

Course Brief Description – Procedures of the Course Plan Committee/

Department of Architecture

QF10/0409-3.0

Department

Department of Architecture

Faculty Requirements:

Prerequisite	Credit Hours	Course Name	Course No.
-	3	General Math	0120199
<p>Enhance the ability of students to draw freehand, without the assistance of drawing instruments (ruler, compass, etc.), while maintaining proportions of objects and buildings. Develop students` ability to analyze (through their own perceptions) different three-dimensional objects and fields to generate two-dimensional drawings. Enable students to communicate and deliver ideas through drawing. Develop students` sense of composition and proportion. Build up different freehand drawing presentation skills, as students construct a dynamic portfolio of drawings using different coloring media (charcoal, ink, water colors, etc.) and mixed media that also incorporate the visual principals of design.</p>			
Prerequisite	Credit Hours	Course Name	Course No.
-	3	Free hand sketching	1004151
Prerequisite	Credit Hours	Course Name	Course No.
-	3	General physics 1	0120131
Prerequisite	Credit Hours	Course Name	Course No.
0120199	2	Surveying for architecture	1001221
<p>The course is organized in two successive formats. This is the first format which introduces the students to surveying principles and techniques: topographic mapping, route surveying, measurement of distances, triangulation, taping errors, corrections, differential and cross sectional leveling, compass use, measuring heights, elevations, computing angles (amplitude, azimuth), construction and topographic surveys, using traditional and advanced techniques.</p>			
Prerequisite	Credit Hours	Course Name	Course No.
042123	3	Research skills and technical writing	1003213
<p>Training students to prepare formal correspondences and professional reports. The course also guides them to prepare and deliver expressive and effective verbal presentations. Both types are needed in pre-design & design report writing as well as in jury presentations. Demonstration exercises of the described topics are essential to develop students` skills and understanding.</p>			
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Prerequisite	Credit Hours	Course Name	Course No.
-	3	Theories and design principles	1001415
<p>Study the most important schools and modern theories of design in General with emphasis on architectural and graphic design, and how to use it to develop design thinking for design works. Students learn different methodologies and diverse methods which constitute the design process. The course introduces students to design methods and design process, components and outputs. The course deal with design theory that has been approached and interpreted in many ways, from personal ideas of design principles, through constructs of the philosophy of design to a search for a design science.</p>			
<p>Mandatory Major Requirements:</p>			
Prerequisite	Credit Hours	Course Name	Course No.
-	3	Architectural drawings	1001192
<p>This course aims to enable students from the acquisition of basic skills in drawing through a series of exercises in the studio, and lectures to understand drawing skills using drawing equipment (scale, triangle, compass, and templates) as the language of drawing and the role it plays in communication of design work. Introduction to various techniques of architectural drafting, expressions and projection of different forms and shapes of buildings to prepare architectural plan, elevation, section and perspective by using Engineering Tools.</p>			
Prerequisite	Credit Hours	Course Name	Course No.
-	3	Basic design	1001173
<p>A design studio intended to introduce students to the principles of aesthetic appreciation, elements and basic methods of design. Introduction to two and three-dimensional configurations through model building using different experimental materials to implement imaginative and conceptual forms.</p>			
Prerequisite	Credit Hours	Course Name	Course No.
1001173	3	Basics of architectural design	1001174
<p>A design studio intended to introduce students to spatial design through basic design principles during studio time. It emphasizes on the relation between the abstract geometric forms, which represent the idea and the actual architectural forms, spaces, needs and circulation. The student will learn various methodologies used in the design process and expressing their ideas related to design values. Model building using different experimental materials to implement imaginative forms.</p>			
Prerequisite	Credit Hours	Course Name	Course No.
1001192	2	Architectural communication and presentation	1001193
<p>Basic knowledge of the factors that affect design drawing presentation tools such as light, texture, color, and other issue. Introduction to the concepts of shade and shadow as a presentation tool. Building technical presentation skills through drawing proper presented</p>			

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plans, elevations and sections including elements such as doors and windows, stairs, furniture, sanitary units etc... Building technical drawing and presentation perspective skills to include internal and external perspective techniques and the way to deliver full presented three-dimensional drawings.

Prerequisite	Credit Hours	Course Name	Course No.
1001174	4	Architecture design 1	1001273

A design studio focused on the development of analytical and technical skills for perceiving, understanding, and manipulating spatial definitions and relationships. The basic architectural principles used in designing and analyzing the building as a complete architectural product with actual functions and site. It aims at training the students to develop their architectural design sense and to use a methodology of critical thinking as a reference in the design process to produce architectural concepts

Prerequisite	Credit Hours	Course Name	Course No.
0120199	3	Structural systems	1001223

General comment on construction courses:

- Construction One (Preliminary course): about the common post-and-beam concrete building; its skeleton, elements and construction process, with site visits.
- Construction Two (Intermediate course): about Structural systems (shells, trusses, space frames, tensile... etc.) with explanatory examples of their utilization in architecture.

Construction Three (Advanced course): about architectural material, finishes and details; either in architecture, ID or landscape.

Prerequisite	Credit Hours	Course Name	Course No.
1001174	3	Design Modeling	1001212

Pre-design studies and methods of problems understanding and site studies analysis within context considerations. Architectural and facilities programming. Fundamental concepts and models of architectural problem solving.

Prerequisite	Credit Hours	Course Name	Course No.
1001273	3	Building construction	1001224

A course on the basic domain knowledge for introducing the construction stages tools, equipment's, terminologies and media for presenting, and communicating construction informative illustrations. It offers also a basic knowledge on methods to understand the response of building physical envelopes to surrounding environmental factors, covering the components of site investigation, preparation, and excavation and for the building envelope to include the construction of foundations, floors, walls, doors, windows, and roofs of various types and construction requirements. This course is also an introduction to construction detailing.

Prerequisite	Credit Hours	Course Name	Course No.
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1001273	4	(2) Architecture design	1001274
<p>A design studio with emphasis on construction materials as a major design determinant; manipulation of architectural elements and space in multi-function projects. Logical thinking and design methodology as a problem-solving strategy that is based on problem facts is the core of this approach. Train the student on conducting pre-design studies and analysis as a critical input to the design process through a group of simple themed projects. The skills of freehand and technical representation will be observed.</p>			
Prerequisite	Credit Hours	Course Name	Course No.
1002141	3	Computer applications in architecture	1001251
<p>Training students to apply the different computer techniques in presenting the different architectural drawings. This is done through a collection of practical exercises that deal with presenting the 3D drawings and enrich the student's computer drawing skills through using many visual communication and presentation programs as a tool to implement their architectural concepts, ideas and drawings.</p>			
Prerequisite	Credit Hours	Course Name	Course No.
1001274	3	Building services	1001326
<p>This course introduces the design logic and the operating mechanisms and details for building utilities systems. It offers basic knowledge on climate control, water supply, drainage and waste management, electrical supply, daylight utilization and illumination distribution, vertical and horizontal mechanical circulations (elevators, escalators ...etc.), controlling environmental pollutants, noise control, and life and health safety monitoring and controlling. It also emphasizes on issues related to design and methods of heating, ventilating, air circulation and conditioning systems for buildings (HVAC). Natural and artificial lighting for buildings. The offered utilities systems are also introduced in relation with sustainability, mechanisms smartness, performance efficiency, building appearance, and construction cost.</p>			
Prerequisite	Credit Hours	Course Name	Course No.
1001174	3	History and theory of architecture (1)	1001313
<p>The course will explain the medieval architectural phases of Early Christian, Byzantine, Romanesque and Gothic, in addition to explain Renaissance, Baroque and Rococo. The criteria of each style will be highlighted, with a comparison process that enables the student to distinguish between various styles. Analysis of the historical, political, philosophical and social backgrounds will take place where relevant. The course will discuss examples of the works of selected pioneering architects in each phase.</p>			
Prerequisite	Credit Hours	Course Name	Course No.
1001274	5	Architecture design (3)	1001375
<p>This design studio introduces projects that deal with complex architectural programs. It</p>			

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develops the student's response to design challenges through projects that deal with different environments, scales and venues (level and sloping sites, new construction, renovation). The studio also stresses on the skill of employing a variety of architectural styles.

Added to D2: History/ style/ site topography/ environmental context

Prerequisite	Credit Hours	Course Name	Course No.
1001251	3	Simulation and architectural modeling	1001352

This course provides the knowledge and skills for initiating and producing working designs in the form of parametric design iterations, building information models (BIM), algorithmic modeling, and interoperability. The course emphasizes on using of computational algorithms and information models while at same time monitoring the integration of structural behavior, environmental systems simulations with the interactive involvement of construction materials and architectural detailing. The integrity between different types of architectural entities, elements, specifications, and construction techniques is also exercised.

Prerequisite	Credit Hours	Course Name	Course No.
1001274	3	Working drawings (1)	1001381

This course of combined lectures and Studios offers basic building construction knowledge for the logic and technologies involved in the appropriate choice of building materials, structural systems, and the construction processes. It also introduces basic tools and methods for anticipating behavior and for illustrating and communicating working information. This course basic subjects deal with the construction site and the building envelop with its Substructure and Superstructure systems that include Foundations, Floors Walls, roofs and the knowledge involved in moisture and thermal protection.

Prerequisite	Credit Hours	Course Name	Course No.
1001313	3	History and theory of architecture (2)	1001314

The course covers the architectural styles spanning from Industrial Age, Modern into the Contemporary Architecture. It also discusses the International Style, Post Modern and Contemporary movements in international architecture. Comparison between these lines is necessary to enable the student to comprehend the criteria of each and to distinguish between them. Analysis of the historical, political, philosophical and social backgrounds will take place where relevant. The course will discuss examples of the works of selected pioneer architects in each phase.

Prerequisite	Credit Hours	Course Name	Course No.
1001274	3	Architecture and environmental control	1001341

The course introduces understanding and assessment methods for the physical environment

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with emphasis on climate factors affecting Human comfort zones and the optimized performance of the built environment. The climate factors include the atmosphere and its related phenomena, renewability of energy sources, natural and mechanical environmental controls at the scale of the building, the urban scale and the regional. The course elaborates on related subjects and involves factors as in thermal balance, heat gains and losses, wind movement in buildings, formation of condensation, and thermal profile for architectural elements. A variety of control concepts are discussed like sustainable ecological design, open and closed systems, assessment of heat and vapor diffusion in building, applications of passive solar energy and shading device systems, evaporative cooling, and traditional solutions of thermal control in buildings in different climates. The impact on architectural production is introduced also with model cases revealing the concepts of eco-technologies innovations of smart, interactive and responsive controls.

Prerequisite	Credit Hours	Course Name	Course No.
1001375	5	Architecture design (4)	1001376

A design studio that introduces projects that deal with complex architectural programs. Design of buildings will be on broader scale of philosophical and intellectual bases. The aim is mainly to comprehend how contemporary schools of thinking influenced the formation of building forms and the built environment. The application of landscape design and utility systems shall be observed within the student projects.

Added to D3: Landscape/ utility systems/ concept philosophy

Prerequisite	Credit Hours	Course Name	Course No.
1001381	3	Working drawings (2)	1001382

This advanced course that combines lectures and Studios offers more sophisticated building construction knowledge involved in determining the appropriate building materials, systems, and processes. It also offers modeling tools and methods for simulating behavior and methods of assembly and for communicating informative and interactive working documents and details. This course basic subject's deal with the systems of fenestrations, entrances and egresses. It deals also with special constructions like vertical circulation elements, fireplaces, chimneys, and kitchen and bathrooms layout and fixtures, and with the finishing work. And at the end, this course supplement with specific notes on materials and offering the criteria for selecting and using a building material.

Prerequisite	Credit Hours	Course Name	Course No.
1001375	2	Landscape architecture	1001431

Studying Landscape architecture as a multi-disciplinary field, incorporating aspects of botany, horticulture, the fine arts, architecture, industrial design, geology and the earth

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sciences, environmental psychology, geography, and ecology. The activities of a landscape architect can range from the creation of public parks and parkways to site planning for campuses and corporate office parks, from the design of residential estates to the design of civil infrastructure and the management of large wilderness areas or reclamation of degraded landscapes such as mines or landfills. Landscape architects work on all types of structures and external space – large or small, urban, suburban and rural, and with "hard" (built) and "soft" (planted) materials, while paying attention to ecological sustainability.

Prerequisite	Credit Hours	Course Name	Course No.
1001341	3	Green architecture	1001442

This course addresses the evolution of architecture and design adapting to the issue of climate change and zero-emission standards in the design environment. This seminar-based course will expand the notions of the term "sustainability" in the built environment while questioning its integration in the design and building process. Students also investigate sustainability in architecture in terms of historical precedents, vernacular architecture and climate-responsive design. The course also focuses on different sources of renewable energy that can be used in buildings like wind, solar and biomass as potential sources of energy available in Jordan.

Prerequisite	Credit Hours	Course Name	Course No.
1001376	5	Architecture design (5)	1001477

The architectural design of buildings within a context, with emphasis on urban settings. Selected locations within urban fabric may diverse between locations in central urban areas or other locations where an urban design practice is needed prior to the design of individual buildings. The course employs a professional approach where the brief and requirements of the project are formulated by the students as a result of existing architectural and socio-economic analysis of the study area. The course also focuses on identity aspects and landscape architecture.

Added to D4: Identity/ context forces (urban)/ social effects/ landscape architecture.

Prerequisite	Credit Hours	Course Name	Course No.
1001313	3	Planning and urban design	1001432

Prerequisite	Credit Hours	Course Name	Course No.
1001313	3	Conservation of architectural heritage	1001433

The course introduces the student to the theme of architectural heritage and its appreciation via considering its cultural and socio-economic various values. A review of the local architecture of Jordan takes place, which includes the heritage architecture styles, material,

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construction techniques and historical influences. The student comprehends combining building values into classifying it as a cultural resource. The student is exposed to the various conservation interventions; including documentation, field survey, listing of heritage buildings, conservation techniques and methods applicable to local and international case studies.

Prerequisite	Credit Hours	Course Name	Course No.
1001313	3	Islamic Architecture	1001416

Introduction to Islamic Architecture and architectural styles depending on the time and place in both religious and civil architecture with a focus on the effects of social and functional, environmental and cultural influences that played key roles in the formation of the architecture of the Islamic world. An analysis of Architectural characteristics, Islamic city and the traditional urban fabric by studying spatial and functional patterns space. Analysis of significant architectural theories that lead to the formation of the architectural elements, and then how to employ them in the relevant architectural designs which require emphasis on the architectural identity of the Muslim societies.

Prerequisite	Credit Hours	Course Name	Course No.
1001375	2	Building legislations and professional practice	1001461

This course introduces regulations, legislations, codes and responsibilities related to professional practice in architecture and construction. The course gives special attention to the architect's technical, administrative and financial responsibilities when interacting with officials, clients, other involved consultants, venders and contractors. Information related to the organization of the architectural office, professional services of the architect, contract negotiation are also introduced with emphasis on the principles and ethics of the profession. The course also concerns with the operational issues related to resources management, monitoring, marketing, project delivery.

Prerequisite	Credit Hours	Course Name	Course No.
1001477	5	Architecture design (6)	1001478

Advanced design of complex buildings to approach quality building performance, and to conform to building codes and regulations. A complicated functional program is developed for the purpose of high-level design process. Students are expected to apply knowledge acquired in building construction and environmental studies to the design process, to approach an environmental integrated design solution. Added to D5: Building performance/ building codes /planning regulations.

Prerequisite	Credit Hours	Course Name	Course No.
1001382	3	Specifications and quantities	1001562

This course introduces the methods, procedures and requirements for the preparations of feasibility studies and tender documents with the descriptions, requisites, quantifications and specifications of building materials for design and construction of architectural projects. The course covers the preparations of tender technical documents, contracts and specifications

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of building materials in terms of quantity, manufacturing level, and methods of application with emphasis on representation through specification writing; preparation of bills of quantities; measurement systems, cost estimating; and legal and managerial issues utilizing scripts, tables and charts. Individual and team projects are to be adopted.

Prerequisite	Credit Hours	Course Name	Course No.
1001562	3	Project management	1001563

The course introduces the student to the topic of project management, and its role in leading production endeavors into success in achieving the required goals. It shows the rank of the project as a production tool within other tools. It explains on framework of the topic and its themes, showing its wide application on various fields, with emphasis on the construction industry. It also elaborates the lifecycle, the process groups and the knowledge areas related to the topic, showing professional criteria to measure the project's success. A special emphasis shall take place on project main constraints; scope, time and cost, highlighting architectural projects. Other important knowledge areas will be briefed upon relevancy, such as quality, human resource, communication and risk.

Prerequisite	Credit Hours	Course Name	Course No.
1001375 and Passing 90 credit (8 weeks)	3	Engineering practical training	1001401

Training for 8 weeks inside Jordan or 6 weeks outside Jordan in a recognized consulting architectural office on architectural design and site supervision of projects or consultation studies in architectural offices subject to approval of the training committee of the department.

Prerequisite	Credit Hours	Course Name	Course No.
1001478 Passing 120 credit	2	Graduation project (1) thesis research	1001501

Producing an advanced project program, to be employed in developing the initial project concept. The students are required to select project topics in accordance with graduation level regarding complexity and size. Orientation of student to adapt and conduct a total methodology in programming project requirements, goals and objectives, analysis and synthesis, which consider aesthetic and philosophical factors. To improve technical writing abilities for design purposes. Submissions include the research works in addition to the initial project concept, each to be evaluated distinctly. Finally, all submissions to be compiled in the form of a thesis volume(s).

Prerequisite	Credit Hours	Course Name	Course No.
1001501	6	Graduation project (2)	1001502

Design development of the graduation project, as per the conclusions approached in Graduation Project (1). It starts with the adaptation and development of design concept in coordination with student supervisor. The submissions include various stages with Jury evaluation format. The project requires emphasis on the cumulative knowledge of the graduate student regarding architecture history and theories, structure and other building systems, in addition to other environmental aspects. Final submission includes a complete set of drawings and details, in addition to three-dimensional presentations and models.

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Major Electives (3) Credit Hours

Prerequisite	Credit Hours	Course Name	Course No.
1001432	3	Advanced urban design	1001533

This course introduces advanced theories of urban design. It examines theories and policies of urban regeneration, revitalization, recycling, etc. that affect the physical design of the urban environment. It tackles local, regional and international cases.

Prerequisite	Credit Hours	Course Name	Course No.
As specified by the department	3	Specialized topics in architecture	1001503

The department will offer specialized courses in architecture vary with nature of topic with special interest to undergraduates subjected to departmental approval. It deals with diverse special new topics in architecture.

Prerequisite	Credit Hours	Course Name	Course No.
1001467	3	Building legislations and professional practice	1001564

This course introduces regulations, legislations, codes and responsibilities related to professional practice in architecture and construction. The course gives special attention to the architect's technical, administrative and financial responsibilities when interacting with officials, clients, other involved consultants, venders and contractors. Information related to the organization of the architectural office, professional services of the architect, contract negotiation are also introduced with emphasis on the principles and ethics of the profession. The course also concerns with the operational issues related to resources management, monitoring, marketing, project delivery.

Prerequisite	Credit Hours	Course Name	Course No.
1001223	3	Building materials	1001226

Prerequisite	Credit Hours	Course Name	Course No.
1001376	3	Interior design	1001479

This course covers the relationship between the design of the architectural interior environment and its impact on users and their perception of space. Focusing on the compatibility between the various factors of the space such as color, style, texture, shade, shade, lighting as well as the interior furniture and choosing the appropriate materials to create the interior environment of the building. This course also deals with the study of interior design of spaces with different functions (residential, commercial, educational, health, tourism...etc.). In addition to developing knowledge of a range of traditional and contemporary materials and processes and how they are applied in furniture design, its methods and techniques, craftsmanship and its relationship to human standards, with an emphasis on the close relationship between the human personality. Furniture design and

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functionality of interior space.

Prerequisite	Credit Hours	Course Name	Course No.
1001477	3	Housing	1001536

The student learns about the social and economic aspects affecting spatial planning of housing, housing, urban expansion, population and shelter, in addition to housing policies for housing the poor, as well as learning about the perspective of the housing problem in third world countries, and the housing problem in Jordan and the world. And actual experience in solving this problem. Students must understand the diverse needs, values, behavioral standards, physical capabilities, social and spatial patterns that characterize different cultures and individuals, and the architect's responsibility to ensure equal access to sites, buildings and structures. Students also gain the ability to respond to site characteristics, including urban context and development typologies, historic fabric, soils, topography, ecology, climate, and building orientation, in developing the project design.

Prerequisite	Credit Hours	Course Name	Course No.
1001352	3	Architecture virtual reality	1001553

Students learn how to view, view and interact with architectural designs in virtual reality (VR) via contemporary visualization software such as Unreal Engine, producing and displaying the design using industry-standard tools and hardware. They prepare an Unreal Engine 4 model for use in virtual reality and learn how to provide interaction with the model to immerse themselves in and inquire about architectural design through virtual reality.

Prerequisite	Credit Hours	Course Name	Course No.
1001416	3	Proportions and geometry in architecture	1001417

This course is an introduction to how to study, apply and understand proportions based on design principles and architectural proportions, especially relying on geometry in the design process. The course also focuses on presenting, presenting, and analyzing many case studies to emphasize understanding of how these ratios are applied on the ground and to clarify the theories and processes that were used in design, construction, and implementation.

Approved by	(التوقيع والخاتم الرسمي)	اعتمدت من قبل مجلس القسم
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