

Department of Architecture

Faculty of Engineering & Technology
University of Jordan

B.Sc. Curriculum

2005-2006

Department of Architecture B.Sc. Curriculum

a. Introduction:

The student is required to complete 172 credit hours as follows:

No.	Requirements	Credit Hours
1.	University Requirements	27
2.	Faculty Requirements	21
3.	Department Requirements	124
Total		172

Practical Training:

The student is required to undertake practical training after finishing the required number of credit hours in accordance with the relevant regulations for training at the Faculty of Engineering and Technology.

b. Numbering System:

1. Department Code:

Department	Number
Civil Engineering	1
Architectural Engineering	2
Electrical Engineering	3
Mechanical Engineering	4
Chemical Engineering	5
Industrial Engineering	6
Computer Engineering	7
Mecatronics Engineering	8

c. Course Code:

Range Specialty	Range Number
General	0
Principles & Fundamentals of Architecture	1
Architectural Design	2
Construction Technology	3
Theory and History of Architecture	4
Planning	5
Landscape Architecture	6
Environmental Control	7
Professional Practice	8
Project Design	9

0	9	0	2	3	2	1
	College		Department	Level	Range	Serial

I: University Requirements: 27 credit hours.a. **Mandatory Requirements:** 21 credit hours as follows:b. **Elective Requirements:** 6 credit hours chosen by the student from the following table.**a. Mandatory Requirements:** 21 credit hours as follows:

Course No.	Course Title	Cr. Hours	Pre-Req.
1501101	Communication Skills / Arabic (1)	3	
1501102	Communication Skills / Arabic (2)	3	1501101
1502101	Communication Skills / English (1)	3	
1502102	Communication Skills / English (2)	3	1502101
1900100	Computer Skills	3	
1500100	Military Sciences	3	
1700100	National Education	3	

b. Elective Requirements: 6 credit hours chosen by the student from the following table.

Course No.	Course Title	Cr. Hours	Pre-Req.
0342100	Science and Society	3	-
0305100	The Environment	3	-
1000100	Democracy and Human Rights	3	-
0401100	Islamic Culture	3	-
0402100	Islamic System	3	-
1731101	Logic	3	-
1702101	Arab and Islamic Civilization	3	-
1704100	Introduction to Social Science	3	-
1736100	Introduction to Sociology Science	3	-
1705100	Jordan Geography	3	-
1733100	Jordan Archeology	3	-
0641100	Home Plantation	3	-
0803100	Introduction to Library Science and Informatics	3	-
0905100	Principles in General Safety	3	-
1132100	Sport and Health	3	-
1601100	Principles of Administration	3	-
0603100	Principles of Human Nutrition	3	-
0630100	Agriculture in Jordan	3	-

II. Faculty Requirements: 21 mandatory credit hours:

a. Mandatory Requirements: 21 credit hours as follows:

b. Elective Requirements: None

a. Mandatory Requirements: 21 mandatory credit hours as follows:

Course No.	Course Title	Cr. Hours	Weekly Hours		Pre-Req.
			Parc.	Lec.	
0301101	Calculus (1)	3	-	3	-
0301102	Calculus (2)	3	-	3	0301101
0302101	General Physics (1)	3	-	3	-
0302111	General Physics Lab. (1)	1	3	-	0302101 or Co-requisite
0901420	Engineering Economy	3	-	3	Fourth Year Level
0904131	Engineering Graphics	3	2 Drawing 2 Computer	2	-
0906111	Workshops	1	3	-	-
0906201	Technical Writing	1	-	1	1502102
1901102	Computer Skills (2)	3	-	3	1900100

Department of Architecture

I. *B.Sc. Curriculum* Department requirements: 124 credit hours as follows:

a. *Mandatory*: 103 credit hours.

<i>Course No.</i>	<i>Course title</i>	<i>Cr. Hrs</i>	<i>Lec.</i>	<i>Prac.</i>	<i>Prereq.</i>
0902113	Free Hand Sketching (1)	1	-	3	-
0902114	Free Hand Sketching (2)	1	-	3	0902113
0902115	Architectural Drawing & Presentation	3	1	6	0904131*
0902121	Basic Design (1)	4	-	12	-
0902122	Basic Design (2)	4	-	12	0902121
0902201	Computer Architectural Drawing	2	1	2	0902115*
0902213	Architectural Communication Skills	2	1	3	0902115
0902223	Architectural Design (1)	4	-	12	0902121
0092224	Architectural Design (2)	4	-	12	0902223
0902233	Building Construction (1)	3	2	3	-
0902234	Building Construction (2)	3	2	3	0902233
0902243	History & Theory of Architecture (1)	3	3	-	-
0902244	History & Theory of Architecture (2)	3	3	-	0902243
0902323	Architectural Design (3)	4	-	12	0902224
0902324	Architectural Design (4)	4	-	12	0902323
0902335	Building Construction (3)	3	2	3	0902234
0902336	Working Drawings	3	2	3	0902335
0902341	Architectural Analysis & Criticism	3	3	-	0902244
0902343	History & Theory of Architecture (3)	3	3	-	0902244
0902344	History & Theory of Contemporary Architecture	3	3	-	0902343
0902353	Building Legislation	3	3	-	0902324
0902371	Illumination and Acoustics	3	2	3	-
0902423	Architectural Design (5)	4	-	12	0902324
0902424	Architectural Design (6)	4	-	12	0902423
0902454	Urban Planning (1)	3	2	3	0902353
0902455	Urban Planning (2)	3	2	3	0902454
0902463	Landscape Architecture	3	2	3	0902324
0902523	Architectural Design (7)	4	-	12	0902424
0901283	Principles of Surveying for Architecture	2	1	3	-
0901243	Structural Mechanics	3	3	-	-
0901253	Introduction to Structural Design	3	3	-	0901242
0902595	Graduation Project Thesis Research *	2	1	3	0902424
0902597	Graduation Project Design	6	-	18	0902595
	Total	103			

*Prerequisite or Co-requisite.

b. Technical Electives: The student chooses 21 credit hours from the following Table.

<i>Course No.</i>	<i>Course title</i>	<i>Cr. Hrs.</i>	<i>Lec.</i>	<i>Prac.</i>	<i>Prereq.</i>
0902137	Building Workshop	3	1	6	
0902427	Interior Architecture	3	3	-	-
0902447	Design and Psychology	3	3	-	-
0902457	Urban Design	3	3	-	-
0902456	Housing Issues	3	3	-	-
0902459	Conservation of Historic Environment	3	3	-	-
0902473	Environmental Control	3	3	-	-
0902481	Local Architecture	3	3		
0902482	Specifications and Quantities	3	3	-	-
0902485	Professional Practice	3	3	-	-
0902487	Project Management	3	3	-	-
0904349	Technology of the Built Environment	3	3	-	-

* Prerequisite or Co-requisite.

II. Free Electives: (0) Credit Hours

1. Architectural Department course plan by semester.

First Year

First Semester			Second Semester		
<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>	<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>
0301101	Calculus (1)	3	0301102	Calculus (2)	3
0302101	General Physics (1)	3	0902122	Basic Design (2)	4
0302111	General Physics Lab.(1)	1	0902115	Architectural Drawing & Presentation	3
1900100	Computer Skills (1)	3	1901102	Computer Skills (2)	3
0902113	Free Hand Sketching (1)	1	0902114	Free Hand Sketching (2)	1
0904131	Engineering Drawings & Descriptive Geometry	3	0906115	Engineering Workshop	1
0902121	Basic Design (1)	4			
	Total	18		Total	15

Summer Semester

<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>
	University Elective	3
	University Mandatory	3
	Total	6

Second Year

First Semester			Second Semester		
<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>	<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>
0902223	Architectural Design (1)	4	0092224	Architectural Design (2)	4
0902233	Building Construction (1)	3	0902234	Building Construction (2)	3
0902243	History & Theory of Architecture (1)	3	0902244	History & Theory of Architecture (2)	3
0902201	Computer Architectural Drawing	2	0901253	Introduction to Structural Design	3
0966201	Technical Writing	1	0902213	Architectural Communication Skills	2
0901243	Structural Mechanics	3		University Mandatory	3
	Total	16		Total	18

Summer Semester

<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>
	Department Elective	3
0901283	Principles of Surveying for Architecture	2
	Total	5

Third Year

First Semester			Second Semester		
<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>	<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>
0902323	Architectural Design (3)	4	0902324	Architectural Design (4)	4
0902335	Building Construction (3)	3	0902336	Working Drawings	3
0902343	History & Theory of Architecture (3)	3	0902344	History & Theory of Contemporary Architecture	3
0902371	Illumination and Acoustics	3		Department Elective	3
0902353	Building Legislation	3		Department Elective	3
	Total	16		Total	16

Forth Year

First Semester			Second Semester		
<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>	<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>
0902423	Architectural Design (5)	4	0902424	Architectural Design (6)	4
0902454	Urban Planning (1)	3	0902455	Urban Planning (2)	3
0902463	Landscape Architecture	3	0902341	Architectural Analysis & Criticism	3
	Department Elective	3	0901421	Engineering Economics	3
	Department Elective	3		Department Elective	3
	Total	16		Total	16

Fifth Year

First Semester			Second Semester		
<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>	<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>
0902523	Architectural Design (7)	4	0902597	Graduation Project Design	6
0902595	Graduation Project Thesis Research	3		Department Elective	3
	University Elective	3		University Mandatory	3
	University Mandatory	3		University Mandatory	3
	University Mandatory	3			
	Total	16		Total	15

Architectural Department

B.Sc. Course Description

0902113 Free Hand Sketching (1) 1 Credit Hour

Prerequisite: None

Perception of architectural and artistic objects, volumes, textures, colours 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.

0902114 Free Hand Sketching (2) 1 Credit Hour

Prerequisite: 0902113

Basic techniques of graphics and painting which render means of documenting visual, artistic and architectural compositions. Principles of composing and structuring two and three-dimensional configurations. Abstract plastic models of architectural and structural compositions. Rendering techniques including pencil, ink and water colours.

0902115 Architectural Drawing & Presentation 3 Credit Hours

Prerequisite: 0904131 (or concurrent)

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.

0902121 Basic Design 4 Credit Hours

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.

0902201 Computer Architectural Drawing 2 Credit Hours

Prerequisite: 0902115

The role of computer in architectural applications. The use of CAD software in the production of 2D design and detailed drawings and applications.

0902213 Architectural Communication Skills 2 Credit Hours

Prerequisite: 0902115

Contemporary means of architectural communication so as to develop, the artistic ability and capability of handling visual compositions. Applications using computer software and means of information technology in architectural communication. Applying contemporary techniques and expressions including virtual reality on examples of plastic art and other design concepts.

0902223 Architectural Design (1) 4 Credit Hours

Prerequisite: 0902121

Introduction to architectural design principles. Applications including different visual forms.

Emphasising the role of function and structure on architecture. Design of an elementary architectural project on a plain plot of land.

0902224 Architectural Design (2) 4 Credit Hours**Prerequisite: 0902223**

Design of buildings with an integrated programme 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 climatisation.

0902233 Building Construction (1) 3 Credit Hours**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.

0902234 Building Construction (2) 3 Credit Hours**Prerequisite: 0902233**

Building components, construction techniques and finishing details. Walls, partitions, slab roofs (flat and slanted), floors, staircases, and fenestration. Advanced damp proof courses and materials. Heat and noise insulation systems. Prefabricated construction and building elements.

0902243 History & Theory of Architecture (1) 3 Credit Hours**Prerequisite: None**

Introduction to history of art and architecture, and their development through the ancient civilisations 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. View points of various progressive theoreticians.

0902244 History & Theory of Architecture (2) 3 Credit Hours**Prerequisite: 0902243**

The development of art and architecture through Early Christian era, Byzantine, Romanesque, Gothic and Renaissance. Comparative analysis of historical building types from Byzantine through classical revivalism in Europe and the United States. Relevant theories of architecture and arts.

0902311 Computer Applications in Architecture 3 Credit Hours**Prerequisite: 0902201**

Two and three-dimensional architectural drawings. Production of architectural presentation and rendering of drawings with static and animated images using relevant computer software.

Examples of basic architectural details and workshop drawings.

0902323 Architectural Design (3) 4 Credit Hours**Prerequisite: 0902224**

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.

0902324 Architectural Design (4) 4 Credit Hours

Prerequisite: 0902323

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.

0902335 Building Construction (3) 3 Credit Hours**Prerequisite: 0902234**

Types of modern materials for cladding and finishing of buildings. Kitchen fittings, 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.

0902336 Workshop Drawings 3 Credit Hours**Prerequisite: 0902335**

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.

0902337 Building Workshop 3 Credit Hours**Prerequisite: 0902234**

Building sites under construction. Preparation of technical reports with analysis of local construction technology and implementation techniques. Application of small-scale projects.

0902343 History & Theory of Architecture (3) 3 Credit Hours**Prerequisite: 0902244**

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.

0902344 History & Theory of Contemporary Architecture 3 Credit Hours**Prerequisite: 0902343**

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.

0902371 Illumination and Acoustics 3 Credit Hours**Prerequisite: None**

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.

0902423 Architectural Design (5) 4 Credit Hours**Prerequisite: 0902324**

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.

0902424 Architectural Design (6) 4 Credit Hours

Prerequisite: 0902423

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.

0902427 Interior Architecture 3 Credit Hours

Prerequisite: None

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

0902441 Architectural Analysis & Criticism 3 Credit Hours

Prerequisite: None

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.

0902453 Building Legislation & Planning 3 Credit Hours

Prerequisite: 0902324

Introduction to building legislation, regulations and codes governing building in cities and villages in Jordan. Impact of the application of norms and codes on the architectural design.

Environmental, social and economic constraints on the planning process. Principles and methods of planning. Land use planning applied in cities and its relationship with legislation and building by laws.

0902454 Urban Planning 3 Credit Hours

Prerequisite: 0902453

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.

0902455 Urban Design 3 Credit Hours

Prerequisite: None

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.

0902456 Housing Issues 3 Credit Hours

Prerequisite: None

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 socio-economic and human issues.

0902459 Conservation of Historic Environment 3 Credit Hours

Prerequisite: None

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.

0902463 Landscape Architecture 3 Credit Hours

Prerequisite: 0902324

The eco-system and environmental equilibrium. Natural forces affecting small and large-scale sites. History of gardens and their evolution through civilisations 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.