

Architecture				
Course Code	Course Name	PreRequisite	CH	Course Description
DES 101	Foundation 1	ORN 02R & ORN 02C	2	This is a basic course about the fundamentals of form and graphic design. It teaches the theory and practice of two-dimensional design. Students will learn the basic principles, elements, and concepts of art. This course emphasizes the organization of the two-dimensional design; also it employs basic media, techniques and tools to craftsmanship, composition and problem solving
ARC 101	Basic Design Studio I: Architectural Drawing	ORN 02R & ORN 02C	3	The course introduces the student to basic drawing skills and techniques. Fundamentals of architectural drawing; conventions of graphic representation. Skills of drawing plans, sections, and elevations using orthographic and axonometric projection; all are included in this course
STT 102	Introduction to Statistics	MTH 001	3	This Course gives the students an introduction to some of the basic statistical methods used in practice. It introduces the student to concrete examples of data handling and presents standard techniques for displaying and summarizing data

				sets. Other topics studied: discrete and continuous random variables, normal curves, statistical inference and hypothesis testing. Introducing simple computer programs such as SPSS etc.
ARC 111	Basic Design Studio II: Principles of Design	DES 101, ARC 101, ORN 3R & ORN 3C	3	The course deals with the basic concepts and fundamentals of visualization and the design of simple shapes and forms in two and three dimensions. Presentation, communication and other basic visual skills including modeling are cured out manually.
ARC 112		DES 101, ARC 101, ORN 3R, ORN 3C	2	The course develops the visual perceptive skills of the students. The course introduces the means of communicating simple forms graphically by transforming visual information into two-dimensional images with shade, shadows & perspective.
PHY 102	Physics for Architecture	ORN 04R & ORN 04C	3	The aim of this course is to Supply the students with strong back ground in the field of electricity, magnetism, heat, Forces, gravity and motion, which is really needed to complete their study in the field of architecture. The objectives of this course are also to give better

				<p>understanding to the relation between heat, work and the conservation of energy through thermodynamic cycle. The course is divided into three parts: the first part includes an introduction to static electricity. The second part includes Heat, work and the states of the working fluid-The first and second law of thermodynamics. The third part includes study of forces on the bodies with some exposure to Static.</p>
MEC103	Engineering Mechanics	MTH 001	3	<p>Introduction to mechanics: general principles. Force system: rectangular components of a force, parallelogram law. Equilibrium of a particle: springs and cables. Force system resultant: moment of a force, tranquility of a force, free body diagram. Equilibrium of a rigid body: condition of rigid body equilibrium, equation of equilibrium, two and three internal force member. Structural analysis: simple trusses, the method of joint, zero force members, method of sections, frames and machines. Friction. Moment of inertia</p>
ARC 201	Architectural Design Studio I	ARC 111, ARC 112, ORN 05R & ORN 05C	4	<p>The course is an Introduction to the processes of design through studio projects to</p>

				<p>apply the fundamentals of architectural design development and presentation, with emphases on building form in relation with human scale, activities and furniture as means of creating space. Projects are mainly small scale. Final presentation is manually done</p>
ARC 202	Drawing III : Digital Media 2 D	ARC 112	2	<p>The course introduces 2D digital drafting concepts and techniques using AutoCAD. Knowledge of the software and its application are delivered through lectures and hands-on tutorials.</p>
ARC 203	History of Architecture I	ARC 111, ORN 05R & ORN 05C	2	<p>This course is an introduction to the development of architecture through ages, highlighting the factors that contribute to the development of the unique of various cultures, social-political-technological, military and environmental and the development of structural systems, materials, construction methods and different building types. The courses cover different eras from Ancient Egyptian Architecture to Renaissance Architecture.</p>
ARC 204	Theory of Architecture I	ARC 111, ORN 05R & ORN 05C	2	<p>This course introduces concepts and types of</p>

				<p>theories of architecture, its relationship to function/user needs as bases for architectural design. It defines building elements components and space mass relationship. The course focuses on architectural aesthetics, vocabulary and language of architectural composition, character and style. Building types, standards, and design principles is part of the course.</p>
ARC 205	Theory of Structure	MEC 103, PHY 102 OR PHY 201	2	<p>The course deals with the basic concept of structural analysis techniques, types of structures, loads, supports and reactions. Student learns concepts of equilibrium, stability, calculating centroid, calculating reactions, drawing free-body diagrams, calculating external and internal forces in beams, and trusses. The course also covers calculations of shear and bending moment</p>
ARC 211	Architectural Design Studio II	ARC 201	4	<p>Introduce students to traditional architecture as well as increasing their awareness of the essences and details of such applications. The course focuses on medium scale projects with its functional interactions. Elementary</p>

				<p>projects are carried out. Final project is manually presented.</p>
ARC 212	Drawing IV : Digital Media 3-D & Animation	ARC 202	2	<p>This course introduces different forms of digital representations typically used in architectural projects such as 3D models; computer generated images; animation; and sheet layout design. 3D modeling concepts (i.e., surface, solid, and Building Information Modeling BIM) are introduced and implemented using appropriate software and techniques. Rendering, animation, and printing concepts complements the set of design tools necessary for the creative development of projects and communication with clients and consultants from different disciplines in architectural practice.</p>
ARC 213	History of Architecture II	ARC 203	2	<p>This course examines the formation and development of architecture, art, and urban traditions of the Islamic World. The study includes ideas, cultures and the effect of Shari'a that influenced the formation of the architectural character in Muslim society. Emphasis is on the study of Islamic Architecture in the Arab</p>

				<p>region, Turkey, Persia, India and the Far East of Asia, including important cities such as Cairo, Damascus, and Istanbul. The study emphasis selected examples of religious, civic and residential Islamic Architecture in chronological order.</p>
ARC 214	Theory of Architecture II	ARC 204	2	<p>The course focuses on the development of twentieth-century architecture in the western tradition including its social, technological, and conceptual aspects as an introduction to modern architecture -romantic trends - the gap between architecture and construction - eclecticism - Special emphasis is placed upon studying individual architects, buildings, and theoretical writings.</p>
ARC 215	Building Construction I	ARC 201	3	<p>This course introduces the student to the basics of building construction, it deals with the main elements of the building such as; load bearing &amp; masonry walls, skeleton R.C. structures, R.C. Footings, R.C. columns, R.C. floors &amp; roofs, building insulation and protection, and staircases design and construction.</p>
ARC 216	Concrete & steel construction	ARC 205	2	<p>The course is an introduction to the basic</p>

				techniques required by practicing engineers for designing structures using steel or reinforced concrete. Introduction of computer programs on design of concrete and steel structures	
ARC 301	Architectural Design Studio III	digital	ARC 211 ARC 212	5	The architectural design studio (III) program addresses the principals of concepts, processes and skills pertaining to context and climate as determinants that shape the built environment. The course offers a comprehensive exploration of computer-aided software (2D&3D models).
ARC 302	Building Construction II		ARC 215	3	This course deals with secondary & nonstructural components of buildings; such as floor finishes (terrazzo, wood, marble, carpet, and vinyl); suspended ceilings (tiles, gypsum board); interior partitions (wood, glass, metal, gypsum board); and openings (doors and windows).
ARC 303	Technical Installation		ARC 215	2	This course introduces students to the different mechanical systems utilized in mechanical systems (elevators, HVAC, sanitation), and electrical systems (lighting, acoustics, power), in

				<p>addition to safety and fire protection systems. The course will help students to analyze and assess how to integrate systems and services needed by end users in an economically feasible manner. It will also assist them in applying methods of systems integration to realistic situations which can be translated in the design studio. Students will also study and investigate building codes.</p>
ARC 304	Introduction to Environmental control	PHY 102	3	<p>The course studies the interaction between buildings and climate. It emphasizes on the necessity of taking climatic effects in mind when planning and design of buildings to create comfortable environments. Development of various methods, tools, and techniques are available for environmental designs.</p>
ARC 305	Properties and strength of materials	PHY 102	2	<p>This course introduces the basic information and characteristics of different construction materials and its tests used in building construction (aggregate, cement, concrete, steel, reinforced concrete, mechanical properties, durability, hardness of concrete, etc.)</p>

ARC 311	Architectural Design Studio IV	ARC 301	5	The architectural design studio IV program focuses on structural system, methods of construction and building materials that affects and informs architectural design.
ARC 312	Sanitary installation	ARC 302	2	This course deals with the sanitary installation and their paths and damp insulation and the various measures that are necessary for the safety of the structure in relation to sanitary installations. It includes systems used in sanitation, water supply and waste disposal, the basic principles and code requirements of typical design of plumbing systems.
ARC 313	Intro. to Housing and Urban Design	ARC 301	3	This course provides an introduction to housing and urban design; theories, housing problems, social, economic and environmental impact on housing and urban design.
ARC 314	Introduction to Building Technology	ARC 302 ARC 305	3	The course covers the definition of the difference between science and technology in both theory and practice. The difference between the concept of structure and concept of construction. The course presents a brief review of different systems

				of construction technology.
ARC 315	Soil Mechanics and Foundation	ARC 305	2	The course is an introduction to basic knowledge and information for architectural engineering in the issue of building foundations behavior of soil under foundation, various types of foundations- bearing capacity of soil, design of shallow and deep foundations
ARC 401	Architectural Design Studio V	ARC 311	6	The architectural design studio V concentrates on design philosophy understanding and architectural trends. In general, this studio is a continuation of design projects with more complexity.
ARC 402	Landscape Architecture and site planning	ARC 201	3	The course studies the fundamentals of landscape and the relation between landscape and architectural design in relation to site planning. Students are introduced to the study of exterior spaces as they relate to and complement building designs. Typical projects are included in the courses as tutorial exercises.
ARC 403	Working Drawings	ARC 302	3	This course introduces the student to the fundamentals of preparing the working drawings &

				<p>details for building construction &amp; industrialization. Drawings are presented in the form of floor plans, roof plans, site plans, elevations, sections, wall and roof sections and details, and tables of doors &amp; windows. During this course drawing skills are developed &amp; office management issues are discussed. These knowledge and skills are applied on a simple given project which should be determined according to the student's specialization (Architecture, Building Science and Technology and Environmental Design).</p>
ARC 411	Architectural Design Studio VI	ARC 401 ARC313	6	<p>Design studio VI is oriented to cope with Planning and designing an urban project within an existing or proposed urban context with emphasis on scale, masses, and patterns, identity, urban expression and integration with existing urban fabric. Attention should be made to traditional and historical buildings conservation or re-use.</p>
ARC 412	City Planning	ARC 311	3	<p>The course deals with the different concepts and principles of urban, city and town planning. It furnishes a wide background of the field of</p>

				<p>planning and its related physical social and economic influencing factors. The course first defines the general concepts of planning, and then it briefly illustrates the history of city planning of different civilizations. The course also presents an outline of prototypical planning problems and solutions in different areas of planning</p>
ARC 413	Working Drawings and Documentations	ARC 403	3	<p>This course deals with working drawings and construction documentation as one of the architectural design phases, in this course the students are required to prepare construction documents and BOQs to one of their previously designed project. Working drawings in this level includes all documents of the project (plans, elevations, sections, architectural details, in addition to technical systems such as sanitation and electrical documents &amp; bills of quantities and specifications</p>
ARC 501	Architectural Design Studio VII	ARC 303 ARC 314 ARC 411	6	<p>This design studio introduces comprehensive project related to real life problems. Integration of building systems; (structural, mechanical and environmental control</p>

				systems) is in the core interest of this course. Critical monitoring for proposed projects in relation to each specialization (Architecture, Building science and Technology and Environmental Design).
ARC 502	Architectural professional Practice	ARC 311	2	The course presents an overview of the contemporary context and complexities of architectural professional practice. It demonstrates the varied and evolving roles and responsibilities of the architect. This course covers standard practices and procedures of the architectural profession. It emphasizes the characteristics of the best practices
ARC 511	Final Architectural Design Project VIII	ARC 402 ARC 501	7	In this course each student is required to select and develop a project that expresses his abilities and developed technical, artistic and professional skills. The proposed projects will reflect student's specialization (Architecture, Building science and Technology and Environmental Design).
Electives				

ARC A 421	Housing Design	ARC 311	2	This course deals with housing and residential development inside and outside of Saudi Arabia, focusing on problems, policies, economic factors, program and strategies.
ARC A 422	Architectural Criticism	ARC 311	2	This course focuses on the types and methods of architectural criticism. It includes studying the techniques of critical expression, and evaluation of architectural projects. Students are required to practice architectural criticism in term of local and international case studies. The course emphasizes the variety of contemporary architectural school of thought and how to apply different types, methods and techniques (styles) of criticism to it.
ARC A 423	Urban design	ARC 311	2	This course provides an introduction to urban design terms and deals with physical and non-physical aspects in urban design and its levels as well as the urban image of city components. The course also introduces principles of urban land-use; types and dimensions of spaces, elements of urban environment. Regulations of urban design, the values

				of old cities and its urban spaces are also included in term of conservation of historical zones.
ARC A 424	Environment and Human Factors	ARC 311		In this course the students will learn the human factors and environmental aspects building design. Student will study and analyze interior space in term of behavioral and cultural context. They should be able to built theoretical knowledge about environment and human behavior as it is major concern of design and design process. Students will learn about personal and social space, comfort, Proxemics zones, and ergonomics as well as safety issues.
ARC A 425	Architecture Conservation	ARC 311	2	The course deals with of the relationship between new building design and the preservation of historic buildings. The preservation of the architectural heritage of a culture is an indication of the importance that culture placed on its past. The trend in the developed world today is to preserve historical monuments, historic

				<p>district, tangible and intangible heritage as much as possible. The course discusses the theories and practices associated with the historic preservation movement, the impact that historical values, aesthetics, culture, politics, and economic factors have in the preservation process.</p>	
ARC A 426	Sustainability Architecture	in	ARC 311	2	<p>This course is concerned with the sustainable design, which explores stewardship of the built environment and how decisions affecting the built environment benefit or detract from sustainable design. It focuses on collaborative process that involves thinking ecologically-studying systems, relationships and interactions. The course tackles different scope of sustainable architecture; thermal comfort, microclimatic analysis, passive thermal systems, heating/cooling loads, day lighting systems, energy codes</p>