Architecture

Program description

Architecture arises from the same origins as other universal manifestations of material culture. However, the artefacts designated as architecture possess a scale, permanence, and pervasive influence unique among human endeavours. These qualities give the discipline a cultural prominence that few other professions enjoy.

The study of architecture is concerned with complex, interdisciplinary issues. Some matters are primarily individual and practical, such as the basic human need for shelter and the desire to contrive efficient, adequate forms for the patterns of daily life. Architecture also serves a higher purpose. For example, often it is an expression of the living values of a culture. It gives form, order, and proportion to human activities.

The practice of architecture today requires coordinated contributions from a variety of fields. Therefore, the study of architecture at Effat University investigates the principles and applications of history, theory, drawing, and structures. Additional courses in technology, art, the humanities, engineering, the physical and social sciences, and management will help lay the foundation for the rest of students' educational experience.

Basic conceptual skills are emphasized early on, along with introducing the elements of architecture. Design studios at each level help students develop the skills and intellectual tools to solve problems. Students will be immersed in architectural design; eight design studios and a full-year Capstone Project are required, and it is the focal point of every semester. Studio exercises vary significantly during the five years. Students will learn to communicate ideas through models and graphics.

The Bachelor of Science in Architecture degree is intended for students who seek a professional career in architecture and the building industry. The curriculum is designed to prepare graduates for professional practice in Saudi Arabia and throughout the region and the world, according to the requirements of the Saudi Ministry of Education (MoE). In addition, it follows the quality standards set by the National Commission for Academic Accreditation and Assessment (NCAAA) in Saudi Arabia, and the Students Performance Criteria (SPC), set by the National Architecture Accrediting Board (NAAB) in the United States of America, for a professional bachelor in architecture. The set of elective courses in architecture helps students to further develop their graduate studies in any of the related fields.

Educational objectives

Cognitive

- To provide students with a high level of quality education so that they will be able to assume professional responsibilities in architecture.

  (Note: The program offers a sound knowledge in architecture design theories and applications, building technology, and social, cultural, environmental, and information technology).

Affective

- To help students refine their ability to think critically, communicate effectively, and solve complex problems.

- To prepare students to develop technical skills and work effectively in multi-disciplinary teams within the building industry.

- To help students understand the ethical and professional issues related to the business of building.

Learning outcomes

Students who successfully complete the program will be able to demonstrate the following abilities to:

- Define the terminologies common to the field of architecture.

- Recall the importance of architecture as an area of human activities, both in the past and contemporary times.

- Describe the various theoretical, historical, social, cultural, environmental and technological aspects of architecture.

- Design Architecture projects using appropriate computer application tools.

- Integrate fundamental principles and techniques of problem solving in architecture design.

- Analyze the various aspects of interactions between humans and their environment both from an architecture and urban design point of view to produce sustainable healthy societies.

- Differentiate between different types of building materials, building technologies and structural systems

- Demonstrate personal and professional responsibility.

- Show a deep sense of leadership and responsibility to the culture and a sustainable community.

- Adhere to professional ethics practices common in designing, presenting, and managing a project.

- Communicate effectively in oral and written forms, including the creation of appropriate technical documentation.

- Calculate relevant information, statistics and mathematics.

- Demonstrate mental physical coordination in producing architecture sketches.

Career opportunities

Graduates of the program will be prepared for careers as practicing architects in both the public and private sectors. Graduates will be able to carry out multiple architectural tasks from inception through programming, and encountering users and environmental constraints, to the development of a coordinated set of construction documents. Also, graduates of the program will be able to pursue studies at a graduate level if they wish.

Designation of the decimal (second) digit of the course numbers in Architecture (ARCH)

Digit	Topic
0	Architecture Design Studio
1	Basics
2	Skills
3	Architecture History

Digit	Topic
4	Architectural Theory and Thought
5	Technical Courses
6	Architecture Technical Electives
7	Capstone Project

Graduation requirements

Graduation requirements include the successful completion of a minimum of 171 credit hours:

General education requirements	Major core requirements	Track technical core requirements	Technical elective requirements	College core MATH requirements	Free electives	TOTAL
Architecture						
42	114	0	12	3	0	**171**

Course numerical identification

Every course is identified by an alphanumeric designation:

- The letter part of the designation is the letter code of the department that offers the course (i.e. ARCH is the letter code for the Architecture Department).

- The most significant digit of the numeric designation, the hundreds digit, identifies the target level of the course (i.e. as a first year course, a second year course etc.).

- The middle digit of the numeric designation, the tens digit, indicates the area of specialization within the department.

- The least significant digit of the numeric designation, the singles digit, indicates the sequence number of the course within a set of courses associated with a particular area of specialization.

Explanation of credit hour notations

Credit hours are listed throughout the document in the following format: (3-0-3). The first numeral indicates the number of lecture hours, the second numeral indicates the number of practical hours (if applicable), and the third numeral indicates the total number of credit hours awarded after the course has been successfully completed.

The General Education Program (GEP) requirements, which form the core foundation for students throughout the university, are incorporated into the Architecture Program as follows:

General education requirements: 42 credit hours

Pillar	Credits	Category	Courses	Credits
Skills development	20	Linguistic Communication (English)	GENG 161	2
			Any course from the category	2
		Linguistic Communication (Arabic)	Any course from the category	3
		Linguistic Communication (Foreign Languages)	Any two courses from the category	4
		Quantitative Reasoning	GMTH 141A	3
			GSTA 140 or GSTA 141	3
		Information, Media and Technology	Any course from the category	3
Literacies	9	Scientific Literacy	GPHY 112	3
		Global Awareness	Any course from the category	3
		Cultural Literacy	Any course from the category	3
Cultivating positive disposition	10	Physical and Environmental Wellbeing	Any course from the category	2
		Islamic Thought and Ethics	GISL 171	2
			Any two courses from the category	4
		Civic Engagement	Any course from the category	2
Interdisciplinary research	3		GSEM 200	3
TOTAL CREDIT HOURS	**42**			**42**

ARCH major requirements: 129 credit hours

ARCH Major Requirements		Credits
Compulsory courses (117 credit hours)	College MATH requirements	3
	ARCH requirements	114
Major Electives	Architecture technical electives requirements	12
TOTAL		**129**

Compulsory courses: 117 credit hours

To fulfil the requirements for graduation, all Architecture students must successfully complete the following courses:

A. Collateral courses: 3 credit hours

Course no.	Course title	Credits	Prerequisite(s)
MATH 127	Calculus for Engineers	2-2-3	GMAT 141A
TOTAL		**3**	

B. ARCH requirements: 114 credit hours

Course no.	Course title	Credits	Prerequisite(s)
ARCH 101	Architecture Design Studio -1	0-10-5	–
ARCH 102	Architecture Design Studio -2	0-10-5	ARCH 101
ARCH 120	Freehand Drawing	0-6-3	–
ARCH 150	Computer-Aided Architectural Design -1	2-2-3	ARCH 101
ARCH 203	Architecture Design Studio -3	0-10-5	ARCH 102
ARCH 204	Architecture Design Studio -4	0-10-5	ARCH 203
ARCH 231	History of Architecture	3-0-3	–
ARCH 232	History of Islamic Architecture	3-0-3	ARCH 231
ARCH 240	Architecture, Culture, and Environment	3-0-3	–
ARCH 252	Building Construction	3-0-3	ARCH 150
ARCH 256	Computer-Aided Architectural Design -2	2-2-3	ARCH 150

ARCH requirements: 114 credit hours (Continued)

Course no.	Course title	Credits	Prerequisite(s)
ARCH 305	Architecture Design Studio -5	0-10-5	ARCH 204 & ARCH 252
ARCH 306	Architecture Design Studio -6	0-10-5	ARCH 305 & ARCH 342
ARCH 340	Research Methods in Architecture and Urban Design	1-2-2	GSEM 200*
ARCH 341	Theory of Architecture	3-0-3	ARCH 231
ARCH 342	Urban Design	3-0-3	ARCH 231
ARCH 343	Introduction to Landscape Architecture	3-0-3	ARCH 240
ARCH 350	Structure in Architecture -1	3-0-3	ARCH 252 & GPHY 112
ARCH 351	Structure in Architecture -2	3-0-3	ARCH 350
ARCH 352	Building Structures and Materials	3-0-3	ARCH 351
ARCH 407	Architecture Design Studio -7	1-10-6	ARCH 306 & ARCH 351 & Good standing
ARCH 408	Architecture Design Studio -8	1-10-6	ARCH 407 & ARCH 455 & Good standing
ARCH 444	Housing and Economics	3-0-3	ARCH 342
ARCH 446	Comparative Architectural Thoughts	3-0-3	ARCH 341
ARCH 453	Energy and Design	2-2-3	ARCH 240
ARCH 454	Mechanical, Electrical, and Safety Systems	3-0-3	ARCH 252
ARCH 455	Working Drawings	1-4-3	ARCH 351
ARCH 456	Project Management	3-0-3	ARCH 352
ARCH 457	Professional Practice	3-0-3	Internship
ARCH 471	Architecture Design studio -9: Capstone Project -1	0-10-5	ARCH 408 & Good standing
ARCH 472	Architecture Design studio -10: Capstone Project -2	0-10-5	ARCH 471 & Good standing
Total		114	

Major electives: 12 credit hours

All Architecture students, in consultation with their academic advisor, must successfully complete 12 credit hours from the approved list of technical electives below:

Course no.	Course title	Credits	Prerequisite(s)
ARCH 361	Photography	2-2-3	–
ARCH 362	Saudi Traditional Architecture	3-0-3	ARCH 232
ARCH 363	Psychology and Sociology in Design	3-0-3	ARCH 240
ARCH 364	Color and Lighting Principles	3-0-3	ARCH 252
ARCH 365	Acoustics in Architecture	3-0-3	ARCH 252
ARCH 366	Computer-Aided Architectural Design -3	2-2-3	ARCH 256
ARCH 367	Facilities Management	3-0-3	ARCH 252
ARCH 368	Special Topics in Architecture	3-0-3	Junior level
ARCH 369	Approved Courses	3-0-3	Dept. approval
ARCH 461	Planning and Design of Human Settlement	2-2-3	ARCH 342
ARCH 462	Urban Conservation	3-0-3	ARCH 342
ARCH 463	Historic Building Restoration	3-0-3	ARCH 232
ARCH 464	Introduction to Interior Design	3-0-3	ARCH 204
ARCH 465	Introduction to Real Estate	3-0-3	ARCH 306
ARCH 466	Introduction to Building Economics	3-0-3	ARCH 306

Architecture: Study plan

Foundation Year – Semester 1		LEC	LAB	CR
LANG 011	Reading and Critical Thinking 1	2	2	3
LANG 013	Academic Writing 1	2	2	3
LANG 015	Listening and Speaking 1	2	2	3
SSKL 021	Independent Learning and Research Skills 1	1	2	2
ARD 051	Visual Communication	3	–	3
ARD 055	Basic Physics for Engineering 1	1	2	2
MATH 041	Basic Math 1	3	–	3
CL 031	Computer Literacy	–	2	–
TOTAL				19

Foundation Year – Semester 2		LEC	LAB	CR
LANG 012	Reading and Critical Thinking 2	2	2	3
LANG 014	Academic Writing 2	2	2	3
LANG 016	Listening and Speaking 2	2	2	3
SSKL 022	Independent Learning & Research Skills 2	1	2	2
ARD 054	Creative Design	2	2	3
ARD 056	Basic Physics for Engineering 2	1	2	2
MATH 042	Basic Math 2	3	–	3
IL 032	Information Literacy	–	2	–
TOTAL				19

Freshman Year – Semester 1		LEC	LAB	CR
ARCH 101	Architecture Design Studio -1	–	10	5
ARCH 120	Freehand Drawing	–	6	3
GMAT 141A	Mathematics for Architecture and Design	2	2	3
	Information, Media and Technology*	2	2	3
GENG 161	Project based Language and Critical Thinking	1	2	2
TOTAL				16

Freshman Year 1 – Semester 2		LEC	LAB	CR
ARCH 102	Architecture Design Studio -2	–	10	5
ARCH 150	Computer-Aided Architectural Design -1	2	2	3
MATH 127	Calculus for Engineers	2	2	3
	Arabic Language*	2	2	3
	English Language*	1	2	2
GISL 171	Social and Moral Values in Islam	1	2	2
TOTAL				18

Sophomore Year 2 – Semester 3		LEC	LAB	CR
ARCH 203	Architecture Design Studio -3	–	10	5
ARCH 231	History of Architecture	3	–	3
ARCH 240	Architecture, Culture, and Environment	3	–	3
	Quantitative Reasoning*	2	2	3
	Islamic Thought and Ethics*	1	2	2
	Physical & Environmental Wellbeing*	1	2	2
TOTAL				18

Sophomore Year 2 – Semester 4		LEC	LAB	CR
ARCH 204	Architecture Design Studio -4	–	10	5
ARCH 256	Computer-Aided Architectural Design -2	2	2	3
ARCH 232	History of Islamic Architecture	3	0	3
ARCH 252	Building Construction	3	0	3
GPHY 112	Foundations in Physics	2	2	3
TOTAL				17

Junior Year 3 – Semester 5		LEC	LAB	CR
ARCH 305	Architecture Design Studio -5	–	10	5
ARCH 342	Urban Design	3	–	3
ARCH 341	Theory of Architecture	3	–	3
ARCH 350	Structure in Architecture -1	3	–	3
GSEM 200	Interdisciplinary Seminar and Research	2	2	3
TOTAL				17

Junior Year 3 – Semester 6		LEC	LAB	CR
ARCH 306	Architecture Design Studio -6	–	10	5
ARCH 343	Introduction to Landscape Architecture	3	–	3
ARCH 351	Structure in Architecture -2	3	–	3
	Cultural Literacy*	2	2	3
	Architecture Elective (1)	3	–	–
TOTAL				17

Senior Year 4 – Semester 7		LEC	LAB	CR
ARCH 407	Architecture Design Studio -7	–	10	6
ARCH 454	Mechanical, Electrical, and Safety Systems	3	–	3
ARCH 455	Working Drawings	1	4	3
ARCH 340	Research Methods in Architecture and Urban Design	1	2	2
	Global Awareness*	2	2	3
TOTAL				17

Senior Year 4 – Semester 8		LEC	LAB	CR
ARCH 408	Architecture Design Studio -8	1	10	6
ARCH 453	Energy and Design	2	2	3
ARCH 352	Building Structures and Materials	3	–	3
	Architecture Elective (2)	3	–	–
	Foreign Language*	1	2	2
TOTAL				17

Senior Year 5 – Semester 9		LEC	LAB	CR
ARCH 471	Architecture Design studio -9: Capstone Project-1	–	10	5
ARCH 444	Housing and Economics	3	–	3
ARCH 446	Comparative Architectural Thoughts	3	–	3
ARCH 457	Professional Practice	3	–	3
	Architecture Elective (3)	3	–	–
TOTAL				17

Senior Year 5 – Semester 10		LEC	LAB	CR
ARCH 472	Architecture Design studio -10: Capstone Project -2	–	10	5
ARCH 456	Project Management	3	–	3
	Architecture Elective (4)	3	–	–
	Islamic Thought and Ethics*	1	2	2
	Civic Engagement*	1	2	2
	Foreign Language*	1	2	2
TOTAL				17

Total credit hours required for Architecture Program: 171

Summary of courses

Course no.	Course title	Credits	Prerequisite(s)
ARCH 101	Architecture Design Studio -1	0-10-5	–
ARCH 102	Architecture Design Studio -2	0-10-5	ARCH 101
ARCH 120	Freehand Drawing	0-6-3	–
ARCH 150	Computer-Aided Architectural Design -1	2-2-3	ARCH 101
ARCH 203	Architecture Design Studio -3	0-10-5	ARCH 102
ARCH 204	Architecture Design Studio -4	0-10-5	ARCH 203
ARCH 231	History of Architecture	3-0-3	–
ARCH 232	History of Islamic Architecture	3-0-3	ARCH 231
ARCH 240	Architecture, Culture, and Environment	3-0-3	–
ARCH 252	Building Construction	3-0-3	ARCH 150
ARCH 256	Computer-Aided Architectural Design -2	2-2-3	ARCH 150
ARCH 305	Architecture Design Studio -5	0-10-5	ARCH 204 & ARCH 252
ARCH 306	Architecture Design Studio -6	0-10-5	ARCH 305 & ARCH 342
ARCH 340	Research Methods in Architecture and Urban Design	1-2-2	GSEM 200
ARCH 341	Theory of Architecture	3-0-3	ARCH 231
ARCH 342	Urban Design	3-0-3	ARCH 231
ARCH 343	Introduction to Landscape Architecture	3-0-3	ARCH 240
ARCH 350	Structure in Architecture -1	3-0-3	ARCH 252 & GPHY 112
ARCH 351	Structure in Architecture -2	3-0-3	ARCH 350
ARCH 352	Building Structures and Materials	3-0-3	ARCH 351
ARCH 361	Photography	2-2-3	–
ARCH 362	Saudi Traditional Architecture	3-0-3	ARCH 232
ARCH 363	Psychology and Sociology in Design	3-0-3	ARCH 240
ARCH 364	Color and Lighting Principles	3-0-3	ARCH 252
ARCH 365	Acoustics in Architecture	3-0-3	ARCH 252
ARCH 366	Computer-Aided Architectural Design -3		ARCH 256
ARCH 367	Facilities Management	3-0-3	ARCH 252
ARCH 368	Special Topics in Architecture	3-0-3	Junior level
ARCH 369	Approved Courses	3-0-3	Dept. approval
ARCH 407	Architecture Design Studio -7	1-10-6	ARCH 306 & ARCH 351 & Good standing
ARCH 408	Architecture Design Studio -8	1-10-6	ARCH 407 & ARCH 455 & Good standing
ARCH 444	Housing and Economics	3-0-3	ARCH 342
ARCH 446	Comparative Architectural Thoughts	3-0-3	ARCH 341
ARCH 453	Energy and Design	2-2-3	ARCH 240
ARCH 454	Mechanical, Electrical, and Safety Systems	3-0-3	ARCH 252
ARCH 455	Working Drawings	1-4-3	ARCH 351
ARCH 456	Project Management	3-0-3	ARCH 352
ARCH 457	Professional Practice	3-0-3	Internship
ARCH 461	Planning and Design of Human Settlement	2-2-3	ARCH 342
ARCH 462	Urban Conservation	3-0-3	ARCH 342
ARCH 463	Historic Building Restoration	3-0-3	ARCH 232
ARCH 464	Introduction to Interior Design	3-0-3	ARCH 204
ARCH 465	Introduction to Real Estate	3-0-3	ARCH 306
ARCH 466	Introduction to Building Economics	3-0-3	ARCH 306
ARCH 471	Architecture Design studio -9: Capstone Project -1	0-10-5	ARCH 408 & Good standing
ARCH 472	Architecture Design studio -10: Capstone Project -2	0-10-5	ARCH 471 & Good standing
MATH 127	Calculus for Engineers	2-2-3	GMAT 141A
Total		**129**	

Course descriptions

ARCH 101: Architecture Design Studio -1 (0-10-5) Prerequisite(s): None

This course will help first year students to use effectively architectural principles in design. This course is a foundation studio that aims to introduce students to basic tools necessary to think, assess and act responsibly in shaping the built environment. The studio will evoke fundamental architectural ideas and terms and challenge the student's preconceptions about architecture. The students will understand a number of basic visual communication elements such as: shapes, colors, and textures. Studio applications of these elements will enhance students' fundamental design skills in drafting of architectural drawings for plans, elevations, and sections; manual rendering techniques and the use of color in design; two-dimensional shapes, three-dimensional volumes, model making, and architectural lettering.

ARCH 102: Architecture Design Studio -2 (0-10-5) Prerequisite(s): ARCH 101

This course aims to build design-thinking skills. It introduces the students to basic design elements and principals such as symmetry, forms organization, balance, and circulation through actual projects. The projects include the study of the various design relationships in two and three dimensions. This course stresses the use of model making in understanding abstract ideas and interprets information to produce successful design solutions that provide accessibility to different facilities. Students present their architectural drawings in manual based rendering methods.

ARCH 120: Freehand Drawing (0-6-3) Prerequisite(s): None

This course is an introduction to freehand drawing principles and graphic representation of objects, masses, and voids. The course stresses the enhancement of students' ability to use appropriate graphic presentation media. This includes the study and use of visual communication effects such as color, light, texture, value, and space, along with basics of perspective sketching.

ARCH 150: Computer-Aided Architectural Design -1 (2-2-3) Prerequisite(s): ARCH 101

This course builds students' skills of computer aided architectural design systems. The course benefits from the basic principles of architectural drawing taught in the ARCH 101. Students will enhance their computation skills to produce technically clear 2D drawings, and focus on using computer presentations and rendering techniques.

ARCH 203: Architecture Design Studio -3 (0-10-5) Prerequisite(s): ARCH 102

This course presents studio problems to develop students' awareness, knowledge, and basic skills needed in the synthesis of building form. Students will be familiarized with the principles of creating innovative interior spaces and exterior site design, according to user needs and safety requirements, and understanding their relationships to horizontal and vertical circulations. The student will be asked to apply the learned skills of concept development, design graphic techniques and presentations to demonstrate their critical thinking and communication skills in writing and speaking.

ARCH 204: Architecture Design Studio -4 (0-10-5) Prerequisite(s): ARCH 203

This course is concerned with more in-depth understanding of the diverse needs, values, behavioral norms, and cultures; and the effect of this diversity on the development of architectural design for small-scale buildings. Students will be able to determine the artistic, conceptual, creative, and spatial aspects of architecture in relation to its local context. The students will be asked to present their work and explain their concepts in printed presentations to demonstrate their digital technology skills.

ARCH 231: History of Architecture (3-0-3) Prerequisite(s): None

This course introduces students to the cultural and aesthetic attributes of architecture in relation to its place and environment. It presents an overview of the different architectural styles worldwide by surveying major works of architecture from the dawn of time until the end of the 19th century.

ARCH 232: History of Islamic Architecture (3-0-3) Prerequisite(s): ARCH 231

This course will survey the architectural developments of different Muslim regions and dynasties throughout history. The course aims to acquaint the student with the urban characteristics of Islamic culture through ages, to increase the student's understanding of relationships between urban principles and Islamic values in art and architecture, and to enhance student awareness, appreciation, and respect of Muslim architecture. The course familiarizes the student with vocabulary of Muslim architecture in order to generate and encourage interest in using and developing such elements in their architectural designs.

ARCH 240: Architecture, Culture, and Environment (3-0-3) Prerequisite(s): None

This course introduces students to the complex interactions between humans and their environment while emphasizing on the social and cultural influences that shape the built environment. Students address specific cases of human modification of the earth. The course highlights the importance of proper environmental planning and design to minimize harmful impacts of humans on the environment.

ARCH 252: Building Construction (3-0-3) Prerequisite(s): ARCH 150

In this course, fundamentals of building construction are introduced to the students; Project delivery system & Associated professions. Students should be familiarized with different building structures' types, with focus on traditional construction methods and materials such as load bearing, skeleton structures and used building materials (In-situ and Pre-fabricated). The course will also cover construction process, internal finishing, as well as the construction of main building elements including foundations, stairs, doors and windows. Different Building insulation & materials is presented, explained & discussed.

ARCH 256 Computer-Aided Architectural Design -2 (2-2-3)   Prerequisite(s): ARCH 150

This course builds on skills learnt in the first computer aided architectural design course. Students will develop their computation skills to reach professional ability to produce technically clear drawings, including 2D and 3D simulations and computer presentations and advanced rendering techniques.

ARCH 305: Architecture Design Studio -5 (0-10-5)   Prerequisite(s): ARCH 204 & ARCH 252

This course focuses on studio problems to enhance students' ability to develop initial investigative skills, critical thinking, and evaluation skills needed in synthesis of building form using varied materials, contemporary structural systems to design a high-rise residential building. Building codes and regulations such as: built up area, setbacks, and height regulations are part of the project analysis. The course will build students' understanding of basic principles, application, and performance of building services systems including safety and egress.

ARCH 306: Architecture Design Studio -6 (0-10-5)   Prerequisite(s): ARCH 305 & ARCH 342

This urbanism studio course aims to raise students' awareness of the architect's role in the community. The students consider the functional and formal relations between urban components including buildings and spaces surrounding them, and focus on the varied and complex needs of the users of urban environment. They also focus on sustainability issues related to architectural and urban design, and recognize the influence of codes, rules, and regulations, on the urban design. So students can design building(s) as a part of public realm taking into account functional, formal, socio-economic, environmental… aspects and in the frame of existing regulations.

ARCH 340: Research Methods in Architecture and Urban Design (1-2-2)   Prerequisite(s): GSEM 200

This course introduces students to the concepts, tools, and skills needed to conduct scientific research in architecture and urban design. Students are introduced to the various research methods and design. They learn how to prepare research objectives, rationale and testable hypotheses, and collection and analysis of data based on a comprehensive treatment of specific strategies for investigating the built form. The course also includes training in library use, archival research, on-line and electronic searching, print resources, and the application in a small semester research.

ARCH 341: Theory of Architecture (3-0-3)   Prerequisite(s): ARCH 231

This course offers an introduction to issues of architectural theory and practice of the 20th century through lectures and discussions. The course examines the interaction of philosophical, cultural, ethical and socio-economic concepts and architectural form and expression. It explores the relationships between buildings and their historical and cultural contexts.

ARCH 342: Urban Design (3-0-3)   Prerequisite(s): ARCH 231

This course is a study of the basic principles of urban design, which are required for the design of a new area, or re-developing an existing area. The course will include the influence of the climatic, ecological, technological, economic and social factors on design. Open spaces, pedestrian and car movement, and public and private utilities are some of the urban design elements discussed in this course.

ARCH 343: Introduction to Landscape Architecture (3-0-3)   Prerequisite(s): ARCH 240

This course will introduce the students to the terminologies, elements, and principles of landscape architecture. It focuses on natural landscaping with the use of native plants and the urban landscaping with community and place considerations. The course involves the review of distinguished landscape architecture projects chosen from historic traditions and global cultures. The course presents parallel and divergent canons and traditions.

ARCH 350: Structure in Architecture -1 (3-0-3)   Prerequisite(s): ARCH 252 & GPHY 112

This course familiarizes the student with the role of structures and their elements in the design process of architectural space. The student is introduced to the basics of building structures that relate to the architectural design discipline. The topics that are covered include tension and compression forces and stresses; moment, deflection and torsion forces in building structural members... etc.; structural frames with flat surfaces and structural shapes such as tents systems, vaults, domes, and membrane structures.

ARCH 351: Structure in Architecture -2 (3-0-3)   Prerequisite(s): ARCH 350

This is the second part of the previous course ARCH 350. The course will focus on the effects of forces and stresses in structural elements (frames, columns, etc). It will also provide students with an understanding of the structural design process, the mechanics of reinforced concrete, and the ability to design structural concrete members including slabs, beams, columns, and footing.

ARCH 352: Building Structures and Materials (3-0-3)   Prerequisite(s): ARCH 351

In this course, the students will learn the analytical Behavior of Advanced structural systems such as large pavilion spans, Space frames, thin shell structure and domes in terms of statically function and spatial characteristics in non-mathematical terms. The approaches to structure and the effects of materials, geometry and construction techniques are integrated into the course content. The course will also cover systems of circulation and fenestration.

ARCH 361: Photography (2-2-3)   Prerequisite(s): None

In this course, students are introduced to the basics of photographic equipment and print techniques along with the study of photographic art and its use in architectural graphic and presentation. Topics covered include angle of vision, image formation, photographic perspective and background, use of light and photographic illusion techniques.

ARCH 362: Saudi Traditional Architecture (3-0-3)   Prerequisite(s): ARCH 232

The contents of this course deal primarily with the study of the urban fabric and its vocabulary in Saudi Arabian cities with the main goal to acquaint the student with local architectural heritage in Saudi Arabia. This is achieved through a review and analysis of historical elements and their respective locations in Saudi Arabia and the Islamic world, classification of these elements, their use and benefits in the traditional and in modern setting. A part of the course focuses on the characteristics of traditional architecture style in the Hejaz region in general and the city of Jeddah in particular.

ARCH 363: Psychology and Sociology in Design (3-0-3)   Prerequisite(s): ARCH 240

The course covers the introductory information related to the different concepts and concerns of the effects of psychological and social implications, which resulted from designing and forming the human built-up environment. It also covers the studies related to the different concepts of reading the human built-up environment.

ARCH 364: Color and Lighting Principles (3-0-3)   Prerequisite(s): ARCH 252

This course focuses on the use of natural and artificial lighting in architecture and visual comfort requirements and its effects on the choice of colors and building design. It includes a study on surfaces' lighting properties such as glare and surface reflection.

ARCH 365: Acoustics in Architecture (3-0-3)   Prerequisite(s): ARCH 252

This course focuses on the study of sound in the surrounding environment, its transmission and the effects on building design. The course enhances understanding of principles and properties such as propagation, reflection, and absorption. In addition, the course includes a review of the basics of noise control in buildings and sound amplifications systems.

ARCH 366: Computer-Aided Architectural Design -3 (2-2-3)   Prerequisite(s): ARCH 256

This course builds on skills learned in the other two computer aided architectural design courses taught in the core. The students will focus on architectural drawings with 3D simulations, and computer presentations and rendering.

ARCH 367: Facilities Management (3-0-3)   Prerequisite(s): ARCH 252

In this course students will be introduced to the principles of facilities management, where facilities management is defined as the practice of coordinating the physical workplace with the people and work of the organization. It integrates the principles of business administration, architecture, and the behavioral and engineering sciences to achieve building high quality performance.

ARCH 368: Special Topics in Architecture (3-0-3)   Prerequisite(s): Junior level

This course offers opportunity for the study of advanced architectural topics tailored to fit the requirements of an architecture student in a junior standing. Dept. approval is required for the course specification.

ARCH 369: Approved Courses (3-0-3)   Prerequisite(s): Dept. approval

Courses that could be approved by the department and allowed to an architecture student in a specific situation. A written "Dept. approval" is required.

ARCH 407: Architecture Design Studio -7 (1-10-6)   Prerequisite(s): ARCH 306 & ARCH 351 & Good standing

This studio course aims to train students in the applications and development of more complex architectural design tasks. They will deal with design studies preparation (search and data collection, data analysis, problem definition, preparation of architectural programs and listing of alternatives); building codes and regulations; and economic considerations in building design. The course also deals with technical issues such as building structural systems, building mechanical systems (HVAC), vertical and horizontal circulation.

ARCH 408: Architecture Design Studio -8 (1-10-6)   Prerequisite(s): ARCH 407 & ARCH 455 & Good standing

This is an advanced studio in special projects examining particular architectural determinants, and in architectural research. This course is a comprehensive architectural design studio. It emphasizes the wide-ranging integration of building systems within an ordered design concept and understanding and using the unique qualities of materials, construction technology, and assembly details in the expression of architectural ideas. Analysis includes economic considerations in building design, the planning and integration of structural systems, building service systems, and building envelope design as an appropriate architectural expression.

ARCH 444: Housing and Economics (3-0-3)   Prerequisite(s): ARCH 342

Through lectures, assignments and case studies, this course identifies, describes and analyzes the important principles of housing concepts and terminologies, approaches and aspects of sustainable infrastructure. By applying all theoretical aspects in lectures into a project as optimal problem solving that considers environmental, socio-cultural, physiological and financial dimensions of design decisions at limited scale for a small neighborhood, the course material is presented under five broad themes such related to affordable housing, healthful housing, model neighborhood, site planning, the model neighborhood concept, is identified and discussed as a complementary but often overlooked component of the project as a part of design thinking.

ARCH 446: Comparative Architectural Thoughts (3-0-3)   Prerequisite(s): ARCH 341

Building on concepts taught in ARCH 341, this course concentrates on a more detailed study of different worldwide architectural thoughts. It challenges and discusses the new and progressed concepts and concerns that formulate the pillars of shaping and composing the built environment. The many issues of varieties and differences in values and concerns of various regions in terms of social, economic and natural conditions will be discussed The course covers all periods of architectural evolution until 21st century.

ARCH 453: Energy and Design (2-2-3)   Prerequisite(s): ARCH 240

This is an introductory course, which discusses main energy sources (solar, thermal, and wind). The course will expose the student theoretically and practically to basics in heat transfer and the thermal properties of the building envelope. It includes the study of the basics of human thermal comfort, analysis of climatic factors and their effects on architectural design. In addition, the course includes the study of building form and the thermal properties of building material and their effect on building thermal performance and building energy requirement.

ARCH 454: Mechanical, Electrical, and Safety Systems (3-0-3)   Prerequisite(s): ARCH 252

This course is an overview of mechanical, electrical, plumbing, fire systems for buildings as used by architects. It is also an introduction to system design principles, overview of the relevant calculations, drawings, standards and conventions. It builds up a technical background that help them analyze different systems and solving problems related to these systems.

ARCH 455: Working Drawings (1-4-3)   Prerequisite(s): ARCH 351

This course develops the understanding and the required skill needed for the production of architecture working drawings and construction documents. Through lectures, assignments, and a complete project development the course identifies, describes, and analyzes the important principles of working drawings and detailing requirements. The students are required to follow the principles of the construction industry by producing digital drawings of site plans, floor plans, elevations, wall sections, building sections, architectural details, technical services plan, schedules, and writing outline specifications at any scale of architectural drawings documents. By the end of the course, the students should submit a complete set of illustrating technical documentation.

ARCH 461: Planning and Design of Human Settlement (2-2-3)   Prerequisite(s): ARCH 342

Through lectures, assignments and case studies, this course identifies, describes and analyzes the important principles, approaches and aspects of Planning and Design of Human Settlement. By contextualizing sustainability as optimal problem solving that considers environmental, socio-cultural, economical dimensions of design decisions at urban planning scale.

ARCH 462: Urban Conservation (3-0-3)   Prerequisite(s): ARCH 342

This course focuses on planning and design of built environment. Lectures will provide advanced knowledge in urban conservation, which is a basic component in sustainable environmental policy. Students will assess and analyze the physical appearance of an urban area as an on-going transformation process. Urban culture will be considered as a rich source of form and spatial process in future urban conservation.

ARCH 463: Historic Building Restoration (3-0-3)   Prerequisite(s): ARCH 232

This course provides the essentials of restoration and conservation of built environment. The course lectures, discussion and group work provides students with simple methods for critical assessment of cultural significance of a building or group of buildings.

ARCH 464: Introduction to Interior Design (3-0-3)   Prerequisite(s): ARCH 204

The course will cover topics related to interior design such as: composition, space and furniture based on function and activity. It also focuses on developing integrated design as a visual layout between interior elements and considerations for psychological and behavioral factors. Methods to analyze the influence of new activities so that such patterns can be used for design concept.

ARCH 465: Introduction to Real Estate (3-0-3)   Prerequisite(s): ARCH 306

This course is an introduction to real estate industry. It helps students to widen their horizons on real estate that has a potential significant role in economic development. The course topics show that the manner in which a real estate projects is implemented can impact negatively or positively on the industry. The lectures will cover the developers' view on aspects of real estate business practices.

ARCH 466: Introduction to Building Economics (3-0-3)   Prerequisite(s): ARCH 306

This course is an overview to building cost estimate, investment analysis and tendering process. It offers brief introduction to principles of economics as fundamentals of the construction industry, process and firms. Students will learn general economic models for analysis of construction projects and for examine projects from micro perspective and marketing strategy.

ARCH 456: Project Management (3-0-3)   Prerequisite(s): ARCH 352

Through lectures, assignments and case studies, this course teaches the students to learn about planning projects, defining project scope and translating physical needs into building area, developing alternative solutions, preparing schedules and estimates, coordinating work efforts, and other practical factors. The student will develop the skill to consider physical constraints, laws, code implications, costs, bidding, construction sequencing and practices, design goals, assembling teams, and working with consultants.

ARCH 457: Professional Practice (3-0-3)   Prerequisite(s): Internship

This course is an introduction to principles of professional practice, focusing on the historical, ethical, and legal framework of the practice of architecture. The course includes a review to the responsibility of architects in the development of communities and environments. The summer internship experience is an integral part of this course. The course includes portfolio development and writing internship report.

ARCH 471: Architecture Design Studio -9: Capstone Project -1 (0-10-5)   Prerequisite(s): ARCH 408 & Good standing

In this course, students start to work on their Capstone Projects to present an Architectural Conceptual Design to be completed in ARCH 472. Students prepare a comprehensive proposal for their project and gather all relevant information in the form of an architectural program, which could be ready to follow in the next design stage.

ARCH 472: Architecture Design Studio -10: Capstone Project -2 (0-10-5)   Prerequisite(s): ARCH 471 & Good standing

This course is a continuation of ARCH 471 in which the previously prepared Architectural Conceptual Design is transformed into a completed comprehensive design solution through a defined philosophical direction and a clear vision. This is achieved by stressing the use of analytical logic in presenting the main design problem(s), methods of evaluation, and the formulation and selection of the most appropriate design alternatives. This course is the culmination of work in Architecture Design Studio courses.

College Math Courses for the Architecture (ARCH) Major

MATH 127: Calculus for Engineers (2-2-3)   Prerequisite(s): GMAT 141A

Functions, limits, continuity, trigonometric functions, tangents, velocities, and other instantaneous facts of change; Derivatives, the chain rule, implicit differentiation, higher derivatives, exponential functions, inverse functions, and their derivatives; The mean value theorem, monotonic functions, concavity, and points of inflection; Applied maximum and minimum problems; Definite and indefinite integrals, the fundamental theorem of calculus.

Architecture

Advising flowchart

*Classes which may require Dept. approval. **Internship.

	Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8	Semester 9	Semester 10
							GMTH 141A			
							MATH 127			
							Physical and Environmental Wellbeing			
						Quantitative Reasoning				
						Scientific Literacy				
					GENG 161				Architecture Technical Elective 2	
					English Language				Architecture Technical Elective 3	
					GSEM 200					
				Arabic Language		Architecture Technical Elective 1	Foreign Language			
						ARCH 340	Foreign Language			
							Civic Engagement			
	Information, Media and Technology		Islamic Thought and Ethics	ARCH 252	ARCH 350	Cultural Literacy	Global Awareness	ARCH 557**	Islamic Thought and Ethics	
	GISL 171									
		ARCH 240	ARCH 256	ARCH 341	ARCH 351	ARCH 352	ARCH 453	ARCH 446	Architecture Technical Elective 4	
	ARCH 120	ARCH 150	ARCH 231	ARCH 232	ARCH 342	ARCH 343	ARCH 454	ARCH 455	ARCH 444	ARCH 556
	ARCH 101	ARCH 102	ARCH 203	ARCH 204	ARCH 305	ARCH 306	ARCH 407	ARCH 408	ARCH 571*	ARCH 572