



Faculty of Engineering Department of Architectural Engineering

Study Plan of the Bachelor's Degree

In: Architectural Engineering

Academic Year: 2020/ 2021



Vision of the Department

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

Mission of the Department:

Seeking to graduate creative and competitive architecture engineers able to achieve comprehensive sustainability.

Objectives of the Department:

1. To graduate qualified and well-trained architecture engineers able to meet the local and regional technological demands.
2. To renew and develop architectural arts, construction and urban designs.
3. Developing students' competencies in discussion skills, and critical and creative thinking.
4. Encouraging qualified students to produce artistic and creative designs that meet the current challenges.
5. Embracing the architecture heritage and taking into account the educational, societal, and environmental factors.
6. Keeping abreast with the creative and developed technologies in designing process.
7. Giving priority to green building and sustainable construction.
8. Activation of the scientific research among faculty and students.
9. Establishing communication links with relevant parties in the fields of architecture engineering.

Intended Learning Outcomes (ILOs):

1. Managing technical and professional communication and adhering to professional ethics.
2. Using original ideas to explain information, finding justified conclusions and testing alternative results according to specific Architecture criteria
3. Critical analysis and mastering scientific and architectural thinking skills.
4. Understanding the basic principles of design and taking advantage of design solutions of existing architectural projects.
5. Architectural design through effective use of the basic principles of two and three-dimensional design.
6. Using construction science and engineering systems in design process.
7. Understanding contemporary architectural movements in shaping theoretical trends of design.
8. Keeping up with intellectual and technical developments and meeting the current needs of society and the labor market.



9.

Framework

Framework of the Bachelor's Degree in Architectural Engineering (170 Cr. Hrs.)

Sequence	Classification	Credit Hours	Percent %
1st	University Requirements	27	15.98
2nd	Faculty Requirements	26	15.38
3rd	Department Requirements	117	68.64
Total		170	100%

Course Numbering

6	03	x	x	x
Faculty Code	Dept. Code	Knowledge Field	Course Level	Sequence
Engineering	Architectural Engineering			

Cognitive Domains

Number	Cognitive Domain	Credit Hours
01	History of Architecture	9
02	Theories of Architecture	6
03	Building Construction and technology	9
04	Urban sciences	10
05	Theories of Sustainable Design and Green Architecture	6
06	Digital architecture technology	7
07	Project management and Field practice	7
08	Architectural Design(Graduation Project(1)+ Graduation Project(2))	41
09	Architectural Presentation	8



1. University Requirements: (27 Credit Hours)

A. Compulsory Requirements: (15 Credit Hours)

Course No.	Course Title	Cr. Hr.	Prerequisite
50511102	Arabic Language (1)	3	50511108
50511103	English Language (1)	3	50511109
50511108	Arabic Language Prerequisite	0	-
50511109	English Language Prerequisite	0	-
50511110	Computer Basics Prerequisite	0	-
50511206	National Education	3	-
50511308	Military Sciences	3	-
50541103	Computer Skills	3	50511110
Total		15	

B. Elective Requirements: (12 Credit Hours) from the following list:

Course No.	Course Title	Cr. Hr.	Prerequisite
50511204	Life Skills	3	-
50511306	Entrepreneurship and Creativity	3	-
50521101	Arabic Language (2)	3	50511102
50521102	English Language (2)	3	50511103
50521203	Principles of Psychology	3	-
50521204	Human Rights	3	-
50531101	Islamic Culture	3	-
50531205	Jerusalem and The Hashemite Guardianship	3	-
50541203	Environment and Society	3	-
50541206	Health of Individuals and Society	3	-
50541307	Communications and The Internet	3	-
Total		12	



2. Faculty Requirements: (26 Credit Hours)

A. Compulsory Requirements: (26 Credit Hours)

Course No.	Course Title	Cr. hr.	Theoretical	Practical	Prerequisite
5021104	Calculus (1)	3	3	-	-
5021202	Calculus (2)	3	3	-	5021104
5055101	General Physics (1)	3	3	-	-
5055102	General Physics Lab (1)	1	-	2	*5055101
6022101	Engineering Drawing	2	-	4	-
60222102	Introduction to Engineering	1	1	-	-
60224203	Engineering Economy	3	3	-	5021104
60363203	Programming for Engineers	3	3	-	5054103
60372201	Communication Skills and Profession Ethics	3	3	-	5051103
60375102	Project Management	3	3	-	60224203
60331204	Engineering Workshop	1	-	2	-
Total		26	22	8	

* Or Co-requisite

3. Department Requirements (117 Credit Hours)

A. Compulsory Requirements: (103 Credit Hours)

Course No.	Course Title	Cr. hr.	Theoretical	Practical	Prerequisite
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
60323202	Human Behavior in Built Environment	3	3	-	60382204
60331201	Building Construction Materials	2	2	-	-
60333202	Building Construction Finishing	2	-	4	60331201
60334203	Lighting & Acoustics	2	1	2	5055101
60334204	Mechanical and Sanitary Systems	2	2	-	60383105
60343101	Landscape	2	1	2	60382204



Course No.	Course Title	Cr. hr.	Theoretical	Practical	Prerequisite
60343202	Urban Planning	3	2	2	60383105
60344104	Urban Design	3	3	-	60343202
60344105	Local Architecture and Conservation of Architectural Heritage	2	2	-	60383105+ 60312102
60352201	Green and Sustainable Building	3	3	-	60382103
60353102	Environmental Control	3	2	2	50551101+ 60382103
60362202	Computer Applications in Architecture (I)	2	1	3	60363203
60375103	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	3	1	4	60383105
60385112	Graduation Project (1)	2	2	-	+60384209 cr.hr pass 120
60385215	Graduation Project (2) *	4	-	8	60385112
60364104	Advanced Computer Skills for Architecture	3	1	4	60363103
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	-	-	cr.hr 115 pass
Total		103	62	84	

*Students are allowed to register (Graduation project 2) after completion of all architectural design courses.

** Field training for three consecutive months.

B. Elective Requirements: (6 Credit Hours)



Ref.: Deans' Council Session (33/2019-2020), Decision No.: 13, Date: 24/08/2020





Course No.	Course Title	Cr. hr.	Theoretical	Practical	Prerequisite
60324103	Architectural Criticism and Analysis	3	3	-	60322201
60334205	Advanced Building Technology	3	3	-	60333202
60343203	Architectural Conservation, Restoration	3	3	-	60312102
60344106	Housing	3	3	-	60343202
60365105	Programming of Architectural Projects	3	3	-	60383105
60392104	Workshops and Model Making	3	-	6	60382103
60363103	Computer Applications in Architecture (2)	2	1	3	60362202
60393205	Architecture Photography	3	3	-	60383105
60385113	Selected Topics in Architecture	3	3	-	60384108
Total		6			

C. Ancillary Courses (8 Credit Hours):

Course No.	Course Title	Cr. hr.	Theoretical	Practical	Prerequisite
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	

* Or Co-requisite



Advisory Study Plan for the Bachelor's Degree in

First Year				
First Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
5021104	Calculus (1)	3	-	-
5054103	Compulsory University Requirement / Computer Skills	3	-	-
5055101	General Physics (1)	3	-	-
5055102	General Physics Lab (1)*	1	-	5055101
6022101	Engineering Drawing	2	-	-
6038101	Basic Design (1)	3	-	-
6039101	Freehand Drawing	2	-	-
Total		17		

Second Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
5021102	Calculus (2)	3	5021104	-
6031101	History of Architecture	3	-	-
6033101	Building Construction Materials	2	-	-
6038102	Basic Design (2)	3	6038101	-
6039102	Architectural Drawing and Presentation	3	6022101	-
6033104	Engineering Workshop	1	-	-
-	Compulsory University Requirement	3	-	-
Total		18		



Second Year				
First Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
60222102	Introduction to Engineering	1	-	-
60232101	Surveying	3	50211104	-
60232102	Surveying Lab*	1	-	60232101
60312102	Islamic Architecture	3	60311201	-
60363203	Computer Skills for Engineering	3	50541103	-
60382103	Architectural Design (1)	4	60381202	-
60392103	Perspective, Shade and Shadows	3	60391202	-
Total		18		

Second Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
60332206	Engineering Mechanics	2	50551101	-
60322201	Theories of Architecture	3	60382103	-
60352201	Green and Sustainable Building	3	60382103	-
60362202	Computer Applications in Architecture (1)	2	60362203	-
60372201	Communication Skills and Profession Ethics	3	50511103	-
60382204	Architectural Design (2)	4	60382103	-
Total		17		



Third Year				
First Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
60333107	Building Construction Systems	2	60242203	-
60313103	Modern and Contemporary Architecture	3	60312102	-
60343101	Landscape	2	60382204	-
60353102	Environmental Control	3	+ 50551101 60382103	-
60363103	Computer Applications in Architecture (2)	2	60362202	-
60383105	Architectural Design (3)	4	60382204	-
Total		16		

Second Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
60323202	Human Behavior in Built Environment	3	60382204	-
60333202	Building Construction Finishing	2	60382204	-
60343202	Urban Planning	3	60383105	-
60383206	Architectural Design (4)	4	60383105	-
-	Compulsory University Requirement	3	-	-
-	Elective University Requirement	3	-	-
Total		18		



Fourth Year				
First Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
60344104	Urban Design	3	60343202	-
60344105	Local Architecture and Conservation of Architectural Heritage	2	60383105 60312102	-
60384107	Working Drawings	3	60333202	-
60384108	Architectural Design (5)	4	60383206	-
-	Elective Department Requirement	3	-	-
-	Elective University Requirement	3	-	-
Total		18		

Second Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
60224203	Engineering Economy	3	50211104	-
60334203	Lighting & Acoustics	2	55110105	-
60334204	Mechanical and Sanitary Systems	2	60383105	-
60384209	Architectural Design (6)	3	60384108	-
60384210	Interior Design	3	60383105	-
-	Elective University Requirement	3	-	-
Total		16		

Summer Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
60384311	Training Field**	6	Pass 115 Cr.Hr	-
Total				



Fifth Year				
First Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
60375102	Project Management	3	60224203	-
60375103	Contracts, Specifications and Quantities Calculation	3	60333202	-
60385112	Graduation Project (I)	2	60384209 120 pass+ cr.hr	-
-	Elective Department Requirement	3	-	-
-	Compulsory University Requirement	3	-	-
Total		13		

Second Semester				
Course No.	Course Title	Cr. hrs.	Prerequisite	Co-requisite
60375204	Professional Practice and Legislation	2	60384209	-
60385215	Graduation Project (2) ***	4	60385112	-
-	Elective University Requirement	3	-	-
-	Compulsory University Requirement	3	-	-
Total		12		

*Or Co-requisite

** Field training for three consecutive months

*** Students are allowed to register (Graduation project 2) after completion of all architectural design courses.



Description of Courses offered by the

Course Number	Course Title	Credit Hours	(Prerequisite)
5021104	Calculus (I)	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.		
5021202	Calculus (2)	3 Credit hrs.	Prerequisite: 5021104
	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.		
5055101	General Physics (I)	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.		
5055102	General Physics Lab (I)	1 Credit hrs.	Prerequisite: 5055101*
	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		
6022101	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: 5021104

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

60372201 Communication Skills and Profession Ethics 3 Credit hrs. Prerequisite: 5051103

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

**6031201 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.

6031202 Islamic Architecture 3 Credit hrs. Prerequisite: 6031201

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.

6031303 Modern and Contemporary Architecture 3 Credit hrs. Prerequisite: 6031202

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.

6032201 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.

6032302 Human Behavior in Built Environment 3 Credit hrs. Prerequisite: 60382204

A tutorial-based course; it introduces basic multidimensional understanding of the built environment at the levels of urban, architectural, landscape, building systems and material, design process and implementation in its relation to people. It provides understanding to the complex nature of place forming by synthesizing its basic ingredients that relate to perception of place identity and meaning, reflecting people needs, uses, context, and memory. The course touches on psychological, behavioral, social, and cultural inputs using comparative analysis. It provides understanding of the different spatial typologies, order, relationships, and arrangement in relation to place making and preferences.





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

The eco-system and environmental equilibrium. Natural forces affecting small and large-scale sites. History of gardens and their evolution through civilizations of the Mediterranean region. Plant species of Jordan and Palestine. Spatial arrangements of external landscape in gardens and parks. Landscaping application of actual sites as gardens, open spaces, and gathering areas.

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 project-based course; it examines commercial and residential interior spaces where students will create sustainable and healthy environments to live in. The course reviews case studies representing best practices in sustainable design of interiors for discussion and analysis, evaluating project success according to sustainable theories, application of LEED standards, and life-cycle assessments. Communication of design concepts and development will require developed skills using different media and modes of presentations.

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

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 (I) 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.

60375103 Contracts, 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

An introduction to principles of aesthetic appreciation, plastic art and architecture. Basic methods of design. Two and three-dimensional configurations. Model building using different experimental materials to implement imaginative and conceptual forms.

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

Introduction to architectural design principles. Applications including different visual forms. Emphasizing the role of function and structure on architecture. Design of an elementary architectural project on a plain plot of land.

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

Design of buildings with an integrated program and moderate site requirements. Emphasis shall continue on the effects of functional, visual and structural aspects on architecture. The role of environmental and climatic implications on buildings. Physical means of building acclimatization.

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

Design of a building or a group of buildings with moderate complexity to be erected on gentle slopes. Buildings with multi-functions. Interior design and internal spatial arrangements. Social, psychological and economic aspects influencing architecture and design.

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

Design of a building or a group of buildings to be erected on a site with moderate undulated topography. Interior design techniques, taking into consideration the types of building function. Aesthetic and social values encountered in the design of the built environment.

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

Design of projects with multi-function. Comprehensive design methodology including the integration of Electro-mechanical systems and supporting services in architectural design. Developing new structural systems that match new concepts of architecture. Complex functions, the urban context, and the local identity of the built environment.

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

Contextual design of groups of buildings in a specific urban environment. Upgrading of existing environmental and building conditions. Applications including urban infill and reuse of preserved heritage buildings. Functional, socio-economic and aesthetic issues. Improvement of the quality of life of users and the local population. An integrated framework of urban design.

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.



60385112 Graduation Project (1) 2 Credit hrs. Prerequisite: 60384209+ Pass 120 Cr. hrs.

Research methodologies. Data collection, analysis, synthesis, and thesis report writing of a selected project. Definition of project theme, goals, objectives, preparation of detailed space programmer and area requirements. Choice and analysis of a site and production of thesis report including case studies.

63085212 Graduation Project (2) 4 Credit hrs. Prerequisite: Pass 60385112

Design of the thesis project based on an architectural concept. The design involves analysis of programmer, site planning with respect to the urban context. Detailed design of the building compound or group of buildings with emphasis on the integration of structural and technical aspects in a comprehensive architectural project. Presentation of a complete set of project drawings including three-dimensional presentation and model building.

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.

60343203 Architectural Conservation, Restoration 3 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.



60364104 Advanced Computer Skills for Architecture 3 Credit hrs. Prerequisite: 60363103

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, counteracting, 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 2 Credit hrs. Prerequisite 50541103

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.