**Course Description**

**Architecture Department**

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**ARC100**

**Architectural Graphics**  
0 - 10 - 5  
This is a foundation course introducing the processes and techniques of graphic thinking. The course develops basic skills, ideas and the presentation methods of simple architectural exercises through a sequence of project types emphasizing 2D and 3D thinking. The importance of sketching in architecture is emphasized. The course bridges the gap between having no graphic communication skills and having the first level of skills required for the succeeding design studio.  
*Prerequisite: None*

**ARC101**

**Design Studio I - Design Principles**  
0 - 10 - 5  
The objectives of this course are those of improving graphic communication and initiation into design. Elementary projects are carried out which explore spatial thinking in basic structural forms and shapes. This course introduces the architectural design process, including issues of concept making, and design development.  
*Prerequisite: ARC100*

**ARC110**

**History of Architecture I**  
2 - 0 - 2  
This course is an introduction to the chronological development of architecture from pre-history, to Egyptian, Greek, and Byzantine, highlighting the development of structural systems, materials, construction and other building systems. Emphasis is on the Middle and Near East. The eastern Architectures of the Indian, Chinese and Japanese civilizations are also covered. The focus of this course are those of developing an understanding for material use, and of creating an appreciation as to the factors that contribute to the development of the unique architecture of the various cultures.  
*Prerequisite: None*

**ARC112**

**History of Architecture II**  
2 - 0 - 2  
The first part of this course covers a chronological development of architecture from the Early Christian period through the Gothic, to the Renaissance and Baroque periods. The second part studies architectural development from the Baroque period though the Industrial Revolution to the Modern movements.  
*Prerequisite: ARC110*
Course Description

Architecture Department

ARC124
Computer Aided Architectural Design 2 - 3 - 3
Introduction to the techniques and applications of computer aided design in the context of architectural design. Emphases in the use of computer to seek, produce, manage, and exchange graphical information in the design process. Topics include introduction to personal computing in an office environment, two-dimensional editing and modifying techniques, standard layering system, associative dimensioning, blocks and external referencing system, layout management, CAD and the Internet. Introduction to computer programming to automate drafting functions.
Prerequisite: None

ARC132
Man and Built Environment 2 - 0 - 2
This course constitutes an investigation into the design factors necessary for human living. It looks at the design of the built environment with emphasis on human needs and how the social sciences can contribute to architectural design and practice. The influence of other factors such as climate, materials, technology, and physical context are considered, and design principles are formulated from cross-cultural examples of world architecture.
Prerequisite: None

ARC202
Design Studio II - Space & Order 0 - 10 - 5
This course continues the study of the development of design principles from Design Studio 1 (ARC101). Space definition is supplemented with human, cultural and localized contextual needs. Small and minimally complex projects explore functional, aesthetic and structural issues.
Prerequisite: ARC 101

ARC203
Design Studio III - Site, Context & Form 0 - 10 - 5
Intermediate design scale is explored in this course, utilizing analytical approaches to problem solving, sketching and 3-D modeling. Emphasis is on site design, programming, materials and technology.
Prerequisite: ARC 202
ARC210
History of Islamic Architecture 2 - 0 - 2
The course covers the chronological development of Islamic civilization and architecture from Umayyad in Syria and Iraq, through the classical and late classical periods in Spain, North Africa, the Middle East, including Mesopotamia, the Ottoman empire, Persia and the Mughal Empire. The influences of Islamic architecture on other architectural styles of the same periods and vice versa are studied. The course covers the importance of Islamic art, geometry, calligraphy and variations in cultural attitudes in architectural styles. The development and evaluation of contemporary Islamic architecture is introduced. 
Prerequisite: ARC 112

ARC221
Structures in Architecture I 3 - 0 - 3
This course studies the history of shelters and the development and philosophy of structural systems. It is an introduction to different structural systems and their advantages; including load transfer mechanisms; their equilibrium and their application. The quantitative analysis of simple determinate systems, such as trusses, frames and beams; and the computation of axial and bending stress in simple members are covered.
Prerequisites: MATH 132 and PHYS 133, Instructor approval for Non-ARC Students

ARC222
Structures in Architecture II 3 - 0 - 3
This course provides a continuation in the study of structural systems. Emphasis is on analysis and design. Analysis and design of in-determinate structural systems in wood and steel, along with an introduction to concrete and masonry structural systems are covered. Computers are introduced as a tool in structural analysis and design at this level.
Prerequisite: ARC221

ARC225
Virtual Reality in Architecture 2 - 3 - 3
Computer visualization process that includes: three dimensional modeling, analytical rendering, and animation, focusing on the description of architectural design. Digital video; capturing editing video audio clips. Virtual Reality in architecture; terminology, characteristics, environment, and applications. Virtual Reality Modeling Language. Students will apply the above tools to a design studio project.
This course includes exposure to a broad spectrum of modeling, and presentation software.
Prerequisite: ARC124 or instructor approval
Course Description
Architecture Department

ARC251
Introduction to Urban Design Concepts 2 - 0 - 2
This course is an introduction to the history and theories of urban spatial design. Approaches to the development of urban spaces throughout history are discussed, including Greek, Roman, Renaissance, Islamic, Baroque, Utopian, and Modern post-industrial concepts. Influential urban design theories and trends in modern times, their implications and feasibility, are studied. Urban social behavior and the psychological effects of urban space on its users are also studied.
Prerequisite: None

ARC281
Architecture of Saudi Arabia 2 - 0 - 2
Emphasis in this course is on developing a good understanding of the traditional architecture of all the regions of Saudi Arabia. Focus is on the need to learn important aspects about the fast-vanishing traditional architecture of the region. Historic preservation is discussed.
Prerequisite: None

ARC300
Workshop/Summer Internship 2 - 0 - 2
This workshop provides experience in the practical application of core subjects in a new or on-going research project. It provides ‘in house’ training with instruction in the students’ intended professional major. Opportunities are offered for experimentation with innovative materials, construction and structural elements.
The workshop is an acceptable substitute for the summer internship.
Prerequisite: Junior Standing

ARC304
Design Studio IV - Analysis and Synthesis 0 - 12 - 6
This studio focuses on building types that exhibit complexity and challenge. Project designs must show clear understanding of structural, mechanical and construction systems, along with space planning.
Architectural programming is introduced.
Prerequisite: ARC203
ARC305
Design Studio V - Virtual Design Studio 0 - 12 - 6
The building types explored in this studio have greater complexity of function. In addition, emphasis is placed on building envelope in terms of form, massing, articulation and fenestration. Use of computer-aided design is a part of the design exploration.
Prerequisite: ARC304, ARC225

ARC313
Theory of Architecture I 2 - 0 - 2
This course explores the path of the principal architectural thoughts and events which led to the development of major architectural and town planning theories; starting with Vitruvius’ “ten Books of Architecture”, to the European Art Nouveau movement (1890-1910) and the early influence of reinforced concrete. Concepts of architectural space, form and vocabulary, as well as major town planning concepts and theories from these periods are discussed and critically analyzed.
Prerequisite: ARC 210

ARC314
Theory of Architecture II 2 - 0 - 2
The course outlines the theoretical foundations of 20th Century trends in architecture, in the light of worldwide historical developments and their social and technological influences. The focus of the course is on the Modern Movement and recent developments leading to the Post-Modern aspects of architectural aesthetics.
Prerequisite: ARC313

ARC315
Perception, Geometry and Color in Architecture 2 - 0 - 2
This course offers an understanding of perception and its application in transforming ideas into design and 3-D form. It is an introduction to the evolution of geometry in architecture and to primary elements such as line, plane, form, size direction and other ordering principles. The theories of color, and the interaction of color with its physical, visual and psychological aspects are included.
Prerequisite: Instructors approval for Non-ARC Students
ARC323
Structures in Architecture III 3 - 0 - 3
This course is an introduction to the characteristics of reinforced concrete and to its analysis and design using codes, tables and charts. Aspects of material deterioration and design for durability are covered in the course. Emphasis is placed on the use of computer applications in both analysis and design.
Prerequisite: ARC222

ARC341
Freehand Drawings 1 - 3 - 2
In this course students are taught how to see and how to quickly draw what they see thus improving their abilities to draw in three dimensions. The techniques of drawing are taught using various mediums, such as pencil, ink, and charcoal. The subject matter includes still-life and landscape drawing in the field, as well as “gesture drawing” drawing.
Prerequisite: None

ARC342
Computer Presentation Techniques 2 - 0 - 2
Expanding the use of mixed media into the translation of ideas, this course brings practical presentation principles, layout and comprehensive media techniques to the field of graphic design. Computer software, using industry standard illustration, paint, and page layout, new technologies and traditional composition are addressed.
Prerequisite: ARC124

ARC343
Creative Design Workshop 1 - 3 - 2
This is an advanced-level workshop covering creative thinking in design, using various media and methods of expression. The students are encouraged to develop innovative ideas and topics.
Prerequisite: None
ARC344
Architectural Photography
1 - 3 - 2
This course covers fundamental information about the use of photographic materials in the environmental design professions. Subjects discussed include photographic films and papers, camera types, lighting and darkroom techniques. Included in the course program are architectural documentation, presentation and promotional use of photography. Reproduction techniques using Diazo material, offset printing, model photography and line printing are also discussed.
Prerequisite: None

ARC352
Specific Urban Design Workshop
1 - 3 - 2
Application of traditional and modern urban design theories and methods constitutes the backbone of the course. Focus is on the solution of urban spatial problems and urban rehabilitation. Examination of case studies is undertaken at the scale of a district within the city. Action area projects are chosen from adjacent urban areas to allow easy accessibility for data collection and actual site analysis.
Prerequisite: ARC251

ARC353
Housing Policy and Design
2 - 0 - 2
This course provides an introduction to housing theory, socio-economic aspects related to housing, alternative approaches to housing policy and housing problems in developing countries, with particular attention to traditional housing settlements in Saudi Arabia. Exploration of current issues in the formulation and implementation of housing programs is carried out. This covers an analysis of Housing Design, classification of housing types, data gathering on housing, neighborhood theory as a housing concept, design procedure of a housing community, structure of housing areas as a criteria for the design of housing, construction technologies, materials, costs, climatic conditions and code issues.
Prerequisite: None

ARC361
Introduction to Landscape Plants
1 - 3 - 2
This course introduces basic principles of landscape architecture. Both landscape design processes and design methods are taught. This includes field study, and site analysis for the use of plants. Identification is made of native plants, factors of aridity, soil and types of irrigation systems suitable for Saudi Arabia. Emphasis is placed on the use of local plant materials.
Prerequisite: None
Course Description

Architecture Department

ARC362
Introduction to Landscape Design 1 - 3 - 2
This course is an introduction to basic principles of landscape architectural design and techniques. Projects at the scale of site design, such as open spaces and building surrounds, are dealt with. This reinforces understanding of the optimum and correct use of land development, local plant materials and irrigation systems.
Prerequisite: None

ARC363
Introduction to Ecological Analysis 1 - 3 - 2
This course covers the analysis of environmental factors, ecosystem functions, and ecosystem dynamics as they relate to decision-making for planning design. Environmental phenomena of Saudi Arabia, need controls, and counter measures are discussed.
Prerequisite: None

ARC364
Specific Open Spaces Design Workshop 1 - 3 - 2
This workshop provides a focus on how landscape design and green spaces add vitality to community and city life. The workshop introduces students to the creative design of urban open spaces. Such open spaces are analyzed, where their potentials are explored with the intent of creating parks, outdoor recreation, toddler lots, picnic areas, ponds, walks and natural trails.
Prerequisite: None

ARC371
Introduction to Interior Architecture 2 - 0 - 2
This course is an introduction to concepts of interior space, color and material selection, contract interiors and space planning methods. Course content covers discussion of marketing interior design services and methods. Sociological and psychological aspects of interior architecture are also presented.
Prerequisite: None
ARC372
Furnishing Design 1 - 3 - 2
This is a survey course concerning materials, methods and manufacturing processes that are applied to interior furniture and fixture design. The course covers the analysis of custom and mass production costs and considers the benefits of durability, safety and human comfort. These factors are discussed with respect to various interior furnishings.
Prerequisite: None

ARC373
Commercial Interiors 1 - 3 - 2
This course addresses commercial and institutional interiors. Space planning methodologies, life cycle costing, modular office systems and materials selection are discussed. Office comfort, artificial illumination and day lighting are also considered.
Prerequisite: None

ARC374
History of Interior Architecture 2 - 0 - 2
This course presents a survey of interior architecture throughout history. Emphasis is placed on the way historical periods are reflected through the use of interior colors, materials and finishes.
Prerequisite: None

ARC 399
Summer Internship 0 - 0 - 1
This is a continuous period of 8 weeks of summer work in building design and construction industry, for gaining exposure and appreciation of the architectural profession. The writing of a field experience report is required. The report should emphasize duties assigned and completed during the period.
Prerequisite: Junior Standing
ARC400
Senior Project Preparation and Programming  2 - 0 - 2
In addition to teaching the basic techniques of architectural programming, this course is designed to help the senior student to prepare his proposal for the final project in ARC 408. Topics include: Client objectives, Functional relationships, Facility space requirement development, Site development requirements, Site analysis, Prioritizing functions, Spatial restrictions and budget constraints. The student carries out research on his chosen building type and location, acquires the necessary approval based on the need for where it is planned for his project, visit the site and government offices to obtain the necessary maps, contour information, street locations and photographs. The student then writes a program for his project.
*Co-requisite: ARC 406*

ARC406
Design Studio VI - Comprehensive Design Project  0 - 12 - 6
This studio emphasizes the comprehensive nature of architectural design. Assigned project programs relate to an urban context and a visit-able site. Experimenting with different solutions using knowledge of architectural theories and contemporary concepts of design, formulate concepts to a high level of practicality. This course is available to students of senior standing only.
*Prerequisite: ARC 305*

ARC407
Construction Documents  0 - 6 - 3
This course is setup to introduce concepts and methods of preparing construction documents for buildings. It provides a hands-on experience in preparing such documents. The course will emphasize the use of computer integrated database management systems, Intranet and Intranet methods for accessing, distributing and coordinating construction documents. Topics to be covered include: the graphic component: a coordinated set of drawings, plans, sections, elevations, graphic symbols, and details, required to graphically describe the project. The alphanumeric component: dimensions and annotations, tables, and schedules (doors, windows, and room finishes). Specifications, mostly text but sometimes supplemented with graphics, including bills of quantity or materials.
*Prerequisite: ARC124 and ARE212*
Course Description
Architecture Department

ARC408
Senior Project 0 - 14 - 7
This studio begins with a presentation of the ARC-400 program document with clear indication of the intent and direction of emphasis. Having been reviewed and approved by a senior project committee, this project design is undertaken to its completion. The project must exhibit a comprehensive mastery of architectural design, reflecting the knowledge and skills acquired during four years of study in architecture.
Prerequisite: ARC400, ARC406, Senior Standing

ARC416
Specific Topics on Islamic Architecture 2 - 0 - 2
In this course, the major developments in Islamic architecture are studied. The course concentrates either on a given period, a specific case study, or both in the rich and diversified traditions of Islamic architecture. At the discretion of the instructor, themes such as Al-Hamra Palace or Andalusian Islamic Architecture, form the focus and essence for the entire course.
Prerequisite: ARC210

ARC426
Professional Practice 3 - 0 - 3
The course introduces knowledge required for a success career in architectural practice or employment. The course is divided into three parts. The first part discusses the training and role in society of architects. This covers academic and professional training; career choices, lives as professionals and professional ethics. The second part discusses the organization and management of architectural firms and covers firm formation and organization, marketing of services, management and dynamics. The last part deals with Project administration. It covers project conception and acquisition; project management; design services, parameters and documentation; and contract administration. The course highlights practices in Saudi Arabia and compares them with international practices.
Prerequisite: Junior Standing
Course Description

Architecture Department

ARC435
Design Determinants for Arid Regions  2 - 0 - 2
This course offers insights into design for arid regions. It covers analysis of natural conditions, climate, topography and water. Analytical criticism of existing buildings in arid regions is used to develop an understanding of the culture, construction technology, and materials of such regions. This also develops an appreciation for cultural, site and climatic conditions that prevail and determine the building-form.
Prerequisite: None

ARC442
Knowledge-Based Systems in Architecture  2 - 0 - 2
This course presents an overview of the knowledge-Based Systems and their application in the field of architecture and environmental design. Fundamental concepts, as well as types of knowledge-Based systems are discussed. Case studies in the architectural application of these systems, issues of linking these systems to other information technologies such as CADD, Multimedia, Hypermedia and ontologies, are undertaken.
Prerequisite: ARC124

ARC449
Special Topics in Computer Aided Design  2 - 0 - 2
The objective of this course is one of exploring emerging ideas in Computer Graphics and Information Technology Applications in the fields of architecture and design. It provides a forum for faculty and IT experts to share their research findings or professional experience in computer graphics with students. It also provides an opportunity for students to explore topics in Information Technology Applications that are of special interest to them individually. The specific content and format of the course varies with the topic and research interest of the faculty teaching it.
Prerequisite: ARC124
Course Description
Architecture Department

ARC453
Urban Design Theory 2 - 0 - 2
This course is a critical analysis of the theories and current issues of urban spatial design. It examines city forms and patterns, and reviews utopian models. The emphasis is on the understanding of the physical, socio-cultural, economic and technological forces, and their role in shaping the urban environment.
Prerequisite: ARC251

ARC454
Methods of Urban Design Analysis 2 - 0 - 2
This course is concerned with ‘Researching and analyzing urban form’ to understand its elements and its underlying organizing principles. The purpose is to expose the students to the range of approaches available for urban form analysis and for understanding what makes a “good” city or urban area. Computer based analytical techniques and computer visualization and simulation technology will be emphasized.
Prerequisite: ARC 251

ARC459
Special Topics in Urban Design 2 - 0 - 2
The objective of this course is one of exploring emerging ideas, concepts and policy intervention methods in urban design. The course provides a forum for faculty to share their research findings or professional experience in the field of urban design or to explore a new theory, method or techniques of urban design. Students with particular urban design interest may also explore them in this course. The specific content and format of the course varies with topic and research interest of the faculty teaching it.
Prerequisite: ARC251

ARC482
Socio-Cultural Factors in Design 2 - 0 - 2
This course is a study of behavioral concepts and socio-cultural aspects affecting the way man shapes his environment, and in turn is shaped by it. The course builds an understanding of human culture, attitudes, psychology, and the behavior of both individuals and groups. Selected social planning and design issues, technology and related research techniques are studied.
Prerequisite: None
ARC483
Architectural Conservation and Preservation 2 - 0 - 2
This course is an introduction to construction principles and materials employed in Saudi Architecture. Observation and examination of existing architectural examples in the form of their physical, historical, and cultural context, and their anatomy, both physical and conceptual make up the majority of the study. Development of skills in architectural design principles required for the conservation and preservation of “what is there” in architecture is also important.

Prerequisite: None

ARC489
Special Topics in Regional Architecture 2 - 0 - 2
The flexible content and format of the course offers opportunity to the student to explore much deeper into chosen areas and types of regional architecture. This exploration, however, should allow for the development of understanding in creating a link between the past, present and the future of regional architecture.

Prerequisite: None