

Department of Architecture

Faculty of Engineering & Technology
The University of Jordan

B.Sc. Curriculum

2005-2006

Department of Architecture B.Sc. Curriculum

a. Introduction:

The student is required to complete 174 credit hours as follows:

No.	Requirements	Credit Hours
1.	University Requirements	27
2.	Faculty Requirements	23
3.	Department Requirements	124
Total		174

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
Mechatronics 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:** 12 credit hours as follows:

b. **Elective Requirements:** 15 credit hours chosen by the student from the following table.

a. Mandatory Requirements: 12 credit hours as follows:

Course No.	Course Title	Cr. Hours
2200100	Military Sciences	3
1501100	Communication Skills / Arabic	3
1502100	Communication Skills / English	3
2300100	National Education	3

b. Elective Requirements: 15 credit hours chosen by the student from the following tables

The First Area: Human Sciences (3-6 credit hours)

Course Number	Course Title	Credit hours
0401100	Islamic Culture	3
0402100	Islamic System	3
0807100	Introduction to Library and Information Science	3
1032100	Human Rights	3
1041100	Legal Culture	3
1132100	Sports and Health	3
1601105	Management Skills	3
2001100	Artistic Taste	3
2200103	Foreign Language	3
2301100	Creative Writing	3
2302102	Human Civilizations	3

The second Area: social and economic sciences (3-6 credit hours)

Course Number	Course Title	Credit hours
1052100	Jerusalem City	3
1605100	Introduction to E- Trading	3
1607100	The Global Political Economy	3
2302104	History of Jordan and Palestine	3
2303100	Logic and Critical Thinking	3
2304100	Geography of Jordan	3
2305100	Introduction to Sociology	3
2307100	The Principles of Psychology	3
2308100	Principles of Policy	3
2601100	Jordan Archaeology	3
2701100	Principles of Social Work	3

The third area (science, technology, agriculture and health) (3-6 credit hours)

Course Number	Course Title	Credit hours
0305100	Ecology	3
0342100	Science and Society	3
0505100	Principles of General Health	3
0603100	Principles of Human Nutrition	3
0641100	Home Plantation	3
0710100	First Aid	3
0905100	Principles of General Safety	3
0905101	Jordanian Industries	3
1904100	Social Media	3

II. Faculty Requirements: 23 mandatory credit hours:

a. Mandatory Requirements: 23 credit hours as follows:

b. Elective Requirements: None

a. Mandatory Requirements: 23 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	Physics Lab. (1)	1	3	-	0302101 or Co-requisite
0901420	Engineering Economy	3	-	3	Finished 90Cr. hr.
0904131	Engineering Graphics	3	2 Drawing 2 Computer	2	-
0966111	Engineering Workshops	1	3	-	-
0966201	Technical Writing	1	-	1	1502102
1931102	Computer Skills	3	-	3	1902099- 1901098
0908200	Introduction to Engineering	2	-	2	-
0900010	University Skills and Ethics	0			

b. Elective Requirements: None

I. 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>
0942113	Free Hand Sketching (1)	1	-	3	-
0932114	Free Hand Sketching (2)	1	-	3	0942113
0992115	Architectural Drawing & Presentation	3	1	4	0904131*
0992121	Basic Design (1)	4	-	8	-
0972122	Basic Design (2)	4	-	8	0992121
0932201	Computer Architectural Drawing	2	1	2	0992115*
0932213	Architectural Communication Skills	2	1	2	0992115
0932223	Architectural Design (1)	4	-	8	0972122
0932224	Architectural Design (2)	4	-	8	0932223
0932233	Building Construction (1)	3	2	2	-
0932234	Building Construction (2)	3	2	2	0932233
0902243	History & Theory of Architecture (1)	3	3	-	-
0902244	History & Theory of Architecture (2)	3	3	-	0902243
0942323	Architectural Design (3)	4	-	8	0932224
0942324	Architectural Design (4)	4	-	8	0942323
0902335	Building Construction (3)	3	2	2	0932234
0902336	Working Drawings	3	2	2	0902335
0962341	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	-	0942324
0932371	Illumination and Acoustics	3	2	2	-
0902423	Architectural Design (5)	4	-	8	0942324
0902424	Architectural Design (6)	4	-	8	0902423
0932454	Urban Planning (1)	3	2	2	0902353
0932455	Urban Planning (2)	3	2	2	0932454
0902463	Landscape Architecture	3	2	2	0942324
0932523	Architectural Design (7)	4	-	8	0902424
0941283	Principles of Surveying for Architecture	2	1	2	-
0901242	Structural Mechanics	3	3	-	-
0901253	Introduction to Structural Design	3	3	-	0901242
0902595	Graduation Project Thesis Research	2	1	2	0902424
0902597	Graduation Project Design	6	-	12	0902595

*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	4	-
0902427	Interior Architecture	3	3	-	-
0932447	Design & 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	-	-
0952481	Local Architecture	3	3	-	-
0902482	Specifications & Quantities	3	3	-	-
0902485	Professional Practice	3	3	-	-
0932487	Project Management	3	3	-	-
0934349	Technology of the Built Environment	3	3	-	-

*Prerequisite or Co-requisite.

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	1931102	Computer Skills	3
0302111	Physics Lab (1)	1	0966111	Engineering Workshop	1
0942113	Free Hand Sketching (1)	1	0932114	Free Hand Sketching (2)	1
0904131	Engineering Drawings & Descriptive Geometry	3	0992115	Architectural Drawing & Presentation	3
0992121	Basic Design (1)	4	0972122	Basic Design (2)	4
	University Elective	3	0908200	Introduction to Engineering	2
	Total	18		Total	17

Summer Semester

<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>
1501100	Communication Skills / Arabic	3
1502100	Communication Skills / English	3
	University Elective	3
	Total	9

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>
0932223	Architectural Design (1)	4	0932224	Architectural Design (2)	4
0932233	Building Construction (1)	3	0932234	Building Construction (2)	3
0902243	History & Theory of Architecture (1)	3	0902244	History & Theory of Architecture (2)	3
0932201	Computer Architectural Drawing	2	0932213	Architectural Communication Skills	2
0901242	Structural Mechanics	3	0901253	Introduction to Structural Design	3
0966201	Technical Writing	1	2300100	National Education	3
	Total	16		Total	18

Summer Semester		
<i>Course No.</i>	<i>Course Title</i>	<i>Cr. Hrs.</i>
	Department Elective	3
0941283	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>
0942323	Architectural Design (3)	4	0942324	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
0932371	Illumination and Acoustics	3		Department Elective	3
0902353	Building Legislation	3		Department Elective	3
	Total	16		Total	16

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

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
0932454	Urban Planning (1)	3	0932455	Urban Planning (2)	3
0902463	Landscape Architecture	3	0962341	Architectural Analysis & Criticism	3
	Department Elective	3	0901421	Engineering Economics	3
	Department Elective	3		Department Elective	3
	Total	16		Total	16

Summer Semester: The student is required to undertake practical training for 8 weeks after finishing the total of 120 credit hours

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>
0932523	Architectural Design (7)	4	0902597	Graduation Project Design	6
0902595	Graduation Project Thesis Research	3		Department Elective	3
2200100	Military Sciences	3			
	University Elective	3			
	Total	12		Total	9

B.Sc. Course Description

Department Mandatory Requirements:

0942113 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.

0932114 Free Hand Sketching (2)

1 Credit Hour

Prerequisite: 0942113

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.

0992115 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.

0992121 Basic Design(1)

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.

0972122 Basic Design(2)

4 Credit Hours

Prerequisite: 0992121

An introduction to architectural design. Relation between architectural spaces and the surroundings. Entrances and in-out relation. Relation between 2D and 3D .

0932201 Computer Architectural Drawing

2 Credit Hours

Prerequisite: 0992115

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

0932213 Architectural Communication Skills

2 Credit Hours

Prerequisite: 0992115

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.

0932223 Architectural Design (1)**4 Credit Hours****Prerequisite: 0972122**

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.

0932224 Architectural Design (2)**4 Credit Hours****Prerequisite: 0932223**

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.

0932233 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.

0932234 Building Construction (2)**3 Credit Hours****Prerequisite: 0932233**

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.

0942323 Architectural Design (3)**4 Credit Hours****Prerequisite: 0932224**

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.

- 0942324 Architectural Design (4)** **4 Credit Hours**
Prerequisite: 0942323
 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: 0932234
 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.
- 0902336 Working 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.
- 0962341 Architectural Analysis & Criticism** **3 Credit Hours**
Prerequisite: 0902244
 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.
- 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.
- 0902353 Building Legislation** **3 Credit Hours**
Prerequisite: 0942324
 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.
- 0932371 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: 0942324**

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.

0932454 Urban Planning (1)**3 Credit Hours****Prerequisite: 0902353**

Introduction to the environmental, economic and social aspects necessary in the formation of an urban planning process, definition of the characteristics of the urban fabric, and the evolution of the city and its components as an organic interdependent and complementary functions unit. Social services and infrastructure in the city and develop planning standards. Measure the effectiveness of social services and infrastructure through reality study of one existing urban areas.

0932455 Urban Planning (2)**3 Credit Hours****Prerequisite: 0932454**

Application on realistic projects from local environment and their relationship to modern theories in the planning, Introduction to methods of statistical analysis, documentation of buildings, analysis of the physical and social characteristics as well as to identify the specific planning software, such as geographic information systems GIS.

0902463 Landscape Architecture**3 Credit Hours****Prerequisite: 0942324**

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.

0932523 Architectural Design (7)**4 Credit Hours****Prerequisite: 0902424**

Design of building or mixed use complex within urban Fabric. Focus on building systems and design within context. Impact of the building design on the urban fabric .

0902595 Graduation Project Thesis Research**2 Credit Hours****Prerequisite: 0902424**

Student chooses an integrated architectural project and collect and analyze statistical , physical and architectural data for the preparation of program and area calculations of the different elements of the project. Also doing the site analysis and case studies that helps in preparing the final thesis of the project

0902597 Graduation Project design**6 Credit Hours****Prerequisite: 0902595**

Completing the design for the project that been studied in the graduation Project thesis. From the conceptual design stage to the final complete architectural design. Comprehensive design for interior and exterior of the project. Design should include all the building systems and the landscape design. Complete architectural drawings and models should be delivered at the final submission.

Elective Department Requirements:

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.

0932447 Design & Psychology

3 credit hours

Prerequisite: None

Environmental psychology issues. Relation between built environment and user behavior. Different aspect of perception.

0902457 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.

0902459 Environmental Control

3 Credit Hours

Prerequisite: None

Introduction to renewable energy (solar, wind, biogas, etc ...) and their role in the sustainable design. utilization of natural ventilation and lighting in the building.. Smart buildings principles. Implantation of renewable energy in the building .

0952481 Local Architecture

3 credit hours

Prerequisite: None

The course deals with study of vernacular and regional architecture in the Arab countries; forces of effecting forms, physical, social, economic, technological and aesthetic; emphasis on vernacular architecture in Arab word and Jordan in particular to assess constants in architecture language: contemporary attempts to achieve identity.

0902485 Professional Practice

3 credit hours

Prerequisite: None

Different aspects of architectural practice. professional , legal, and administrative issues related to architecture.

0932487 Project Management**3 credit hours****Prerequisite: None**

Principles of project management, the role of planning and management in construction. Introduction to Project stages and phasing, schedule of work, cost control, quality insurance, safety, feasibility studies and finance.

0902137 Building Workshop**3 Credit Hours****Prerequisite: None**

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

0902482 Specifications & Quantities**3 credit hours****Prerequisite: None**

Detailed description of all architectural works and specifications, preparing bill of quantities according to general specifications and conditions,