جامعة عمان العربية
AMMAN ARAB UNIVERSITY

Faculty of Engineering

Department of Architectural Engineering

B.A Study Plan

Major In: Architectural Engineering

Academic Year

2021-2022

Study Plan Credit hours(169) Type of Program: **Blended/ Online**

Major Type: ☐Humanities Scientific/Technical ☐Science Medical

Teaching Type	Percentage of study plan hours/number	Actual Ratio
Complete Online E-Learning	20% - 10% Maximum	%16
Blended learning (for humanities)	60% - 40% Maximum	–
Blended learning (for scientific majors)	50% - 30% Maximum	%45
Face-to-face learning (for humanities)	20% Minimum	–
Face-to-face learning (for scientific majors)	30% Minimum	%39

Note: The learning types of the courses are disseminated at all academic levels in the program

Department Vision

Entrepreneurship and distinction in engineering fields, scientific research and community service.

Department Mission

Preparing creative and competitive engineers able to enhance sustainability and entrepreneurship.

Program Mission

Providing an outstanding academic learning and innovative scientific research that serves the community, enhances knowledge, achieves quality and contributes to comprehensive development.

Educational Program Objectives

1. Graduating qualified architects with advanced skills and necessary experience, able to meet the requirements of the architecture and construction market.
2. Developing students' competencies in creativity, discussion skills, critical and creative thinking.
3. Appreciating the architectural heritage and taking into account the cultural, social and environmental factors in the stages of the architectural design process and architectural education.
4. Recognizing the priority of green architecture and sustainable building.
5. Activation of the scientific research and participation in sustainable development efforts.
6. Recognizing the cooperation with companies and architectural and consulting offices, and strengthening the link with the departments and colleges of architecture in local, Arab and international universities.

Educational Program Outcomes

1. Clarifying the basic principles of design and take advantage of design solutions for existing architectural projects.
2. Understanding contemporary architectural steps in formulating theoretical trends in design.
3. Applying constructing sciences and engineering systems in the design process.
4. Critical analysis and mastering scientific and architectural thinking skills.
5. Evaluating basic ideas to identify information, conclude justified results, and test alternative outcomes according to specific engineering criteria.
6. Architectural design through the effective use of the basic principles and technology of design through professional and ethical responsibility.

Plan Contents

The study plan for a bachelor's degree consists of a major Architectural Engineering Of (169) credit hours disseminated as follows:

Sequence	Classification	Credit Hours	Percent %
1st	University Requirements	27	15.98
2nd	College Requirements	26	15.38
3rd	Program Requirements	116	68.64
Total		**169**	**100%**

Coding System Approved by the University

6	**0**	**3**	X	year	semester	X
College Code	Major Code		Knowledge domain	Course Level		Sequence

Knowledge Domain

Domain Code	Knowledge Domain	Credited Hours of Study Plan
1	**History of Architecture**	9
2	**Theories of Architecture**	6
3	**Building Construction and technology**	8
4	**Urban sciences**	10
5	**Theories of Sustainable Design and Green Architecture**	6
6	**Digital architecture technology**	7
7	**Project management and Field practice**	8
8	**Architectural Design(Graduation Project(1)+ Graduation Project(2))**	41
9	**Architectural Presentation**	8

First: **University Requirements:** (27) Credit Hours

A. **Compulsory Requirements:** (18)Credit Hours

Teaching type			Course Number	Course Title	Credited Hours	Pre-Requisite
Online E-Learning	Blended	Face-to-Face				
	√		50511105	Communication skills- Arabic Language (1)	3	50511108
	√		50511108	Communication skills -English Language (1)	3	50511109
	√		50511109	Arabic Language Pre-requisite	0	-
	√		50511110	English Language Pre-requisite	0	-
	√		50511205	Computer Basics Pre-requisite	0	-
	√		50511206	Life Skills and social responsibility	3	-
	√		50511305	National Education	3	-
			Total		18	

B. **Elective Requirements**: (9)Credit Hours **from the following list:**

Teaching type			Course Number	Course Title	Credited Hours	Pre-Requisite
Online E-Learning	Blended	Face-to-Face				
	√		50521106	Communication skills -Arabic Language (2)	3	50511104
	√		50521107	Communication skills -English Language (2)	3	50511105
	√		50521203	Principles of Psychology	3	-
	√		50521204	Human Rights	3	-
	√		50531101	Islamic Culture	3	-
	√		50531205	Jerusalem and The Hashemite Guardianship	3	
	√		50541103	Computer Skills	3	50511110
			Total		9	

Second: College Requirements: (26) Credit Hours

A. Compulsory Requirements: (26) Credit Hours

Teaching type			Course Number	Course Title	Credited Hours	Pre-Requisite
Online E-Learning	Blended	Face-to-Face				
	√		50211104	Calculus (1)	3	-
	√		50211202	Calculus (2)	3	50211104
	√		50551101	General Physics (1)	3	-
		√	50551102	General Physics Lab (1)	1	50551101*
		√	60221101	Engineering Drawing	2	-
	√		60222102	Introduction to Engineering	1	-
	√		60224203	Engineering Economy	3	50211104
	√		60331204	Engineering Workshop	1	-
		√	60363203	Programming for Engineers	3	50511110
	√		60372201	Communication Skills and Profession Ethics	3	50511105
	√		60375102	Project Management	3	60224203
			Total		**26**	

Third: Program Requirements (116) Credit Hours

A. Compulsory Requirements: (102) Credit Hours

Teaching type			Course Number	Course Title	Credited Hours*	Theoretical	Practical	Pre-Requisite
Online E-Learning	Blended	Face-to-Face						
	√		60311201	History of Architecture	3	3	-	-
	√		60312102	Islamic Architecture	3	3	-	60311201
	√		60313103	Modern and Contemporary Architecture	3	3	-	60312102

	√		60322201	Theories of Architecture	3	3	-	60382103
	√		60324103	Architectural Criticism and Analysis	3	3	-	60322201
	√		60331201	Building Construction Materials	2	2	-	-
	√		60333202	Building Construction Finishing	2	1	2	60331201
	√		60334203	Lighting & Acoustics	2	1	2	50551101
	√		60334204	Mechanical and Sanitary Systems	2	2	-	60383105
		√	60343101	Landscape	2	1	2	60382204
		√	60343202	Urban Planning	3	2	2	60383105
	√		60343204	Architectural Conservation, Restoration	2	2	-	
		√	60344104	Urban Design	3	3	-	
	√		60352201	Green and Sustainable Building	3	3	-	
	√		60362202	Computer Applications in Architecture (I)	2	1	3	
	√		60364105	Advanced Computer Skills for Architecture	2	1	3	
	√		60365105	Programming of Architectural Projects	3	3	-	
	√		60374203	Contracts, Specifications and Quantities Calculation	3	3	-	60333202

	√		60375204	Professional Practice and Legislation	2	2	-	60384209
		√	60381101	Basic Design (1)	3	1	4	-
		√	60381202	Basic Design (2)	3	1	4	60381101
		√	60382103	Architectural Design (1)	4	1	6	60381202
		√	60382204	Architectural Design (2)	4	1	6	60382103
		√	60383105	Architectural Design (3)	4	1	6	60382204
		√	60383206	Architectural Design (4)	4	1	6	60383105
		√	60384107	Working Drawings	3	1	4	60333202
		√	60384108	Architectural Design (5)	4	1	6	60383206
		√	60384209	Architectural Design (6)	3	1	4	60384108
	√		60384210	Interior Design	2	1	3	60383105
		√	60385110	Graduation Project (1)	2	1	1	60384209+ 120 pass cr.hr
		√	60385215	Graduation Project (2) *	4	-	8	60385110
		√	60391101	Freehand Drawing	2	1	2	-
		√	60391202	Architectural Drawing and Presentation	3	1	4	60221101
		√	60392103	Perspective, Shade and Shadows	3	1	4	60391202
		√	60384311	Training Field**	6	6	-	pass 115 cr.hr
			Total		**102**	**62**	**84**	

*** Credit Hours**

B. **Elective Requirements:** (**6**) Credit Hours

Teaching type			Course Number	Course Title	Credited Hours*	Theoretical	Practical	Pre-Requisite
Online E-Learning	Blended	Face-to-Face						
	√		60323202	Human Behavior in Built Environment	3	3	-	60382204
	√		60334205	Advanced Building Technology	3	3	-	60333202
	√		60344105	Local Architecture and Conservation of Architectural Heritage	3	3	-	+60383105 60312102
	√		60344106	Housing	3	3	-	60343202
	√		60353102	Environmental Control	3	2	2	+50551101 60382103
	√		60363103	Computer Applications in Architecture (2)	3	1	3	60362202
		√	60392104	Workshops and Model Making	3	-	6	60382103
	√		60393205	Architecture Photography	3	3	-	60383105
	√		60385113	Selected Topics in Architecture	3	3	-	60384108
			Total		**6**			

* **Credit Hours**

C. **Ancillary Courses** (.....) Credit Hours:

Teaching type			Course Number	Course Title	Credited Hours*	Theoretical	Practical	Pre-Requisite
Online E-Learning	Blended	Face-to-Face						
	√		60232101	Surveying	3	3	-	50211104
		√	60232102	Surveying Lab	1	-	2	60232101*
	√		60332206	Engineering Mechanics	2	2	-	50551101
	√		60333107	Building Construction Systems	2	2	-	60332206
			Total		**8**	**7**	**2**	

* **Credit Hours**

Guidance plan

First Year

First Semester					
Course No.	**Course Title**	**Type of Learning**	**Credited Hours***	**Prerequisite**	**Co-requisite**
50211104	Calculus (1)	Blended	3	-	_
50541103	Elective University Requirement / Computer Skills	Online E-learning	3	-	_
50551101	General Physics (1)	Blended	3	-	_
50551102	General Physics Lab (1) *	Face to face	1	-	50551101
60221101	Engineering Drawing	Face to face	2	-	_
60381101	Basic Design (1)	Face to face	3	-	_
60391101	Freehand Drawing	Face to face	2	-	_
Total			**17**		

Second Semester					
Course No.	**Course Title**	**Type of Learning**	**Credited Hours***	**Prerequisite**	**Co-requisite**
50211202	Calculus (2)	Blended	3	50211104	-
60311201	History of Architecture	Blended	3	_	-
60331201	Building Construction Materials	Blended	2	_	-
60381202	Basic Design (2)	Face to face	3	60381101	-
60391202	Architectural Drawing and Presentation	Face to face	3	60221101	-
60331204	Engineering Workshop	Face to face	1	_	-
_	Compulsory University Requirement	Online E-learning	3	_	-
Total			**17**		

* **Credit Hours**

Second Year

First Semester					
Course No.	**Course Title**	**Type of Learning**	**Credited Hours***	**Prerequisite**	**Co-requisite**
60222102	Introduction to Engineering	Blended	1	–	–
60232101	Surveying	Blended	3	50211104	–
60232102	Surveying Lab*	Face to face	1	–	60232101
60312102	Islamic Architecture	Blended	3	60311201	–
60382103	Architectural Design (1)	Face to face	4	60381202	–
60392103	Perspective, Shade and Shadows	Face to face	3	60391202	–
–	Compulsory University Requirement	Online E-learning	3	–	-
Total			**18**		

Second Semester					
Course No.	**Course Title**	**Type of Learning**	**Credited Hours***	**Prerequisite**	**Co-requisite**
60332206	Engineering Mechanics	Blended	2	50551101	-
60313103	Modern and Contemporary Architecture	Blended	3	60312102	-
60352201	Green and Sustainable Building	Blended	3	60382103	-
60362202	Computer Applications in Architecture (1)	Face to face	2	60362203	-
60372201	Communication Skills and Profession Ethics	Blended	3	50511105	-
60382204	Architectural Design (2)	Face to face	4	60382103	-
Total			**17**		

* **Credit Hours**

Third Year

First Semester					
Course No.	**Course Title**	**Type of Learning**	**Credited Hours***	**Prerequisite**	**Co-requisite**
60333107	Building Construction Systems	Blended	2	60242203	-
60322201	Theories of Architecture	Blended	3	60382103	-
60343101	Landscape	Face to face	2	60382204	-
-	Elective department Requirement	Blended	3	-	-
60383105	Architectural Design (3)	Face to face	4	60382204	-
–	Compulsory University Requirement	Online E-learning	3	–	-
Total					

Second Semester					
Course No.	**Course Title**	**Type of Learning**	**Credited Hours***	**Prerequisite**	**Co-requisite**
60333202	Building Construction Finishing	Blended	2	60382204	-
60343202	Urban Planning	Face to face	3	60383105	-
60383206	Architectural Design (4)	Face to face	4	60383105	-
60343204	Architectural Conservation, Restoration	Blended	2	60312102	-
–	Elective department Requirement	-	3	_	-
60363203	Programing For Engineering	Face to face	3	50511205	-
Total			**17**		

* **Credit Hours**

Fourth Year

First Semester					
Course No.	**Course Title**	**Type of Learning**	**Credited Hours***	**Prerequisite**	**Co-requisite**
60344104	Urban Design	Face to face	3	60343202	-
60324103	Architectural Criticism and Analysis	Blended	3	60322201	-
60384107	Working Drawings	Face to face	3	60333202	-
60384108	Architectural Design (5)	Face to face	4	60383206	-
60364105	Advanced computer skills for architecture	Face to face	2	60362202	-
–	Elective department Requirement	Online E-learning	3	–	-
Total			18		

Second Semester					
Course No.	**Course Title**	**Type of Learning**	**Credited Hours***	**Prerequisite**	**Co-requisite**
60224203	Engineering Economy	Blended	3	60351108	-
60334203	Lighting & Acoustics	Blended	2	50551101	-
60334204	Mechanical and Sanitary Systems	Blended	2	60383105	-
60384209	Architectural Design (6)	Face to face	3	60384108	-
60384210	Interior Design	Face to face	3	60383105	-
60374203	Contracts, Specifications and Quantities Calculation	Blended	3	60333202	-
Total			16		

* **Credit Hours**

Summer Semester					
Course No.	Course Title	Type of Learning	Cr. hrs.	Prerequisite	Co-requisite
6038431l	Training Field**	Face to face	6	Pass 115 Cr.Hr	-
Total			**6**		

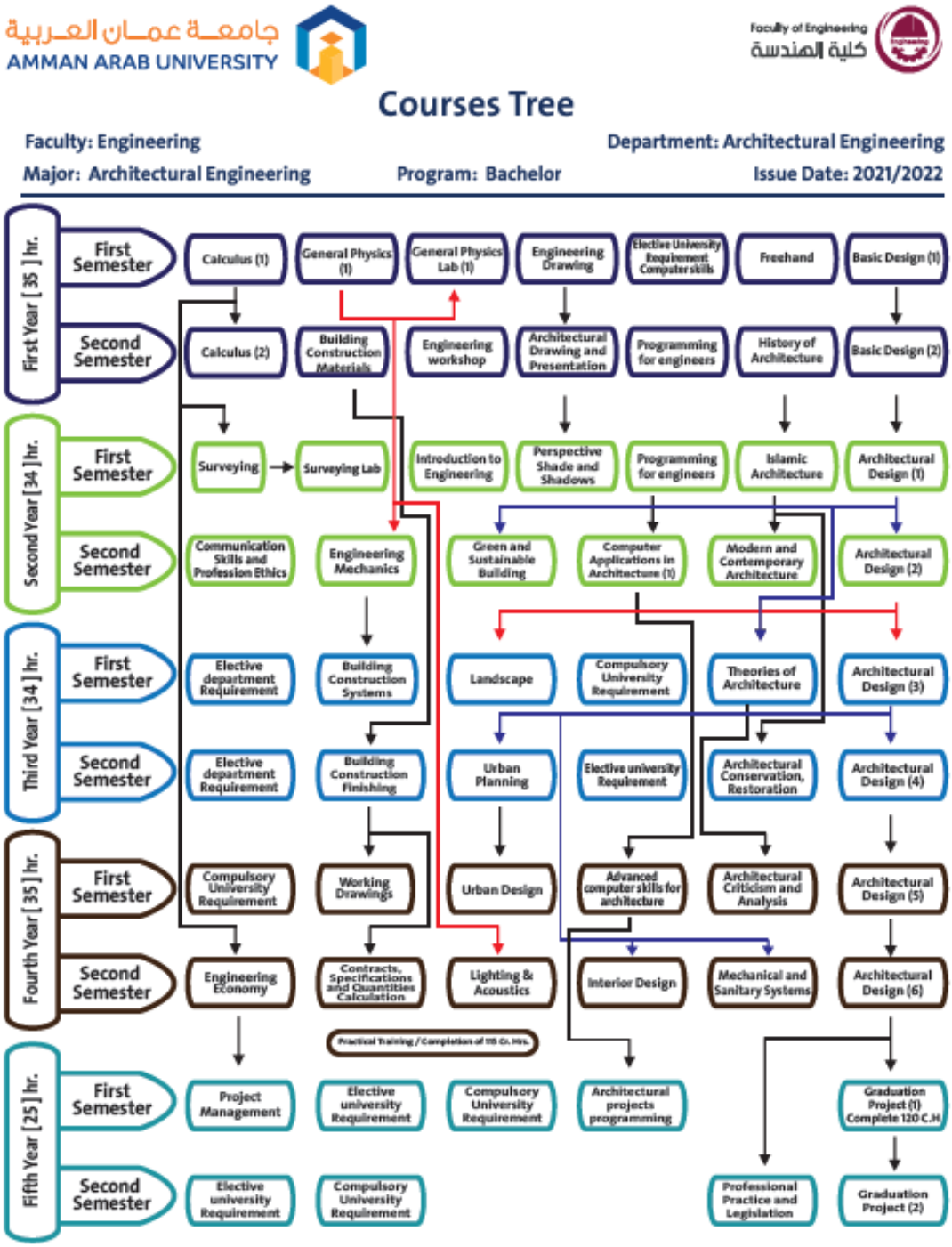
Fifth Year

First Semester					
Course No.	**Course Title**	**Type of Learning**	**Credited Hours***	**Prerequisite**	**Co-requisite**
60375102	Project Management	Blended	3	60224203	-
60385110	Graduation Project (1)	Face to face	1	60384209 +pass 120 cr.hr	-
60365105	Architectural projects programming	Face to face	3	60382204	-
–	Elective university Requirement	Online E-learning	3	–	-
-	Compulsory University Requirement	Online E-learning	3	–	-
Total			**13**		

Second Semester					
Course No.	**Course Title**	**Type of Learning**	**Credited Hours***	**Prerequisite**	**Co-requisite**
60375204	Professional Practice and Legislation	Blended	2	60384209	-
60385215	Graduation Project (2) ***	Face to face	4	60385110	-
-	Elective University Requirement	Online E-learning	3	–	-
-	Compulsory University Requirement	Online E-learning	3	–	-
Total			**12**		

* **Credit Hours**

Courses Tree



Course Number Course Title Credit Hours (Prerequisite)

50211104 Calculus (1) 3 Credit hrs. Prerequisite: None

Limits, continuity, and their applications: chain rule, Implicit differentiation, related rates, increase decrease, concavity. Extrema. Newton's method, Roll's theorem, Mean-Value Theorem, definite and indefinite integrations, fundamental theorem of calculus, Area and volume, inverse functions, Exponential and logarithmic functions with their derivatives , conic sections.

50211202 Calculus (2) 3 Credit hrs. Prerequisite: 50211104

Inverse trigonometric and hyperbolic functions. Techniques of integration, by parts, trigonometric integrals, trigonometric substitutions, partial fractions, quadratic expressions, general substitutions. Improper integrals. Infinite series, convergence and divergence, convergence tests, Maclaurin and Taylor series. Polar coordinates: definition, arc length, area, conic sections.

50551101 General Physics (1) 3 Credit hrs. Prerequisite: None

Motion in One Dimension, Vectors, Motion in Two Dimensions, The Laws of Motion, Circular Motion and Other Applications of Newton's Laws, Work and Kinetic Energy, Potential Energy and Conservation of Energy, Linear Momentum and Collisions, Rotation of a Rigid Object About a Fixed Axis, Rolling Motion and Angular Momentum.

50551102 General Physics Lab (1) 1 Credit hrs. Prerequisite: 50551101*

Collection and Analysis of Data, Measurements and Uncertainties, Vectors: Force Table, Kinematics of Rectilinear Motion, Force and Motion, Newton's laws, Collision in Two Dimensions, Rotational Motion & Simple Harmonic Motion: Simple Pendulum, The Behavior of Gases with Changes in Temperature and Pressure, Measuring the coefficient of viscosity of liquid, Specific Heat Capacity of Metals.

*** Or Co-requisite**

60221101 Engineering Drawings 2 Credit hrs. Prerequisite: None

Instruments of Drawing, Graphic geometry (Lines, Letters, Numbers, Tangency Construction), Intersections, Types of Projection, Dimensioning, Plane Sectioning. Steel Structure Drawing, Reinforced Concrete Beams Drawing, Highway Projection (Curves, Slopes, Earth Works and their projection), Bridge Drawing (Retaining Walls, Abutments, and Piers). Projection of Water Structure at Water-way Intersection.

60222102 Introduction to Engineering 1 Credit hrs. Prerequisite: None

Topics include goal setting and career assessment, ethics, public safety, the engineering method and design process, written and oral communication, interpersonal skills and team building, and computer applications.

60224203 Engineering Economics 3 Credit hrs. Prerequisite: 50211104

Major elements of feasibility studies, Principles of engineering Economy. Equivalence and compound

60372201 Communication Skills and Profession Ethics 3 Credit hrs. Prerequisite: 50511105

General ideas about the writing styles and forms, writing in business, industry and government, adequacy and excellence. Analyzing the communication context, basic writing techniques, types of written communication, revising for excellence, college writing and professional writing, major types of on-job writing, writing categories, report design report writing procedures, preparing own resumes and CV's, practical experience on how to perform and attend interviews of work.

60375102 Project Management 3 Credit hrs. Prerequisite: 60224203

The project manager nomination and responsibilities, Project initiation, Project budgeting, Development of project work plan, Task preparing, Techniques for project planning and scheduling, Project progress measurement and project tracking by using earned value techniques, Project cost and time evaluations, Project close out procedures, Management skills for engineering projects, safety management.

60331204 Engineering Workshops 1 Credit hrs. Prerequisite: None

Includes theoretical and practical topic covering : four workshops turning , carpentry , electricity and blacksmithing; manual work of art, the settlement and the formation, gathering wood together , all kinds of welding, the mechanism of welding machine, an arc welding electroplating, welding wire, specifications and types of electrical circuits , house electrical wiring , electric current and resistance estimating, use of production machines for metals , precision instrument , types of turnings, the development in turnings, hand tools : Saw , Drill, Lathe, stone grinding

60311201 History of Architecture 3 Credit hrs. Prerequisite: None

Introduction to history of art and architecture, and their development through the ancient civilizations of Egypt, Mesopotamia, Greece and Rome. Analysis of historical monuments and buildings and their architectural characteristics. Emphasis on the architectural principles, theories, and impact on the development of buildings throughout ancient times. Examining ancient historical patterns.

60312102 Islamic Architecture 3 Credit hrs. Prerequisite: 60311201

Development of Islamic art and architecture since the dawn of Islam. Analysis of architectural characteristics and Islamic heritage. Social, environmental and functional implications on the architecture in the Moslem World, which yield a suitable habitat for Moslem people. Analysis of selected examples of historical monuments from Islamic countries.

60313103 Modern and Contemporary Architecture 3 Credit hrs. Prerequisite: 60312102

The formation of modern theories and trends in contemporary art and architecture since the industrial revolution until the 20th century. Analysis of works by the pioneers of modern movements in architecture. Regional and vernacular architecture with special regards to environmental, social and technological issues. Selected examples of characteristic contemporary architecture in Jordan.

60322201 Theories of Architecture 3 Credit hrs. Prerequisite: 60382103

Reviewing the contexts in which the design process emerged at a certain time, the factors that influenced the process of architectural design, study the most important design considerations that produced the architectural forms, and also aims to produce adaptive architectural designs that suit the conditions and environment and belongs to its age. Ensuring that the student is able to analyze, understand and develop his or her architectural language.

60323202 Human Behavior in Built Environment 3 Credit hrs. Prerequisite: 60382204

Studying the interaction dynamic relationship between behaviors and living spaces with a focus on cognitive processes and understanding motor behaviors in order to achieving goals the meaning and the sense of aesthetics and satisfaction of spaces users add appositive psychological and social changes on the individuals and groups humans.

60331201 Building Construction Materials 2 Credit hrs. Prerequisite: None

Properties of natural materials (strength, tenacity, porosity, heat conductivity, etc.). Building materials (stone, concrete, bricks, timber, metals, glass, plastic, etc.). Building technology (site preparation, soil testing, excavation works, and types of foundation: raft, piles, footings, etc.). Systems of structures: post and lintel, slabs, roofs, internal and external walls, etc. Types of damp proofing in buildings.

60333202 Building Construction Finishing 2 Credit hrs. Prerequisite: 60382204

Types of modern materials for cladding and finishing of buildings. Kitchen fitments, bathroom appliances, wood works, metal works and different fixtures in buildings. Means of protection from extreme climatic conditions. Modern materials used in plastering and painting. Grid system and contemporary systems of structure.

60334203 Lighting & Acoustics 2 Credit hrs. Prerequisite: 50551101

Basic principles of lighting and acoustics and their effect on the design of buildings. Noise abatement and insulation of buildings against noise pollution. Applications using instruments for measurement of illumination and acoustics.

60334204 Mechanical and Sanitary Systems 2 Credit hrs. Prerequisite: 60383105

Study of sewage systems, fire resistance, mechanical transport systems, and organization Electrical connections, and high-rise building systems. Health tools and their specifications, Health and internal number. Fire, heating, air conditioning and cooling in the various seasons of the year, the most important systems, the foundations of design.

60343101 Landscape 2 Credit hrs. Prerequisite: 60382204

Introduction to landscape architecture ,studying history of landscape and gardens and their evolution through civilization, elements and principles of landscape, plant species of Jordan , garden urban and furniture , practical exercise and projects.

60343202 Urban Planning 3 Credit hrs. Prerequisite: 60383105

Introduction to the environmental, social and economic aspects necessary in the formation of an urban planning process. The characteristics of the urban fabric and the development of towns and cities and their urban elements into integrated, harmonious and functional unity. Social services and infrastructure and their necessary provision according to norms and standards. Analysis of deteriorated urban areas to measure shortage of services.

60344104 Urban Design 3 Credit hrs. Prerequisite: 60343202

Principles of urban design, initiation, and development. Relations between urban design, planning, architecture, landscaping, building legislation and human behavior. Factors affecting the formation and development of urban built environment within physical, social and economic contexts. Design application on an urban site with specific identity using contemporary criteria in problem solving.

60344105 Local Architecture and Conservation of Architectural Heritage 3 Credit hrs. Prerequisite: 60383105

Basic principles of architectural conservation of traditional sites and buildings in historic contexts with special reference to the social role in conservation process. Documentation, field survey, listing of heritage buildings, conservation techniques and methods. Case studies from Jordan, Arab, and non-Arab countries.

60352201 Green and Sustainable Building 3 Credit hrs. Prerequisite: 60382103

A comprehensive introduction of the history of sustainable architecture, it's techniques of applications in the various elements of the built environment, design strategies , environmental social approaches to be considered for sustainability of sites of buildings, international and domestic applications of sustainable design methodology , the local , interventional codes for green building.

60353102 Environmental Control 3 Credit hrs. Prerequisite: 60382103 + 50551101

Introduction to renewable energy resources (sun, wind, biogas, etc.) and their implication on sustainable development. Application of energy conservation measures in buildings. Relationship between architecture, ecosystem and the built environment. The strategy of conservation of natural resources. Artificial Means of environmental control. Existing examples of buildings applying soft energy.

60362202 Computer Applications in Architecture (1) 2 Credit hrs. Prerequisite: 60362203

The role of computer in architectural applications. The use of cad and a cad software in the production of 2D and 3D design and detailed drawings and applications, and print out architectural drawing.

60363103 Computer Applications in Architecture (2) 2 Credit hrs. Prerequisite: 60362202

Two and three-dimensional architectural drawings. Production of architectural presentation and rendering of drawings with static and animated images using relevant computer software 3D max and Photoshop. Examples of basic architectural details and workshop drawings.

60374203Contracts, Specifications and Quantities Calculation 3 Credit hrs. Prerequisite: 60333202

Introduction to quantity surveying, preparation of bill of quantities, and technical specifications for construction stages. General and specific technical terms of references applied in Jordan. Examples of documents and contracts related to project implementation. Preparation of specifications and quantities of a small-scale project.

60375204 Professional Practice and Legislation 2 Credit hrs. Prerequisite: 60384209

Introduction to quantity surveying, preparation of bill of quantities, and technical specifications for construction stages. General and specific technical terms of references applied in Jordan. Examples of documents and contracts related to project implementation. Preparation of specifications and quantities of a small-scale project.

60381101 Basic Design (1) 3 Credit hrs. Prerequisite: None

Design elements with two dimensions (lines, shape, color and value, texture, size, direction) and design principles and fundamentals that achieve balance, harmony, assertiveness, unity and diversity, leading to the transition from two-dimensional design configurations to an initial understanding of the transition to the third dimension in design through short projects and exercises Selected.

60381202 Basic Design (2) 3 Credit hrs. Prerequisite: 60381101

Learn and analyze elements and principles of design to create three-dimensional formations. Understanding of form, spatial space, principles of vacuum regulation, human scale, color, lighting, abstract models.

60382103 Architectural Design (1) 4 Credit hrs. Prerequisite: 60381202

An introduction to methods of designing buildings and architectural spaces of a slight degree of functional complexity at the horizontal level with low height, with local techniques for load-bearing walls and limited spaces based on foundations and analysis of the local environment and the required function By recognizing the function and its importance in architecture and its connection with the visual and plastic aspects, and the accompanying meanings related to the formation of the architectural void in its simplest forms. And that by studying suitable examples and design projects with a construction area of up to 500 square meters.

60382204 Architectural Design (2) 4 Credit hrs. Prerequisite: 60382103

Advanced functional building design methods that include small and medium-sized spaces with low heights based on the foundations of the analysis of the natural environment and multiple functions, with a focus on forming the main idea of the design, taking into account the function, aesthetics, and the surrounding spatial conditions, through design projects with a construction area ranging between 500-1000 square meters.

60383105 Architectural Design (3) 4 Credit hrs. Prerequisite: 60382204

Architectural design methods with their structural composition and finding solutions within economic and technological determinants. With continued attention to the visual and functional aspects, through architectural designs for multi-use and multi-story projects and the design of vertical transition of buildings, which can be implemented on the ground. Considering the economic, social, climatic and built environment dimensions through design projects with a construction area ranging between 1000-3000 square meters.

60383206 Architectural Design (4) 4 Credit hrs. Prerequisite: 60383105

Methods of architectural designs for buildings with a specialized function (educational, commercial, recreational, health, or the like) by increasing scale and complexity at the level of size and function with attention to technical aspects, structural systems and means of controlling the internal environment through design projects whose construction area ranges between 3000- 6000 square meters.

60384107 Working Drawings 3 Credit hrs. Prerequisite: 60383206

Production of an appropriate set of working drawings. Preparation of a complete set of workshop drawings of a design project as a principal part of the tender documents. Application of the Jordanian building codes. Presentation techniques including computer workshop drawings.

60384108 Architectural Design (5) 4 Credit hrs. Prerequisite: 60384107

Methods of architectural designs for buildings with a specialized function (educational, commercial, recreational, health, or the like) by increasing scale and complexity at the level of size and function with attention to technical aspects, structural systems and means of controlling the internal environment, as well as social as well as philosophical aspects based on global architectural trends and movements Contemporary and focus on the integration of architectural design with the environment and urban fabric through selected design projects with a construction area ranging between 5000-10000 square meters.

60384209 Architectural Design (6) 3 Credit hrs. Prerequisite: 60384108

Apply urban design theories and methodology to applicable urban projects within a realistic environment. Studying the urban and urban side by analyzing the forces and priorities affecting the human requirements in general and the requirements of the local community for the project in particular. Develop the student's design ability to deal with design problems within a broader urban perspective. Design solutions must be feasible and take into account the urban content and include planning of land use and design of the built environment, and projects have two dimensions: planning and design in which the transition is made from preparing the master plan

60384210 Interior Design 3 Credit hrs. Prerequisite: 60383105

The interior environment of buildings and its impact on users. Provision of comfort and enjoyment. Factors of harmony and matching among internal components: form, color, texture, lighting as well as interior furniture. Choice of color scheme and materials for walls, ceilings and floors.

60385110 Graduation Project (1) 1 Credit hrs. Prerequisite: 60384209+ Pass 120 Cr. hrs.

Preparing a research for the design of the graduation project by creating an information base for an architectural project for a real site from the local environment, with the adoption of an integrated and comprehensive methodology for defining the design problem and planning for it, determining the project's goals and requirements, studying cases similar to the nature of the project to be designed, preparing the architectural program, proposing design alternatives and strategies Clear to get to the initial idea of a graduation project., and to provide an integrated final report.

63085212 Graduation Project (2) 4 Credit hrs. Prerequisite: Pass 60385110

Developing ideas and choosing the appropriate alternative for the architectural project that was studied in the Architecture Graduation Project research course (1), so that its construction area ranges from (8000-12000) square meters and on a real site, and the design includes a comprehensive analysis of the architectural idea and design philosophy and design development based on the curriculum And the idea, to provide an integrated study of internal and external spaces, study movement inside and outside the project, develop alternatives and evaluate them, and appropriate output to form an integrated innovative formation that links all design elements and conforms to the structural system and all necessary services, and to provide all the architectural drawings that express the design idea And an anthropomorphic project.

60391101 Freehand Drawing 2 Credit hrs. Prerequisite: None

Perception of architectural and artistic objects, volumes, textures, colors and materials. Means of expression in free hand sketching of forms and natural settings. Training by individuals and group work on the projection and enlargement of different images. Sketches including different plants, objects and people using pencil and other presentation media with special emphasis on the aesthetic proportions of objects.

60391202 Architectural Drawing and Presentation 3 Credit hrs. Prerequisite:

Various techniques of drafting, architectural expressions and projection. Perspective drawings using one and two vanishing points. Techniques of structuring interior and exterior perspectives of buildings, using various means of architectural presentation. The effect of shade and shadow on architectural drawings. Projection of different forms and shapes of buildings.

60392103 Perspective, Shade and Shadows 3 Credit hrs. Prerequisite: 60391202

Perspective projection systems: projection, orthogonal projection, linear projection, symmetrical projection, projection, linear projection, point projection, point projection; one point, two dots, three points; , Parallel lines of the surface; perspective variables: perspective measurements; perspective geometry: tilt lines, fading sequence, circles; point-by-point perspective. Perspective with two dots, perspective with three points, shadow and shadows: reflections.

60384311 Training Field 6 Credit hrs. Prerequisite: Pass 115 Cr. hrs.

Training for 8 weeks inside Jordan or outside Jordan in related offices or companies that are subject to approval of the training committee of the department.

60324103 Architectural Criticism and Analysis 3 Credit hrs. Prerequisite: 60322201

Introduction to the history of architectural criticism, its principles and methods. Application of such methods on examples of buildings. Case studies with emphasis on international examples of contemporary architects who contributed to the recent movements.

60334205 Advanced Building Technology 3 Credit hrs. Prerequisite: 60333202

Analysis of building techniques and the materials used in ancient building construction. Its origin and development and the factors that affected its development. The intention is to find out the sources of the materials and to consider what the ancient craftsmen used them for and why. This will include the study of the construction techniques used in prehistoric until the modern architecture. Field trips to a historic building are important in order to analyze the structural, architectural, and functional elements.

60343204 Architectural Conservation, Restoration 2 Credit hrs. Prerequisite: 60312102

Basic principles of architectural conservation of traditional sites and buildings in historic contexts with special reference to the social role in conservation process. Documentation, field survey, listing of heritage buildings, conservation techniques and methods. Case studies from Jordan, Arab, and non-Arab countries.

60344106 Housing 3 Credit hrs. Prerequisite: 60343202

Social and economic aspects influencing housing availability for different income groups. The role of public and private sectors in the provision of housing. Problems of coordination between the different agents involved in housing. Case studies including deteriorated urban housing to provide realistic approaches to socioeconomic and human issues.

60364105 Advanced Computer Skills for Architecture 2 Credit hrs. Prerequisite: 60362202

This course provides students with hands-on experience using software packages in architectural media, graphics and representation. It teaches students to use computer applications in producing two and three-dimensional drawings using 3d max, presentation techniques for producing rendered, modeled and visualized architectural drawings.

60365105 Programming of Architectural Projects 3 Credit hrs. Prerequisite: 60383105

Analysis the aspects of the project and stud the social, technical, environmental and urban considerations in the environment surrounding the project site, adding this information into specific tables within limits and possibilities. Using computer programs and strategies to solve the problem of the project.

60392104 Workshops and Model Making 3 Credit hrs. Prerequisite: 60382103

A practical course covering model-making skills and techniques for theatre, film, animation, and graphic and product design. Emphasis is made on accessible techniques of building, modeling, surfacing and finishing relevant to designers in various disciplines. There is a focus on „realism" in representation, geared more to theatre and film work. Areas covered include methods of constructing or shaping with card, plastics and foams; methods of casting; modeling with soft materials; figures; techniques of soldering and etching metals; scenic, such as plants and trees; various surface/texture treatments and paint finishes.

60393205 Architecture Photography 3 Credit hrs. Prerequisite: 60383105

Introduction to Photography: Elements and principles of photography (Aperture, Shutter Speed, Film Sensitivity, Lenses), Photography Rules, Practical Photography Exercises including: Architectural Photography; (Photography of buildings, artistic beauty, external and internal architectural photography), urban photography; life of the city, streets, events of life).

60385113 Selected Topics in Architecture 3 Credit hrs. Prerequisite: 60384108

It Deals with specific architectural issues to be the focus of presentation, analysis and discussion of the architectural issues involved, such as style, message, techniques, or any challenge related to different areas of knowledge. The subject may also be related to general political, social and economic changes, their impact and impact on the formation, formation, architectural construction or architectural system of the city. This course can also deal with any topic that will raise the level of knowledge of the student and increase the horizon and the extent of cultural architecture.

60232101 Surveying 3 Credit hrs. Prerequisite: 50211104

Introduction to surveying fundamental, units of measurements and scale, chain surveying; leveling and its application in contouring, profiles and cross-sections. Areas, volumes, and earthwork calculations; Theodolite and its application in measurement of angles; traverse surveys, Traverse coordinate calculations; Theory of errors and adjustments; tachometry and electronic distance measurements (EDM, Total station).

60232102 Surveying Lab 1 Credit hrs. Prerequisite: 60232101*

Using traditional surveying equipment like chain and measuring tape, leveling, countering, cross and longitudinal sections, measuring vertical and horizontal angles using theodolite.

*** Or Co-requisite**

60332206 Engineering Mechanics 2 Credit hrs. Prerequisite: 50551101

Basic principles of mechanics of materials, measurement's units, force vectors, balance, solid objects, equivalent force systems, center of work. Structural analysis: trusses, structures, axial forces, stress and strain.

60333107 Building Construction Systems 2 Credit hrs. Prerequisite: 60242203

Characteristics of reinforced concrete, concrete under the influence of axial forces, calculation of loads according to the American codes, introduction to the design of steel structures, loads, specifications, methods of design and analysis of structural elements exposed to tension and pressure. Structural systems: bases, foundations, columns, and bridges.

60363203 Programming for Engineers 3 Credit hrs. Prerequisite 50511110

Basic Programming Principles, Writing, Implementing and Tracking Program Execution, Program Design, Embedding and Summarizing Concepts with Emphasis on Combinations and Concepts of Data Types, MATLAB. This course also covers some principles of data structure.