	51	68	This course aims to cultivate a perceptive view and enhance students' understanding of the environment by teaching various presentation and expression techniques. The course focuses on three main components: freehand drawing, emphasizing proportions and spatial depth; color theory and application; and photography, covering equipment use, architectural photography, and artistic expression through photo analysis.	



05	Architectural Expression II <u>1411005</u>	2	4	17	-	51	68	This course focuses on the practical application of techniques for visualizing and presenting architectural spaces. The course involves semester-long projects where students use various tools such as freehand drawing, perspective, illustration, diagrams, collages, and renderings to introduce hypothetical buildings, emphasizing both instructor-selected and student-chosen structures.
06	Perspective Geometry <u>1411006</u>	2	3	17	34	-	51	This course aims to familiarize students with a scientific understanding of three-dimensional space in perspective and enhance their ability to visualize spatial ideas. The syllabus covers geometry background, principles of image and drawing in perspective, including point of view, angle of view, and techniques for representing objects and shadows in various perspectives.
07	Mathematics & Statistics <u>1411007</u>	3	3	51	-	-	51	This course aims to enhance students' analytical abilities through basic mathematics concepts, including sets, coordinates, and algebraic functions. It also introduces quantitative methods in research, covering descriptive and inferential statistics to facilitate understanding complex subjects using mathematical tools.
08	Human, Nature & Architecture <u>1411008</u>	2	3	17	34	-	51	This course aims to cultivate environmental sensitivity and provide an understanding of the principles governing natural and man-made images in the environment. The syllabus explores the influence of natural phenomena on architecture, examining micro and macro scales, including inanimate objects, plants, animals, and the dimensions of human existence. The course emphasizes studying various examples to unveil the precise order and wisdom behind the formation of different forms and manifestations of existence.
09	Preliminaries of Architectural Design I <u>1411009</u>	5	13	17	-	204	221	This course aims to introduce students to various essential components of architectural design. The course focuses on strengthening students' visualization, imagination, and reasoning abilities, emphasizing physical elements that constitute a building, including roof, floor, wall, window, and spatial organization. It serves as a foundational step in understanding both material and conceptual aspects of architectural design, with subsequent courses delving into semantic and conceptual scopes. The final exercise entails summarizing the semester's experiences.



Major Courses

NO.	Course Title	Credit	Hours					Description
			Per Week	Theory	Practical	Design Workshop	Total	
11	Theoretical Fundamentals of Architecture <u>1411011</u>	3	3	51	-	-	51	The course introduces students to architecture as a profession, providing theoretical foundations and insight into the entire field. The syllabus covers topics such as field definition, the link between architecture and culture, architectural knowledge, schools, works, nature's influence, and the skills architects must master, leading to discussions about the professional future and job opportunities for architecture graduates.
12	World Architecture <u>1411046</u>	2	2	34	-	-	34	This course focuses on familiarizing students with the most prominent case studies in world architecture history to enhance students' understanding of design basics, form, and space concepts. The syllabus spans various architectural styles, starting from the cave-dwelling era and megaliths to exploring Mesopotamian, Elamite, Achaemenid, Ancient Egyptian, Greek, Roman, Sassanid, Early Christian, Byzantine, Romanesque, Gothic, Early Renaissance, Progressive Renaissance and Baroque architectures. Discussions entail materials, techniques, construction methods, elements, details, and decorations, emphasizing symbolic and social contexts.
13	Historical Buildings Review & Survey <u>1411013</u>	3	9	-	-	153	153	This course involves direct engagement with Islamic architecture in Iran, fostering a deep understanding of its qualities through direct perception and touch. Students undertake a comprehensive exercise, meticulously presenting a historical monument with detailed drawings, photographs, freehand plans, historical research, and a descriptive text. The emphasis is on precision and complete presentation, including large-scale drawings, colored images, and a three-dimensional model (mock-up) of the building facade or a portion thereof.



14	Introduction to Islamic Architecture <u>1411014</u>	4	5	51	34	-	85	This course focuses on introducing students to the concepts, spatial qualities, and design principles of Islamic architecture in Iran, providing a foundation for their architectural identity. Topics include the definition of Islamic architecture, its evolution in Iran, and detailed introductions to various building types. The course covers principles governing design, spatial elements, and artistic aspects such as painting, tiling, and motifs. It also highlights important sources for research in Islamic art and architecture in Iran.
15	Introduction to Contemporary Architecture <u>1411015</u>	2	2	34	-	-	34	This course aims to familiarize students with the historical, intellectual, and social roots of contemporary architecture, tracing the origins of modernism and post-modernism from the Enlightenment era through the 19th century. The syllabus covers architectural movements, Rationalism, Functionalism, and Romanticism in the 19th century, leading to the Progressive movement. It delves into Modernism, Bauhaus School, Expressionism, Art-Nouveau, Art Deco, Neoclassical architecture, and Post-War developments. It also explores engineering ideals of the 1960s, Structuralism, Post-Modernism, High-Tech, Deconstruction, and contemporary Iranian architecture.
16	Surveying <u>1411016</u>	2	4	17	-	51	68	This course aims to acquaint students with mapping techniques, including land surveying and construction planning & implementation. The syllabus covers general mapping principles, types of maps, scales, errors, measuring distances, mapping tools, surveying methods, alignment procedures, compass mapping, theodolite usage, point transfer techniques, map preparation, and topographic mapping through stereometry. Practical applications include road maps, building layouts, transverse and longitudinal profiles, and earthwork operations control.
17	Regulating the Environmental Conditions <u>1411017</u>	2	2	34	-	-	34	This course aims to assess and diagnose the thermal behavior of buildings influenced by the surrounding climate. The theoretical part covers general theories related to climate, solar radiation, sun geometry, human comfort factors, psychrometric charts, heat transfer basics, building ventilation, and estimation of thermal loads. The practical part involves applying these theories through exercises. Topics include the sun's angles and shadow calculations, human comfort factors, psychrometric chart analysis, heat transfer mechanisms, ventilation calculations, thermal load estimation methods, window glass



								properties, and the history and methods of using natural energy sources in buildings.
18	Electrical Installations <u>1411018</u>	2	2	34	-	-	34	This course focuses on the effects of light and sound phenomena in the environment and living spaces, providing guidance on incorporating them in building design. Topics include light propagation, reflection, vision laws, frequency, thermal effects, light types, and suitable materials. Sound principles, intensity, absorption, reflection, and acoustics in closed spaces, along with materials and methods for sound insulation, are also explored.
19	Mechanical Installations <u>1411019</u>	2	2	34	-	-	34	This course introduces students to water supply, heating, and cooling methods for buildings. Topics include sanitary facilities covering water supply and sewage, proper network placement, disposal methods, and heating and cooling facilities. It explores water central heating, hot air heating, steam heating, and air conditioning methods, covering production, transmission, distribution equipment, and their appropriate application in different buildings.
20	Statics <u>1411020</u>	2	2	34	-	-	34	This course aims to impart knowledge about forces, covering various behaviors and their laws. The syllabus includes the recognition and application of forces, structures, equilibrium, determination of reactions, internal forces in trusses, and the study of natural structures. It delves into properties of sections, involving static moments, moment of inertia, section modulus, and radius of gyration. Practical examples and discussions enhance understanding.
21	Strength of Materials & Steel Structures <u>1411021</u>	2	2	34	-	-	34	This course introduces students to material behaviors under forces, covering fatigue, knowledge of materials, indeterminate structural analyses, forces on buildings, and design principles for metal frames. It includes practical aspects like connecting beams and columns, addressing wind loads, and designing for resistance, offering a comprehensive understanding of structural calculations and applications.
22	Concrete Structures <u>1411022</u>	2	2	34	-	-	34	The course aims to familiarize students with the behaviors and calculations of simple and reinforced concrete, construction methods, and the analysis of merits and demerits. The syllabus encompasses concrete technology, history, advantages and disadvantages,



									reinforced concrete design, slab design, column design, foundations, and introduces laboratory activities such as granulation tests, slump tests, and concrete mixing.
23	Quantity Surveying & Estimation <u>1411023</u>	2	3	17	34	-	51		This course aims to familiarize students with economic issues and their integration into planning and implementation processes, emphasizing the importance of economic considerations in construction projects. The syllabus covers principles of measurement, estimation, cost analysis, and pricing methods, ensuring that architecture students develop a holistic understanding of economic factors in building design and construction.
24	Site Organization & Management <u>1411018</u>	2	4	17	-	51	68		This course aims to familiarize students with the organizational dynamics in construction planning, emphasizing the roles of the employer, consulting engineer, and contractor. The syllabus covers legal, technical, and financial relations between these entities, explores contract types, and delves into resource management, including manpower, machinery, and soil considerations. Additionally, the course provides practical exercises on linear planning, critical path method, and time-cost facilities analysis to enhance students' skills in project scheduling and management.
25	Construction Materials <u>1411025</u>	2	3	17	34	-	51		This course aims to equip students with the knowledge of building materials and their impact on architectural design, emphasizing the analysis and selection of optimal materials. The syllabus covers a range of materials, including stone, bricks, concrete, metals, wood, glass, and various construction components, providing insights into their production, characteristics, and applications. Students will learn to consider physical, mechanical, chemical, architectural, aesthetic, and economic factors when choosing materials, as well as gain practical understanding of handling, storage, and utilization of different building materials.
26	Construction I <u>1411026</u>	2	2	34	-	-	34		The course aims to analyze the role and function of building elements by examining their formation logic and materials. The syllabus covers building basics, historical development, and examples of structures from different periods. It explores generalities such as defining buildings, understanding static and dynamic forces, and criteria for building forms. Additionally, the syllabus delves into building establishment factors like soil, weather, and vegetation, as well as building



									components including foundations, bases, walls, roofs, and interior flooring, with an emphasis on materials, construction methods, and functional considerations.
27	Construction II & Site Report <u>1411027</u>	3	4	34	34	-	68		This course builds on Construction I, focusing on skeletal buildings and expanding to additional elements and their details. Topics include vertical and horizontal load-bearing elements, roof structures, walls, partitions, facades, stairs, inclined surfaces, lifts, safety measures, and considerations for natural disasters. The course also covers elements like doors, windows, awnings, fences, skylights, and building services, analyzing various building examples and their characteristics, construction methods, and facilities.
28	Rural Architecture I <u>1411028</u>	3	7	17	-	102	119		The course aims to acquaint students with the life, texture, and unique architecture of villages, exploring the influences of natural and human factors on their formation (geographical, cultural, economic, social). The syllabus includes analyzing rural buildings in Iran, understanding the scientific research method, and conducting fieldwork in small groups to study a specific village, focusing on its physical structure, buildings, and various aspects of rural life.
29	Rural Architecture II <u>1411029</u>	3	7	17	-	102	119		The course aims to teach students rural design by focusing on natural and human factors influencing rural architecture. Emphasis is on creating habitable spaces aligned with village life, using traditional materials and construction techniques. Students design residential units or selected public buildings with guidance on exploring traditional materials and technologies. The exercise encourages students to understand and harmonize with the village complex, traditions, and relationships.
30	Architectural Design I <u>1411030</u>	5	13	17	-	204	221		Architectural Design I is the initial comprehensive project where students integrate insights from preparatory workshops. Emphasizing the design process, the course guides beginners through developing a general idea into an architectural design, covering various aspects of architecture. The project focuses on simple and concrete functions, such as small terminals, fruit markets, or production workshops, with attention to factors like environment, context, and functional systems. A recommended plot size is 1500 square meters with 30-50% infrastructure.



31	Architectural Design II <u>1411031</u>	5	13	17	-	204	221	Architectural Design III focuses on responding to the cultural and expressive dimensions of architecture, considering factors such as technology, manpower, and economic aspects. The course aims to create architecture reflecting cultural and artistic ideals, emphasizing both form and function. Suitable project topics, such as museums, monuments, or cultural houses, prioritize expressive and artistic dimensions. The infrastructure size is limited to 2000 to 3000 square meters, with land size determined by the chosen topic. The scale of presentation ranges from 1/500 to 1/20, emphasizing the importance of detailing spatial elements.
32	Architectural Design III <u>1411032</u>	5	13	17	-	204	221	The course aims to respond to the cultural and expressive dimensions of architecture, considering various influential factors in architectural formation. It emphasizes the integration of cultural values, and functional meaning into the building's shape and space. Project topics such as "museum," "monument," or "cultural center" are recommended, focusing on expressive and artistic dimensions. The infrastructure size is limited to 2000 to 3000 square meters, with the land size determined by the chosen topic. The course highlights the subtleties of architectural expression in both external and internal spaces, with a scale ranging from 1/500 to 1/20, emphasizing attention to spatial details.



Specialized Courses

NO.	Course Title	Credit	Hours					Description
			Per Week	Theory	Practical	Design Workshop	Total	
33	Introduction to Fundamentals of Physical Planning <u>1411033</u>	2	4	17	-	51	68	The course introduces the concept of urban planning, covering architectural complex planning and teaching planning and management. The syllabus includes exploring planning concepts, urban and regional planning, methods of architectural planning, land use planning, system approach in planning, land use audit methods, population considerations, talent-based activity location, urban system elements' compatibility, building quality and urban environment, housing planning, environmental studies in urban planning, city service chain criteria, urban standards, and urban regulations. Practical exercises provide hands-on experience with theoretical concepts using concrete examples.
34	Urban Spaces Analysis <u>1411034</u>	3	4	34	34	-	68	The course aims to provide familiarity with urban spaces and urban design, focusing on the basics of design at the scale of architectural collections and architectural elements within urban contexts. The syllabus covers the recognition and analysis of spaces on micro and macro scales, including topics such as urban design definition, architect's role in large projects, and the relationship between man and the environment. It also delves into the analysis of architectural elements, spatial organizations in architectural collections, and urban spaces like squares and streets. Visual and perceptual qualities in urban spaces are explored, emphasizing unity, diversity, spatial sequence, hierarchy, orientation, and identity. Practical exercises include sketches, short-term projects, and analysis of existing spaces. The urban design process and techniques, such as study methods, site analysis, and design examples, are also covered.



35	Introduction to Building Restoration <u>1411035</u>	3	5	34	-	51	85	The course introduces students to cultural restoration, focusing on historical building preservation and restoration plan preparation. It covers definitions, Western restoration views, Iranian restoration history, and institutional roles. The restoration process includes on-site studies, pathology recognition, and repair methods. Students learn about special tools and workshops, leading to the creation of a building restoration plan. The course also touches on the role of tissue restoration in contemporary urban development.
36	Architectural Design IV <u>1411036</u>	5	13	17	-	204	221	The course aims to integrate various aspects of architecture, emphasizing the comprehensive design of functional systems, facilities, and architectural elements. Students are expected to create a cohesive architectural design that considers structural, functional, and environmental aspects. The project topics, such as hospitals, airports, museums, and facilities for the disabled, require attention to complex factors. The focus is on achieving a detailed and systematic understanding of program requirements, environmental conditions, and contextual considerations. The project scale is recommended to be up to 1/100 to address design complexities effectively.
37	Architectural Design V <u>1411037</u>	5	13	17	-	204	221	The course aims to equip students with the knowledge required for designing residential complexes, considering various factors such as environmental conditions, social aspects, cultural elements, and economic characteristics. The syllabus involves designing a residential complex of approximately forty units with medium to high density, emphasizing complexity in design. The topics covered include designing adaptable housing units, determining the organizational structure of the complex, and creating collective spaces. Special attention is given to visual and perceptual qualities, ensuring the complex integrates well with its surroundings.
38	Technical Design <u>1411038</u>	3	7	17	-	102	119	The course emphasizes applying theoretical concepts and practical skills through exercises covering building systems, materials, and execution of elements. The main project involves designing a building, focusing on integrating technical aspects and considering forces, materials, and facility issues. The evaluation emphasizes creativity, coordination with the static system, environmental considerations, and economic efficiency. Full



								attention to implementation details is crucial in the final presentation.
39	Final Project <u>1411039</u>	6	18	-	-	306	306	This course focuses on developing students' abilities in comprehensive architectural design. Students choose a project topic, ensuring unity and coherence in design factors. The final design project covers the complete design process, incorporating cultural, artistic, and technical elements. It includes a review of the static system, structure, and facility issues for a well-rounded architectural design. The guidance involves collaboration with professors from relevant technical fields, resulting in a final work comprising studies, a report, visual documents, and executive plans.



Elective Courses

NO.	Course Title	Credit	Hours					Description
			Per Week	Theory	Practical	Design Workshop	Total	
40	Iranian Studies <u>1411045</u>	2	2	34	-	-	34	This course introduces students to various dimensions of Iranian history, culture, language and literature from historical periods to the modern era. Students Develop a critical awareness of the built environment as a form of cultural production, while better understanding the connections between architecture, place and society.
41	Computer Application in Architecture <u>1411051</u>	2	3	17	34	-	51	The course offers a comprehensive introduction to computer-aided design (CAD) systems, emphasizing the efficient preparation of construction documentation, specifically working drawings. Students will learn CAD methodology through lectures and exercises, discussing industry standards and current technology in documentation preparation.

General Courses

NO.	Course Title	Credit	Hours					Description
			Per Week	Theory	Practical	Design Workshop	Total	
42	Persian language <u>1610001</u>	3	2	34	-	-	34	Teaches Persian literature to students and familiarizes them with Persian poets.
43	English Language <u>1610002</u>	3	2	34	-	-	34	The course focuses on enhancing spoken English proficiency, emphasizing pronunciation improvement, conversation strategies, and oral presentation skills through individual and group activities.
44	Islamic Revolution of Iran <u>1611016</u>	2	2	34	-	-	34	Theoretical acquaintance with the causes and factors of the Islamic Revolution and analytical study of cultural, social and political developments of the Islamic Revolution and subsequent issues.



45	Analytical History of Early Islam <u>1611020</u>	2	2	34	-	-	34	Familiarity with how Islam emerged and spread and the way of transition from ignorant society to Islamic society.
46	Physical Education I <u>1610003</u>	1	2	-	34	-	68	The Physical Education course aims to boost overall physical fitness in students by emphasizing key factors such as speed, strength, musculoskeletal endurance, agility, and flexibility.
47	Physical Education II (Sports) <u>1610020</u>	1	2	-	34	-	68	Students choose and receive professional training in their preferred sports, including Ping Pong, Football, Basketball, Volleyball, or other areas of interest.
48	Family Knowledge & Population <u>1611007</u>	2	2	34	-	-	34	This module trains healthcare workers in developing countries on public health and family planning. It emphasizes informed reproductive choices, women's health, counseling, and decision-making. Family planning services serve as entry points for comprehensive healthcare, promoting equity and efficiency.
49	Quran Thematic Exegesis <u>1611022</u>	2	2	34	-	-	34	Familiarity with some life-giving concepts of the Holy Quran in the form of thematic attitude.
50	Islamic Thought I: Origins & Insurrection <u>1611008</u>	2	2	34	-	-	34	Explain the necessity of Muslim students to pay attention to religion and religious categories, deepen and expand information and strengthen students' theism and faith in the field of theology and resurrection.
51	Islamic Thought II: Prophecy & Imamate <u>1611009</u>	2	2	34	-	-	34	Becoming familiar with instructions in Islam, continuing "Islamic Thought I" discussions. Expanding students' knowledge about religion, prophethood, Islam, Imamate and leadership, which is divided into three sections.
52	Living Custom (Applied Ethics) <u>1611014</u>	2	2	34	-	-	34	Familiarity of students with the principles and concepts of Islamic ethics in the field of moral virtues and vices, in order to acquire virtues and avoid moral vices.
53	Culture & Civilization of Islam & Iran <u>1611019</u>	2	2	34	-	-	34	Becoming familiar with the various development stages of Islamic culture and civilization in Iran throughout history.