

Course Descriptions

Bachelor Program in Architecture

٢٠١٧/٢٠١٦

1. Faculty Requirements

A. Compulsory Faculty Requirements (18) Credit Hours

Course No.	Course	Cr. Hrs	Theory	Practice	Pre-requisite	Pre-requisite No.
110101111	Design Basics (1)	3	1	2	--	--
	Fundamentals of artistic compositions: design elements and principles, color theory; applications: abstract, representational, and functional two- and three-dimensional exercises.					
110101112	Design Basics (2)	3	1	2	Design Basics (1)	110101111
	Designing for man: elaborate study of anthropometrics and ergonomics, human scale, the mutual man-environment relationship; the concept of 'space' and its design and perception through the mass-space relationship; applications: various exercises that combine the basics of architectural, interior, and graphic design.					
110101244	History of Islamic Art & Architecture	3	3	0		
	The development of architecture under Islamic rule: a brief review of the pre-Islamic era, the major developments in the age of the Rightly Guided Caliphs; an analytical review of the major architectural developments and achievements under the rules of the: Umayyids, Abbasids, Muslims in Andalusia, Fatimids, Ayyubids, Mamluks, Timurids, Safavids, Moguls, and Ottomans; The major architectural achievements of each age: the relationship between them, major examples of each.					
110201141	Freehand Drawing	3	1	2	--	--
	Training the student to accurately perceive, observe, and represent by using his free hand; developing the student's hand as a means of expression and a tool for confidently drawing various, lines, shapes, and textures using various media in various settings in the studio or around the campus.					

كلية العمارة والتصميم
قسم هندسة العمارة

110101143	Aesthetics	3	3	0	--	--
	This course offers an overview of the history of aesthetics including the writing of the most prominent philosophers and writers and discusses the relationship between aesthetics and other related fields and concepts. It also introduces the interpretation of beauty and its criteria in design, some of the fine arts, performing arts, and literature.					
110101110	Research Methodology in Architecture & Design	3	3	0	--	--
	Introduction to the concept of research in general: the special nature of research for architectural purposes whether prior to design projects or that oriented towards report writing and preparing for seminars; getting acquainted with the major kinds of research and their methodologies as regards data collection, analysis, interpretation, evaluation, and making recommendations; getting acquainted with methods and techniques for presenting the research and its results using various means and media.					

B. Elective Faculty Requirements (6) Credit Hours

Course No.	Course	Cr. Hrs	Theory	Practice	Pre-requisite	Pre-requisite No.
110201142	Freehand Drawing (2)	3	1	2	Freehand Drawing (1)	110201142
	Training the student in the use of advanced techniques in painting with various colorful media: colored pencils, water colors, oil colors, etc.					
110201222	Photography	3	3	0	--	--
	Introduction to the camera: kinds of cameras and their lenses, in-depth study of the practical and psychological aspects of photography, photographic architectural compositions and photo-capturing techniques, involving theory and practical exercises.					
110201221	Ceramics	3	1	2	--	--
	Introduction to local clays and various shaping techniques, training in the production of various works (murals, vases, tec.), with a visit to a local ceramic factory or workshop.					
110201121	Visual Communication Skills	3	3	0	--	--

	The concept of communication and its components, the basic skills required for communication, perception, visual perception, visual symbols, optical illusions, Semiotics, Gestalt Theory, visual design, and other concepts.					
110101401	Programming for Architecture & Design	3	0	3	Computer-Aided Design (2)	110101234
	Systematic computer programming starting with formal and functional programs and ending up with the detailed overall program, including decision-making, matrices, file-processing and subroutines, and program design in detail, with practical exercises and applications.					
110201211	Creative Thinking	3	3	0	--	--
	A study of concepts related to creativity in art and design, focusing on the main intellectual bases of artistic styles and trends in design through an understanding of the processes of creative thinking.					

2. Department Requirements (117) Credit Hours

A. Compulsory Department Requirements (100) Credit Hours

Course No.	Course	Cr. Hrs	Theory	Practice	Pre-requisite	Pre-requisite No.
110101231	Architectural Design (1)	4	1	3	Design Basics (2)	110101112
	The transition from basics to architectural design: design of simple actual structures with limited functional requirements yet with varied areas and usages on more than one level on hypothetical or actual sites; emphasis on the form-function and outside-inside relationships; Practical applications within a simple design methodology that guides the student throughout the design process.					
110101232	Architectural Design (2)	4	4	1	Architectural Design (1)	110101231
	Designing more complex buildings than in the previous course with more sophisticated programs and requirements, and more emphasis on visual and functional aspects, and the structural, economic, social, and environmental factors influencing the design.					
110101331	Architectural Design (3)	4	1	3	Architectural Design (2)	110101232
	The design of buildings with typical and repetitive spaces over more than one floor within specific building types; fitting together the various (formal, functional, structural, environmental, etc.) systems that comprise the building.					

كلية العمارة والتصميم
قسم هندسة العمارة

110101332	Architectural Design (4)	4	1	3	Architectural Design (3)	110101331
	As in its predecessor but with more sophisticated design problems that combine typical spaces and various other spaces with a variety of volumes and masses, with special emphasis on large spaces and their various requirements.					
110101431	Architectural Design (5)	4	1	3	Architectural Design (4)	110101332
	The design of more sophisticated and complex buildings: mainly multipurpose or multifunctional public or commercial buildings which call for systemic design with an overall planning grid to insure compatibility between the various systems of the building; a hierarchical design approach starting with an overall design and ending up with the details.					
110101432	Architectural Design (6)	4	1	3	Architectural Design (5)	110101431
	Continuation of its predecessor with more complexity and on a larger scale as it deals with large-scale structures with systemic design over two stages: first the overall planning and design as a teamwork, then the detailed design of selected parts as individual work.					
110101531	Graduation Project (1)	2	2	0	Architectural Design (6)	110101432
	Preparing for the graduation project by conducting the research necessary for designing: a building program for a real project on a real site within the city, following a clear and comprehensive methodology that leads the student through the process of defining the design problem and planning the course of resolving it, collecting the necessary data, the proposal of a number of conceptual design alternatives; the presentation of the research in a final report.					
110101532	Graduation Project (2)	5	1	4	Graduation Project (1)	110101531
	Designing the project for which the student had done his research in the previous course: deciding upon the best design concept proposed, developing it into a design proposal that reflects his/her own character and architectural identity, combining together the various building systems into one integrated whole; presenting the comprehensive design proposal in the form of architectural drawings and one or more architectural models.					
110101131	Architectural Drawing	3	1	2	--	--
	Various kinds of architectural drawing and drafting: the terms, symbols, conventions, techniques, and projections used in such drawings, applications: exercises in drawing and drafting for architectural, interior, and graphic designs.					

كلية العمارة والتصميم
قسم هندسة العمارة

110101113	History and Theory of Architecture (1)	3	3	0	--	--
	Introduction to the concept of history; analytical review of the development of art and architecture in the Ancient World: the Stone Age, Mesopotamia and the Nile Valley, then the development of art and architecture in the Classical World: The Greek civilization, the Roman civilization, the major artistic and architectural achievements of each age and the relationship between them, major examples of each.					
110101114	History and Theory of Architecture (2)	3	3	0	History and Theory of Architecture (1)	110101113
	Analytical review of the development of art architecture in: Early Christianity and the Middle Ages (Byzantine, Romanesque, and Gothic Ages), the Renaissance, Mannerism, Baroque, Rococo, Rationalism, and some of the movements until mid-19th century; the major artistic and architectural achievements of each age and the relationship between them, major examples of each.					
110101311	Modern and Contemporary Architecture	3	3	0	History and Theory of Architecture (2)	110101114
	Analytical review of the development of architecture since mid-nineteenth century and the roots of Modernism; the major movements of twentieth century and the twenty-first century up till the present; major examples of each, with a discussion of the relationship between architecture and the other arts of the time.					
110101312	Vernacular and Regional Architecture	3	3	0	History of Islamic Art & Architecture	110101244
	The main characteristics of vernacular and regional architecture, the use of local materials and building skills, discussion of major local examples, the use of the various local resources for the production of an intrinsically local architectural work.					
110101313	Urban Design	3	3	0	Architectural Design (3)	110101331
	An introduction to the concept of urbanism, its objectives, principles, elements, and strategies focusing on the major theories, methodologies and trends related to the built environment, with Arab and world international examples.					
110101415	Urban Planning	3	3	0	Urban Design	110101313
	An introduction to the concept of urban planning; the emergence and development of cities, and their morphological evolution; the elements of urban systems within the built urban context of the city; land					

كلية العمارة والتصميم
قسم هندسة العمارة

	use and its relationship to the components of a city, with regional and international examples.					
110101314	Landscape Architecture	3	1	2	Architectural Design	110101232
	The history of landscaping, the principles of landscape design at macro urban and micro architectural scales, outdoors and indoors, and a review of hard and soft landscape elements, street furniture and accessories, with practical exercises.					
110101411	Housing	3	3	0	Architectural Design (4)	110101332
	The concept of housing and its development locally and internationally: the planning and organization of residential neighborhoods and their main constituents, community services in residential areas, the effect of the residential environment on social relationships, types of residential buildings and the main characteristics of each, and squatters' settlements.					
110101233	Computer-Aided Design (1)	2	0	2	--	--
	The use of computers in producing simple 2D and 3D architectural drawings: basic architectural design drawings, working drawings, furniture and accessories using AutoCAD.					
110101234	Computer-Aided Design (2)	2	0	2	Computer-Aided Design (1)	11010233
	The use of certain computer programs (esp. 3D Max, ArchiCAD) in architectural drawing and rendering; applications in various exercises.					
09020371	Contracts, Specifications & Quantity Surveying	3	3	0	Building Construction (2)	110101212
	Introduction to Engineering Contracts, their specifications, applications, and the role Jordan Engineers' Association in their formulation; Introduction to the methods of quantity surveying and calculating using two-dimensional architectural drawings.					
110101315	Lighting and Acoustics	3	2	1	Physics (1) + Physics Lab	010601103 + 010601105
	Lighting: the nature of light, its physical properties and their units of measurement, the psychological aspects of light, types of lighting and its sources, lighting design; Acoustics: the nature of sound, its physical properties and their units of measurement, the psychological aspects of sound and their effects on man, architectural acoustics, typical acoustic problems and their design solutions.					

كلية العمارة والتصميم
قسم هندسة العمارة

090401431	Mechanical and Electrical Systems	3	3	0	Environmental Control	09040317
	Sanitary installations water sources; specifications of potable water and water for other purposes; types of water provision and drainage systems and their respective methods of calculation; sanitary installations; preparing and reading sanitary services drawings. HVAC: preliminary design of heating, ventilating, and air-conditioning systems in buildings throughout the year; their major systems; the basics of their design and their methods of calculation; Fire protection and resistance systems.					
110101211	Building Construction (1)	3	3	0	--	--
	Introduction to building construction systems, building materials, and the relationship between building construction systems and the other systems comprising the building.					
110101212	Building Construction (2)	3	2	1	Building Construction (1)	110101211
	Deals with building construction details: the foundations, walls, floors, roof, doors & windows, stairs, insulation, etc.; the design and presentation of these details in large scale working drawings.					
110101421	Building Legislation and Professional Practice	3	3	0	--	--
	Introduction to the nature of the architectural profession and its practice, including the laws and rules regulating the practice of architecture; the range of jobs open to graduates of architectural schools; the nature of architectural firms and how to set up a practice.					
110101235	Architectural Presentation	3	1	2	Architectural Drawing + Freehand Drawing (1)	110101131 + 110201141
	Teaches the various skills and techniques used to present architectural projects as drawings and three-dimensional models using various media; the projection of shades and shadows; the projection of one-point and two-point perspectives.					
09040317	Environmental Control	3	3	0		
	Analytical Review of the main weather elements affecting the life of man and his comfort; the mutual relationship between architecture and its environment, , the responsibility of the architect towards the environment during and after design; the international laws relevant to the protection of the environment and natural resources; the effects of natural lighting and ventilation, winds, and sunrays					

كلية العمارة والتصميم
قسم هندسة العمارة

	on buildings.					
090401318	Structural Systems	3	3	0	Building Construction (2)	110101212
	Introduction to advanced structural systems used in architecture like shells, vaults, trusses, space frames, etc. and how they have been used in recent architecture; advances in curtain wall technology, the logic of the various structural systems and their impact on architectural language, aesthetics and the formulation of habitable space.					
090401203	Engineering Workshop (1)	1	0	1	--	--
	The basics of public safety in workshops; basic tools and their uses; development of basic skills in carpentry, welding and other operations.					
09040204	Engineering Workshop (2)	1	0	1	Engineering Workshop (1)	090401203
	The production of certain objects employing the skills acquired in the previous course.					
110101213	Engineering Mechanics	3	3	0	--	--
	The study of the statics of solid objects, determinate structural systems, structural analysis: frames, trusses, friction, moment of inertia, etc. and the use of computers in solving static problems; the mechanical properties of materials, stresses in elements subject to forces of tension, compression, shear, and torque and other subjects.					
110101433	Working Drawings	2	1	3	Building Construction (2)	110101212
	The introduction of exercises in the production of complete architectural and other engineering working drawings for whole buildings, involving the system of writing dimensions, measurements, levels, and the specifications, doors and window charts and tables, finishings, etc. at various scales.					
090201321	Structural Analysis (1)	3	3	0	Engineering Mechanics	110101213
	The study structural analysis, kinds of loads, classification of structural analysis, statically determinate structures, stress lines, etc.					

B. Elective Department Requirements (6) Credit Hours

كلية العمارة والتصميم
قسم هندسة العمارة

Course No.	Course	Cr. Hrs	Theory	Practice	Pre-requisite	Pre-requisite No.
110101511	Human Behavior in the Built Environment	3	3	0	--	--
	Discussion of the psychological and social theories about the relationship between human behavior and the built environment, and its impact on the architectural design.					
090401474	Project Management	3	3	0	--	--
	Introduction of the systems of building management, Critical Path Method (CPM), Program Revision and Evaluation Technique (PERT), resource distribution, cost and time trade-offs, building site organization and management, tenders and contracts.					
110101533	Theory of Architectural Design	3	3	0	History and Theory of Architecture (2)	110101114
	The theoretical and intellectual side of architecture and architectural design as a combination of various disciplines: the concepts of "theory", "architecture", "art", and "design" and their respective definitions; the role of theory in architectural design and its relationship to the history and criticism of architecture (HTC); The relationship between architectural theory and the humanities: the kinds of architectural theories, design methods and methodologies, the stages of design and their respective requirements and presentations.					
110101513	Green Buildings and Sustainable Design	3	3	0	--	--
	Introduction to the concept of sustainability and its objectives; the creation of green architectural structures and spaces that offer better and healthier habitable contexts for all living creatures in general.					
110101412	Design of concrete and steel structures	3	3	0	Structural Analysis (1)	090201321
	The detailed design of concrete and steel structures and the calculations required.					
110101512	Architectural Conservation and Restoration	3	3	0	History of Islamic Art and Architecture	110101312
	Introduction to the field of architectural conservation and restoration: the main principles, theories, and rules of the conservation of architectural heritage; the main methods of maintenance, restoration, rehabilitation, and reuse of buildings; a review of the major Arab and international achievements.					

C. Supportive Department Requirements (11) Credit Requirements

Course No.	Course	Cr. Hrs	Theory	Practice	Pre-requisite	Pre-requisite No.
0106101	Mathematics (1)	3	3	0	--	--
	Introduction of derivatives and their applications, compound numbers, analytical geometry, methods of integration, infinite series, three-dimensional vectors, linear formulas, volumetric geometry, compound series, complex integrals.					
0106103	Physics (1)	3	3	0	Mathematics (1)	0106101
	Introduction to measurements, vectors, linear motion, planar motion, laws of motion, rotary motion, Newton's laws and their applications, work and energy, laws of gravity, linear momentum, impacts, and other subjects.					
0106105	Physics (1) / Lab	1	0	1	Physics (1)	0106103
	Measurements and errors, vectors, linear motion, projectiles, Newton's second law, friction, impacts, rotary motion, simple harmonic motion.					
09020231	Surveying	3	3	0	Mathematics (1)	0106101
	Introduction to the concept of surveying and its basics, units of measurements, drawing scales, linear measurements, leveling, the theodolite and angle measurements, contour lines, areas of polygons and regulation grids, areas and volumes, excavations and demolitions, longitudinal sections and cross sections, triangulation.					
09020233	Surveying / Lab	1	0	1	Surveying	09020231
	Measurements and linear distances, leveling, horizontal and vertical angles, contour lines, topographical area, areas of polygons, horizontal curves.					
110101530	Field Practice	0	0	0	Passing 135 Cr. Hrs	
	Acquiring the Bachelor degree in Architecture here requires field training in architectural design or site supervision in a relevant governmental institution or prominent architectural firm that has been approved by the Department and the Faculty Field Training Committees. Required duration of training is (8) uninterrupted weeks inside of Jordan, after successfully passing (135) credit hours.					