

Description of the courses of the Bachelor of Architecture program Year 2021 / 2022 (second)

Faculty Requirement (Compulsory)

201133	History and Theories of Art and Architecture in the Old Ages	(3: 3 – 0)
Prerequisite:	---	
Study and analysis of civic and built art since the first human settlements including the prehistoric and full analysis of thought and civic and architectural product in the Nile valley and Mesopotamia (Babylonians, Sumerians, Assyrians, etc.), Greek, Roman, and other civilizations under the influence of environmental factors whether natural, social, cultural or other.		
201134	History and Theories of Art and Architecture in the Medieval Ages	(3: 3 – 0)
Prerequisite:	201133	
Study and analysis of civic and built art since the influences of Christianity in the Medieval Ages including the study of the Byzantine, Renaissance, Gothic, Mannerism, Baroque, and Rococo periods under the influence of environmental factors whether natural, social, cultural or other, across the geographical area with international, regional, and influences.		
201234	History and Theories of Art and Architecture in the Islamic Period	(3: 3 – 0)
Prerequisite:	201134	
Study and analysis of the Islamic theories and thought in the civic product of art and architecture and their development since its inception in the Arabian Peninsula throughout its influences and flourishing in the Levant, Egypt, Iraq, North Africa, Turkey, and Andalusia. The study of the effects of Islamic thought in the places of its spreading from the Far East to West Europe before the Rashidi, Umayyad, Abbasid, Seljuqs, Fatimid, and Ottoman under the influence of environmental, natural, social, cultural and other with clear analysis of local and regional architecture in this period.		
202103	Basic Design	(3: 1 – 2)
Prerequisite:	---	
Two-dimensional design principles (line, shape, color, value, texture, size and direction) and the principles of design that creates balance, harmony, emphasis, unity, and variety into design compositions of two dimensions and basic understanding of the third dimension in design throughout selected short exercises and projects.		
202213	Research Skills	(3: 3 – 0)
Prerequisite:	---	
Techniques and methods of scientific research and its methodology in organizing the principles of scientific research, gathering and interpreting data using a strategy to reach results in the fields of architecture and design in the built and visual environment and writing research reports and abstracts of selected case studies.		
203107	Free-Hand Drawing	(3: 1 – 2)
Prerequisite:	---	
The perception and transfer of what the eye sees and the fluency in expressing it through simulation of various forms from different angles through free-hand drawing using pencils, ink and colors. The recognition of proportions and showing the texture and appearance of objects and their relationship to shade and light through different materials and structural media while expressing all this in free-hand drawing.		
203221	Aesthetics and Art Appreciation	(3: 3 – 0)
Prerequisite:	---	
A brief history of the philosophy of aesthetics through ancient civilizations until modern theories. While addressing aesthetics in the fine arts in general including literature, music, and visual arts, and to provide opportunities for knowledge of human and aesthetic needs and requirements throughout history. With how to taste the arts and highlight the values of aesthetic and formative, and its relationship to the time and place in which they were found.		

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Faculty Requirement (Elective)

201363	Documentation of Urban Heritage	(3: 2 – 1)
Prerequisite:	---	
Methods and techniques of surveys and field studies for use in documentation of buildings and heritage sites including assessment and classification, technical reporting and analysis of selected cases and development of strategies for conservation and restoration of urban heritage, as well as full documentation of part of the urban heritage (survey, documentation and production of complete plans) for selected buildings.		
201432	Local and Regional Architecture	(3: 3 – 0)
Prerequisite:	---	
Study and analysis of urban production in the local and regional environment and focus on building the icons of regional and local architecture such as (Hassan Fathi, Rasem Badran, Mohammed Makiya, Rifat al-Jadirji, and others) starting from the twentieth century.		
202208	Painting	(3: 1 – 2)
Prerequisite:	---	
The use of water, oil and acrylic colors in the drawing and recognition of its aesthetic effects in the composition of the image with appropriate practical applications.		
202255	Technical Manual & Workshop	(3: 1 – 2)
Prerequisite:	---	
Knowledge of various materials and raw materials used in interior design, such as wood and metals, and the identification of their properties and potentials with practical applications and the use of tools and machines related to them.		
203208	Design and Graphic Art	(3: 1 – 2)
Prerequisite:	---	
The rules of designing signs, decals and advertisements whether fixed or moving and their important role as an integral component of interior and architectural space design, using the means of drawing, design, models and printing techniques on the surfaces of different materials.		
203422	Theory of Semiotics in Design	(3: 3 – 0)
Prerequisite:	---	
The science of signs and symbols in the process of creativity across the different temporal ages and their evolution, and the implications of these signs and symbols of the meanings of sensory and moral in the life of the human beings to control the adjustment of standards of artistic taste and work to coordinate relations between members of the community on the one hand and with other communities on the other.		
205212	The Art of Creative Thinking	(3: 3 – 0)
Prerequisite:	---	
This course is designed to introduce the students to the creative process in visual communication and the creative industries. This course would encourage students to generate and develop new ideas with by applying different theories and methods such as Six Thinking Hats, Synthesis, Mind Mapping, and Brainstorming in order to improve their analytical and practical skills as well as solving problems.		

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Major Requirement (Compulsory)

201113	Principles of Architectural Design	(3: 1 – 2)
Prerequisite:	202103	
The principles of three-dimensional designs of masses and architectural spaces in which the human factor is incorporated through short projects and exercises that deepen the understanding of the foundations, principles and elements of design and deal with the interior spatial design and support its application starting with the analysis of the architectural site and case studies.		
201152	Workshops	(3: 0 – 1)
Prerequisite:	---	
To identify the properties and methods of forming materials and raw materials in the field of carpentry and blacksmithing and to make use of them in the design and construction of buildings through the design and implementation of simple projects.		
201171	Architectural Drawing 2-D	(3: 1 – 2)
Prerequisite:	---	
The application of architectural drawings and projections using the drawing tools through a series of exercises to develop the student's ability to imagine the elements of the architectural masses of points, lines, surfaces and spaces and relations between them, and learn how to draw plans, architectural sections, elevations, and stairs with all its details, and imagine and draw paraline drawings.		
201173	Photography for Architects	(1: 0 – 1)
Prerequisite:	---	
Introduction to the basics of photography, the use of cameras, different lenses, film types, and principles of image formation and its applications in the production of the image as a whole and in part in the urban structure.		
201175	Architectural Drawing 3-D	(3: 2 – 1)
Prerequisite:	201171	
Draw the shades and shadows of architectural masses in different configurations and methods of drawing the external and internal geometric perspective of the two types of one point and two points to express the three-dimensional design as seen by the naked eye through a group of exercises.		
201211	Architectural Design (1)	(4: 1 – 3)
Prerequisite:	201113 & 201175	
Methods of designing buildings and architectural spaces with a slight degree of functional complexity at the horizontal level (low rise) with local techniques for bearing walls and limited size spaces based on the foundations and analysis of the local environment and the required function through design exercises with a built up area ranging from 100 to 500 square meters.		
201212	Architectural Design (2)	(4: 1 – 3)
Prerequisite:	201211	
Methods of designing multi-function buildings with small and medium size spaces. The design combines multiple functions, size, and construction techniques in a low rise manner. Emphasis on the importance of integrating the design idea, taking into account utilitarian, structural and aesthetic functions based on the fundamentals of natural environment analysis, site and multiple functions required. Exercises of a built up areas of 500-1000 square meters.		
201235	Modern & Contemporary Architecture	(3: 3 – 0)
Prerequisite:	201134	
The study and analysis of the theories of modern and contemporary architecture and architectural schools that resulted from the industrial revolution in Europe to the present day with the inclusion of factors affecting the environment and culture through a full review of the change of philosophical thought and its implications in the arts and then clearly in architecture and study selected models of all stages of change in thought and its implications in architecture until now.		
201256	Building Construction	(3: 2 – 1)
Prerequisite:	201171	
This course introduces students to traditional construction methods with special focus on building materials and their particular characteristics. In this regard, the course addressed the linear process of construction including excavation, break ground, walls, roof, windows, stairs, weather insulation and water proofing. This is in addition to the finishing process which includes plastering, tiling painting, wood and metal work, and plumbing.		

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201257	Building Construction & Construction Systems	(2: 1 – 1)
Prerequisite:	201256	
<p>This course provides students with knowledge of structural analysis and design for buildings including choice of materials & details. The course relies on practical explanations (structure systems) and examples in order to equip the designer with the skill to choose the most optimum solutions in the process of architectural design based on a number of factors like distances, functional spaces, and expressionism of structure and building materials.</p>		
201273	Computer Aided Architectural Design (1)	(2: 0 – 2)
Prerequisite:	201171	
<p>2D and 3D Design and architectural drawing using computer software (AutoCAD) or equivalent through selected exercises and simple architectural designs and ways to show the digital architectural output using “Photoshop” or equivalent.</p>		
201275	Computer Aided Architectural Design (2)	(3: 1 – 2)
Prerequisite:	201273	
<p>Design and architectural drawings using Revit Architecture through advanced exercises to express two-dimensional and three-dimensional architectural designs and for rapid assistance in developing, modifying and presenting them with simulation and BIM calculations.</p>		
201313	Architectural Design (3)	(4: 1 – 3)
Prerequisite:	201212 & 201275	
<p>Methods of architectural design with its structural systems and finding solutions within economic and technological determinants. With the continuity of interest in the visual and functional aspects, through architectural designs for multi-use and multi-storey projects in which the structural system and the design of the vertical transition of the buildings are implemented on the ground, taking into account the economic and social factors and the climatic and urban environment. The structural system is explained through design exercises of built up areas ranging from 1000-3000 square meters.</p>		
201314	Architectural Design (4)	(4: 1 – 3)
Prerequisite:	201313	
<p>Methods of architectural design with specialized functions (educational, commercial, recreational, health or similar) by increasing the scale and complexity of size and function with attention to the technical aspects and structural systems and interior environment control systems through design exercises with a built up area ranging between 3000 - 6000 square meters.</p>		
201318	Interior Spatial Design	(2: 1 – 1)
Prerequisite:	201275	
<p>An introduction to the basic principles and approaches adopted in interior design tasks. It focuses on the main components of the internal spaces and on the potentials of their original architectural three-dimensional compositions. It looks at examples of the most prominent interior design spaces, particularly those which adopt thematic approaches and which unite the characteristics of the spatial form, its components, materials, lighting and furnishing into one comprehensive whole. Within such comprehension, it applies the studied conceptual and theoretical logics into selected, short, and clearly identified interior design tasks.</p>		
201319	Architectural Working Drawings	(3: 1 – 2)
Prerequisite:	201257	
<p>Preparing shop drawings and working details of selected architectural projects by applying the information gained from the study of building construction courses and supporting engineering systems.</p>		
201336	Environment and Behavior	(2: 2 – 0)
Prerequisite:	201212	
<p>The study of human behavior and environmental psychology, focusing on the processes of perception and understanding of meaning and sense of aesthetics, as well as spatial behavior based on the concepts of privacy and territoriality in order to achieve the goals and satisfaction of the users and bring about positive change psychologically and socially for individuals and groups with selected applications.</p>		
201364	Housing	(3: 3 – 0)
Prerequisite:	201212	
<p>The concept of dwelling and housing, the study of terminology related to housing science and demography, housing standards, the development of design theories and global housing planning of all kinds, focusing on the environmental, social, economic, cultural and technological factors and strategies for programming housing projects.</p>		
201372	Computer Aided Architectural Design (3)	(3: 1 – 2)
Prerequisite:	201212 & 201273	
<p>Designing 3D masses and spaces using (3D Max or equivalent) computer software to produce architectural designs and express them as seen by the viewer from different angles showing their details, components, and environment.</p>		

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201382	Environmental Design for Architecture	(3: 2 – 1)
Prerequisite:	201212 & 201243	
<p>The study of concepts and principles of sustainability and green architecture, renewable and alternative sources of energy (sun, wind, gas) and sustainable development process, ways to take advantage of natural treatments of climatic factors in buildings, relationship of architecture to ecosystems and built environment, artificial environmental control systems.</p>		
201390	Professional Internship	(6: 0 – 6)
Prerequisite:	After the completion of 90 credit hours	
<p>Realistic involvement in the profession within specialized institutions or engineering offices or companies approved by the department for three full time consecutive months after the student has passed at least 90 credit hours under the supervision and follow-up of the department.</p>		
201415	Architectural Design (5)	(4: 1 – 3)
Prerequisite:	201314	
<p>Dealing with the architectural problem in a more comprehensive sense to connect it with the elements of the urban environment, while continuing to focus on the visual, functional, social and philosophical aspects based on contemporary international trends and movements and focusing on the integration of architectural design with the environment and urban fabric through selected design projects.</p>		
201416	Architectural Design (6)	(4: 1 – 3)
Prerequisite:	201415 & 201461	
<p>Link architectural designs with the areas of thought and architectural philosophy and its role in the composition of the student's design personality through the preparation of architectural designs with cultural and social dimensions whether of heritage or contemporary, with intellectual and philosophical readings in architecture and its relationship to the spaces that make up the structure and style of the city with methods of analysis of components of the place. The projects have two folds; Planning and design, in which the master plan is designed then implemented to the language of architecture, at the part level, through selected design projects.</p>		
201421	Building Legislation and Professional Practice	(3: 3 – 0)
Prerequisite:	201313	
<p>Building design legislations and construction permit, regulations and laws of professional practice in the Hashemite Kingdom of Jordan, including the relationship between the designer, the employer, and contractors.</p>		
201426	Quantities, Specifications and Contracts	(2: 2 – 0)
Prerequisite:	201319	
<p>Study, analysis and preparation of contracts for engineering and architectural projects, writing specifications of various work items and preparation of bills of quantities, taking into account the characteristics of materials used, construction techniques, methods of measurement, legal and administrative aspects, calculations of cost estimate and data, study of sources of contracts and international and local specifications, calculation of quantities of an engineering project and their output in integrated documents with this project.</p>		
201427	Construction Project Management	(3: 3 – 0)
Prerequisite:	201426	
<p>General overview of construction economics, principles of office and field-work programming for various architectural projects, traditional linear planning methodology, various types of network analysis, critical path in project monitoring and follow-up, identification of critical points and control points, time and cost calculation, financial resource reconciliation, personnel management and business systems.</p>		
201431	Analysis & Criticism in Architecture	(3: 3 – 0)
Prerequisite:	201235 & 201336	
<p>The study of the philosophy of architecture and the concept of criticism and scientific and philosophical analysis of outstanding architectural works, study the various approaches of various schools of criticism and their application to global examples that have had an impact on the transformation of thought and architectural design.</p>		
201461	Landscape Planning & Design	(3: 2 – 1)
Prerequisite:	201212 & 201347	
<p>Studying the foundations, principles and elements of design and formation used in the landscape design and the impact of the environment on all its various components on the design of ecological architectural sites with a full study of the historical development of the concept of the landscape and vegetation and its development in different civilizations and different styles with concentration on irrigation systems and construction requirements and details to complete the vocabulary and elements of the landscape design and its formation and its relationship to buildings and urban spaces through real life projects.</p>		

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201481 Sustainable Architecture and Energy (3: 2 – 1)

Prerequisite: 201382

Practical applications of the concepts of green, sustainable and renewable energy architecture through the study and preparation of architectural and detailed designs of design projects with the use of specialized simulation software and provide the required tables that reflect measurement of the application.

201562 Urban Planning & Design (4: 1 – 3)

Prerequisite: 201416

In depth study of the city structure and the development of theories of urban planning and design, the emergence and development of the city with focus on city shape and urban space, the meaning of place, principles and terminology of heritage and urban conservation. Theories of conservation and their development over time, strategies and levels of intervention in urban heritage areas or rural buildings with local, regional and international examples.

201594 Graduation Project (1) (1: 0 – 1)

Prerequisite: 201416 & 202213 & After the completion of 120 credit hours

Preparation of a selected architectural project with objectives, needs, methodologies, contents and comparative case studies, with the introduction of principles, strategies and design alternatives to arrive at a preliminary concept of the proposed design of the project in a detailed report including an analytical study of the information and results that will be used to program the graduation project and reach conclusions and recommendations for the design ideas of the graduation project.

201595 Graduation Project (2) (4: 0 – 4)

Prerequisite: 201390 & 201594

To develop ideas and choose the suitable alternative for the architectural project that was studied in the “research project for architecture” course, with a minimum built up area of 4,000 square meters of a real site, starting from the stages of idea creation, converting it into integrated architectural and detailed plans and what tools it takes to present it clearly, accurately and comprehensively.

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Major Requirements (Elective)

201272	Architectural Rendering	(3: 2 – 1)
Prerequisite:	201175 & 201273	
The means of presentation and the different methods of post-production of drawings and architectural schemes using ink, colors and pencil as well as practicing model making in order to highlight the design and make it realistic. Digital architectural presentation applications and photo montage using Adobe Photoshop software package to produce posters and architectural drawings.		
201428	Professional Skills in Architecture	(3: 3 – 0)
Prerequisite:	201421	
The course aims to provide the student with the necessary skills for the labor market to start his/her career, through a series of lectures and short exercises. In addition to providing him/her with knowledge of the nature of the architect's work and possible job opportunities in the public and private sectors, CV writing skills, designing portfolio, written and oral communication skills, job interviews, and training in mastering the art of effective communication with clients and colleagues.		
201471	Advanced Computer Applications	(3: 2 – 1)
Prerequisite:	201275	
Design using specialized computer software packages such as Grasshopper and Rhino to produce organic and parametric designs.		
201532	Special Topics in Architecture	(3: 2 – 1)
Prerequisite:	201212	
The study of topics of particular interest and significance to the discipline of architecture chosen by the department according to developments and need.		
201552	Innovation in Construction Techniques	(3: 2 – 1)
Prerequisite:	201257	
The methods and concepts of manufacturing in buildings and studying their technical and applied details, building models manufactured for the whole building or its construction parts and employing them in large-scale construction projects (high-rise buildings or specialized functional units).		
201563	Geographic Information Systems / Architecture	(3: 2 – 1)
Prerequisite:	201273 & 201347	
GIS principles and software and their applications in architectural design, urban design, planning and preservation of built heritage.		
201565	Urban Planning	(3: 2 – 1)
Prerequisite:	201313	
An in-depth study of the urban structure and the development of theories of planning and urban design and the evolution and development of the city, with emphasis on the shape of the city and the urban space and the meaning of the place and then move to the foundations of preservation and terminology related to heritage and urban conservation with the presentation of theories of conservation and development over time with strategies and levels of intervention in urban heritage areas or rural or buildings of heritage, with local, regional and global examples.		

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Supporting Requirement (Compulsory)

103101	Calculus (1)	(3: 3 – 0)
Prerequisite:	---	
Functions of one variable. Limits and continuity. Differentiation and its applications. The Mean Value Theorem and its applications. Definite integral and the Fundamental Theorem of Calculus. Exponential functions, their derivatives and integrals. Logarithmic functions and their derivatives.		
104101	General Physics (1)	(3: 3 – 0)
Prerequisite:	---	
Vectors, Kinematics of point particles, Dynamics of Point Particles (Newton's Laws). Statics; Torque. Circular Motion Work, Energy and Power. Linear Momentum. Elastic Properties of Matter. Stress and Strain. Vibrational Motion; Simple Harmonic Motion.		
201243	Lighting and Acoustics for Architecture	(2: 1 – 1)
Prerequisite:	103101 & 104101	
Calculations and natural and artificial lighting levels, required lighting levels in different architectural spaces and types of light sources, the basis of sound propagation in interior spaces, resonance, reverberation time, the relationship of form with sound propagation, acoustic insulation, noise levels and various acoustic treatments related to the shape of walls and interior ceilings and sound reflecting cladding materials.		
201340	Structures	(3: 3 – 0)
Prerequisite:	103101 & 104101	
Statics: Equilibrium of particles and conditions for the equilibrium, the free body diagram, moment of a force. Equilibrium of rigid bodies; types of supports and reactions, simple trusses (methods of joints and sections). Internal forces (axial, shear and moment equations and diagrams). Brief of centre of gravity, centroids and moment of inertia. Brief description of stress and strain formulation. Reinforced Concrete and steel structures: Brief description for reinforced concrete ingredients and the behaviour of the RC structures, analysis and design of rectangular beams, analysis and design of one way solid slabs, brief for analysis and design of shear in reinforced concrete beams, analysis and design of concrete columns. For Steel Design: Introduction for steel structures and sections. Analysis and design of tension and compression steel members.		
201347	Surveying	(2: 1 – 1)
Prerequisite:	103101 & 201171	
Introduction to surveying principles and techniques: measuring distances & heights, triangulation, taping errors & corrections, differential & cross sectional leveling, compass use, computing angles, construction and topographic maps.		
201359	Mechanical and Sanitary Systems for Architecture	(2: 1 – 1)
Prerequisite:	201257	
Design principles of mechanical, sanitary and environmental technology and the impact of different environmental and climatic factors on buildings, design and analysis of technical services systems such as heating, ventilation, air conditioning, and plumbing.		

Note: (Credit Hours: Lectures – Lab)