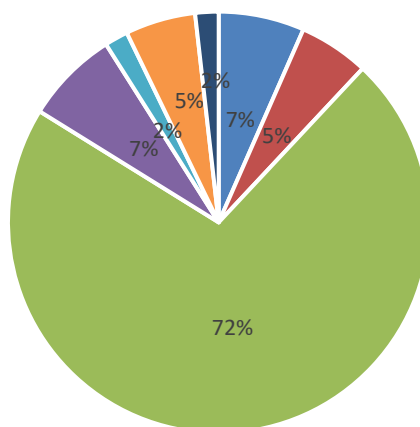


# Bachelor of Architecture 2024

## Program Components



- University Requirement (UR)
- College Requirement (CR)
- Major Requirement (MR)
- Major Elective (ME)1
- Major Support Requirement (MSR)
- General Studies Elective (GSE)2
- Training (Internship) Yes

University Requirement (UR)	11
College Requirement (CR)	9
Major Requirement (MR)	120
Major Elective (ME) <sup>1</sup>	12
Major Support Requirement (MSR)	3
General Studies Elective (GSE) <sup>2</sup>	9
Training (Internship) Yes	3
Total Credit (CRD)	167

<sup>1</sup> Student must select four ARC(3XX , 4XX & 5XX) courses from Major Elective(ME) List.

<sup>2</sup> Student must select three General Studies Electives( 1xx & 2xx), one of them must be from Humanities and Social Science.

Note:

- Free Elective Courses any UOB course excluding:(1) courses offered for special students, (2) courses covered in the B.Sc. curriculum, (3) courses equivalent or lower than those already taken in the curriculum and should not be a science course prepared by College of Science for other colleges.
- HU/SS Courses - Humanities and Social Science Component: Any course from the following:  
Humanities: Fine Arts, History, American Studies, Classics, Communications, English, (Foreign Language) French, Music, Philosophy, Theatre, Literature (Arabic), Religion (comparative).  
Social Science: Anthropology, Economics, Education, Geography, History, Psychology, Sociology, Women's Studies, Political Science.

**Teaching Language:** English

## Detailed Study Plan

### Year 1 - Semester 1

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 110	Design Fundamentals I	3	2	4	MR		Yes
ARC 111	Design Communication I	3	2	4	MR		Yes
MATHS 106	Mathematics for Built Environment	3	0	3	CR		No
ENGL 101	Communication Skills	3	0	3	CR		No
HRLC 107	Human Rights	2	0	2	UR		No
1XX	Elective - Liberal Arts	3	0	3	GSE		No

### Year 1 - Semester 2

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 120	Design Fundamentals II	3	2	4	MR	ARC 110 ARC 111	Yes
ARC 121	Design Communication II	3	2	4	MR	ARC 110 ARC 111	Yes
PHYCS 107	Physics for Building Design	3	0	3	MSR		No
ENGL 242	Report Writing & Presentation	3	0	3	CR	ENGL 101	No
ARC 122	Site Studies	2	2	3	MR	ARC 111	Yes

### Year 2 - Semester 3

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 210	Architectural Design I	6	0	6	MR	ARC 120 ARC 121 ARC 122	Yes
ARC 211	Theory of Architecture	3	0	3	MR	ARC 120	Yes
ARC 212	Materials & Building Construction I	3	0	3	MR	ARC 120	Yes
ARC 213	Environmental Control I	3	0	3	MR	ARC 120 PHYCS 107	Yes
ISLM 101	Islamic Culture	3	0	3	UR		No

### Year 2 - Semester 4

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 220	Architectural Design II	6	0	6	MR	ARC 210	Yes
ARC 221	History of Architecture	3	0	3	MR	ARC 210	Yes
ARC 222	Materials & Building Construction II	3	0	3	MR	ARC 212	Yes
ARC 223	Digital Communication I	2	2	3	MR	ARC 210	Yes
ARC 224	Environmental Control II	3	0	3	MR	ARC 213	Yes

### Year 3 - Semester 5

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 310	Architectural Design III	6	0	6	MR	ARC 220	Yes
ARC 311	Digital Communication II	2	2	3	MR	ARC 223	Yes
ARC 312	Urban Design	3	0	3	MR	ARC 220	Yes
ARC 313	Building Services	3	0	3	MR	ARC 222	Yes
ARC 314	Architecture of the Islamic World	3	0	3	MR	ARC 221	Yes

### Year 3 - Semester 6

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 320	Architectural Design IV	6	0	6	MR	ARC 310	Yes
ARC 321	Housing	3	0	3	MR	ARC 310	Yes
ARC 322	Architectural Working Drawings I	2	4	4	MR	ARC 222 ARC 313	Yes
ARC 3XX	Elective – Professional Studies	3	0	3	ME	69 Credits	Yes
HIST 122	Modern Bahraini History & Culture	3	0	3	UR		No

### Training Requirement (Summer)

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 395	Architectural Training	0	6	3	MR	85 Credits	No

#### Year 4 - Semester 7

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 410	Architectural Design V	6	0	6	MR	ARC 320	Yes
ARC 411	Architecture of the Modern World	3	0	3	MR	ARC 314	Yes
ARC 412	Architectural Working Drawings II	2	4	4	MR	ARC 322	Yes
2XX	Elective - Liberal Arts	3	0	3	GSE		No

#### Year 4 - Semester 8

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 420	Architectural Design VI	6	0	6	MR	ARC 410	Yes
ARC 421	Contracts & Implementation of Documents	3	0	3	MR	ARC 410	Yes
ARC 4XX	Elective – Professional Studies	3	0	3	ME	86 Credits	Yes
2XX	Elective - Liberal Arts	3	0	3	GSE		No

#### Year 5 - Semester 9

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 510	Graduation Design I	3	0	3	MR	ARC 420	Yes
ARC 511	Project Management	3	0	3	MR	ARC 421	Yes
ARC 5XX	Elective – Professional Studies	3	0	3	ME	104 Credits	Yes
ARAB 110	Classic Arabic Literature	3	0	3	UR		No

#### Year 5 - Semester 10

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 520	Graduation Design II	6	0	6	MR	ARC 510	Yes
ARC 521	Architectural Professional Practice	3	0	3	MR	ARC 421	Yes
ARC 5XX	Elective – Professional Studies	3	0	3	ME	104 Credits	Yes

## Major Elective Courses

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ARC 330	Advanced Building Technology	3	0	3	ME	69 Credits	Yes
ARC 331	Architecture Photography	3	0	3	ME	69 Credits	Yes
ARC 332	Advanced GIS Application	3	0	3	ME	69 Credits	Yes
ARC 333	Bahrain Building Regulations	3	0	3	ME	69 Credits	Yes
ARC 334	Special Topics in Architecture	3	0	3	ME	69 Credits	Yes
ARC 430	Advanced Topics in Computer Applications	3	0	3	ME	86 Credits	Yes
ARC 431	Sustainability in Architecture	3	0	3	ME	86 Credits	Yes
ARC 432	Landscape Architecture	3	0	3	ME	86 Credits	Yes
ARC 433	Interior Design for Architects	3	0	3	ME	86 Credits	Yes
ARC 434	Research Methods in Architecture	3	0	3	ME	86 Credits	Yes
ARC 530	Energy Conservation in Buildings	3	0	3	ME	104 Credits	Yes
ARC 531	Introduction to Real Estate Developments	3	0	3	ME	104 Credits	Yes
ARC 532	Architectural Heritage and Conservation	3	0	3	ME	104 Credits	Yes
ARC 533	Marketing Strategies for Architects	3	0	3	ME	104 Credits	Yes
ARC 534	Behavioral Factors in Architecture	3	0	3	ME	104 Credits	Yes
ARC 535	Architecture Creative Writing	3	0	3	ME	104 Credits	Yes

## Liberal Arts Elective Courses:

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ART133	Fundamentals of music and its appreciation	3	0	3	GSE		No
ART141	Drawing and painting	3	0	3	GSE		No
ART221	Traditional music of Bahrain and its application	3	0	3	GSE		No
CHL101	Introduction to Chinese language	3	0	3	GSE		No
CSC103	Computer Programming for Scientists and Engineers	3	0	3	GSE		No
ENGL130	Introduction to Literature	3	0	3	GSE		No
FA121	Artistic Photography (1)	3	0	3	GSE		No
FA215	Color Theory and Applications	3	0	3	GSE		No
FREN141	French I	3	0	3	GSE		No
FREN142	French II	3	0	3	GSE		No
GERM101	Introduction to German	3	0	3	GSE		No
JAPN101	Japanese level I	3	0	3	GSE		No
JAPN102	Japanese level II	3	0	3	GSE		No
KL101	Korean language I	3	0	3	GSE		No
PSYC103	Introduction to Psychology	3	0	3	GSE		No
PSYC120	Psychology of Marriage	3	0	3	GSE		No
PSYC281	Thinking Skills	3	0	3	GSE		No
SOCIO161	Introduction to Sociology	3	0	3	GSE		No
SOCIO181	Introduction to Anthropology	3	0	3	GSE		No
SOCIO191	Citizenship, Identity and Globalization	3	0	3	GSE		No
SOCIO226	Sociology of Arabian Gulf	3	0	3	GSE		No
SPAN101	Spanish I	3	0	3	GSE		No
STAT273	Probability and Statistics	3	0	3	GSE		No
TL101	Turkish Language	3	0	3	GSE		No

**Note: The Liberal Arts Elective Courses List is Updated in SIS, students should refer to the SIS when registering for these courses.**

## Course Description

**Course Code:** ARC 110      **Course Title:** Design Fundamentals I

Introduces fundamental design principles of architecture: design elements, spatial relationships and types of spatial organizations. Focuses on the basic elements of design such as point, line, shape, form, space, color, texture and light. Explores the design principles such as proportion, harmony, rhythm, emphasis, balance, and unity. Introduces spatial relationships: spaces within spaces, adjacent spaces, interlocking spaces, and spaces linked by common spaces. Explains linear, clustered, radial, and grid design organizations. Illustrates how to resolve two and three dimensional design problems employing creative thinking and fundamentals of design.

**Course Code:** ARC 111      **Course Title:** Design Communication I

Introduces the principles of architectural communication through drawing techniques and the use of drawing tools. Articulates in detail the techniques of plain geometric construction and orthographic projection in drafting the planer components (vertical, horizontal) of solids. Introduces the use of parallel projections (viz, axonometric, isometric) in drafting geometric solids, architectural floor plans, elevations and sections. Focuses on accuracy, neatness, layout composition and architectural lettering.

**Course Code:** ARC 120      **Course Title:** Design Fundamentals II

Introduces colors, textures and light and their effects on perception of spaces and surfaces. Emphasizes on relationships and differences between abstract and functional design. Introduces the functional definition of space, requirements for activities, circulation, furniture, equipment, movement and relationships between spaces. Focuses on creativity, conceptual thinking and application of design fundamentals in an introductory architectural project.

**Course Code:** ARC 121      **Course Title:** Design Communications II

Introduces the principles of design communication through freehand sketching and drafting techniques. Emphasizes on three-dimensional representation of architectural mass and space. Focuses on perspective projection of architectural interiors and exteriors. Introduces shades and shadows in plans, elevations and three-dimensional projections. Articulates architectural rendering techniques to produce drawings to represent reality.

**Course Code:** ARC 122      **Course Title:** Site Studies

Introduces sites and their tangible and intangible characteristics as relevant to architectural design. Defines 'site'. Introduces boundary, zones, contours and land formations, context, things and objects as well as spaces and the characteristics that emerge from them. Focuses on access, climate, site inventories, forces and their impacts on sites. Introduces the ideas of authority and power, control, planned interventions and spontaneous transformations of sites. Explains site analysis, site understanding and experiencing the site.

**Course Code:** ARC 210      **Course Title:** Architectural Design I

Introduces design as a process of resolving architectural problems with spatial organization, geometry and structure. Emphasizes on theoretical and philosophical understanding as the approach to design with architectural concepts of space, form, composition, function, circulation, orientation and aesthetics. Introduces the ideas of site analysis, design concept, design brief, function and functional relationships and their roles in the organization of indoor and outdoor spaces and built forms. Introduces the idea of design proposal and its constituents. Articulates how to design a residential project and offers guidance, tutoring and critique for the students to develop a residential design project, employing fundamental design principles. Guides students to present a design proposal for a design jury using free hand and drafting techniques of design communication.

**Course Code:** ARC 211      **Course Title:** Theory of Architecture

The course introduces architecture as a creative domain and the numerous approaches that inform its practice. It introduces the philosophies articulated by the celebrated architects and offers an understanding of the value of architectural ideas in generating architecture. It offers an introduction to the ideas of 'space' and 'place'; definitions, meanings and concepts and the ways in which spaces become places. It focuses on the emotional and tactile dimensions of the built forms and sensual and visual articulation of forms and spaces. The course offers an approach to architecture based on the processes that generate ideas potent in creating meaningful poetic forms and places.



**Course Code:** ARC 212      **Course Title:** Materials & Building Construction I

Introduces the erection sequence, analysis of structural systems and materials for building construction. Elaborates on site work: excavation and drainage; sub-structure: foundations and basements; superstructure: masonry bearing wall, steel and concrete framing systems and roofing structures. Introduces vertical transportation systems: stairs, ramps and lifts.

**Course Code:** ARC 213      **Course Title:** Environmental Control I

Introduces the principles of environmentally responsive buildings. Focuses on the relationship between the building envelope and its surrounding by investigating the impact of climate, thermal energy, natural ventilation and solar protection on buildings in compliance with the local codes and guidelines.

**Course Code:** ARC 220      **Course Title:** Architectural Design II

Introduces a small scale multi-functional design project at neighborhood level. Articulates how to establish and integrate appropriate spatial relationships to produce a coherent spatial ensemble and forms in relation to a site and its analysis. Articulates how to respond to the needs and aspirations of people and how to conceptualize structure, materiality and construction characteristics. Offers tutoring and critique for the students to develop a multi-functional design project, employing the fundamental principles of design, an appropriate theoretical and philosophical basis, and an understanding of people's needs. Guides the students to present for a design jury using free hand drafting techniques of design communication.

**Course Code:** ARC 221      **Course Title:** History of Architecture

The course introduces history of architecture of the ancient civilizations and extends to the knowledge of European architecture from the classical period of Greece and Rome to the medieval era. Furthermore, it examines various factors affecting the evolution of the built environment and present architecture as a complex visual and spatial art generated by society, politics and culture. Additionally, it underlines noteworthy buildings in these periods and the approaches of historically significant architects. It also investigates the evolution of architecture from the Renaissance to the Industrial revolution in the west, and the Colonial architecture of the Indian sub-continent.

**Course Code:** ARC 222      **Course Title:** Materials & Building Construction II

Introduces building materials and enclosure systems: Roofing structures (flat roofs, steep roofs, green roofs). Non-structural walls, glazing, doors and windows. Focuses on various types of cladding materials (masonry veneer, stone, precast concrete, GRC, metal, glass & EIFS). Introduces finishes: materials and components for walls and floors.

**Course Code:** ARC 223      **Course Title:** Digital Communication I

Introduces standard Computer-Aided Design (CAD) and REVIT programs to produce informative two-dimensional (plans, sections, elevations) and three-dimensional architectural drawings and digital models (mapping and rendering). Emphasizes on current and potential digital applications of computers in architectural design.

**Course Code:** ARC 224      **Course Title:** Environmental Control II

Introduces the concept of indoor environmental quality comprised of heat, sound and light. Articulates climate and how its impact is mediated by the building envelope to create an appropriate environmental quality in the interiors. Focuses on how to achieve thermal, audio and visual comforts, by employing concepts, principles and practices of establishing and managing appropriate levels of cooling loads, acoustics and natural daylight and artificial lighting.

**Course Code:** ARC 310      **Course Title:** Architectural Design III

Introduces an intermediate scale multi-functional design project. Articulates how to establish and integrate appropriate spatial relationships to produce a coherent spatial ensemble and forms in relation to site analysis and environmental considerations. Articulates how to respond to people's needs and to conceptualize structures, materiality, construction characteristics, climatic variables, site conditions and their impact on the orientation, spatial ensemble and built forms. Introduces local codes on safety and accessibility standards. Offers tutoring and critique for the students to develop a multi-functional design project, employing the principles of design, a theoretical and philosophical basis, an understanding of people's needs and responses to the environmental forces. Guides the students to present a design proposal for a design jury using techniques of digital communication.

**Course Code:** ARC 311      **Course Title:** Digital Communication II

Introduces Building Information Modelling (BIM) concepts and applications as advanced techniques of Computer-Aided Design (CAD). Articulates architectural modelling, representation, lighting, materials, shade analysis, project management, quantity take-off, specifications and rendering related to architectural design practice.

**Course Code:** ARC 312      **Course Title:** Urban Design

Introduces the fundamental principles for understanding and reading the city at different levels of complexity. Introduces students to theoretical and methodological approaches to designing cities through lectures and hands-on activities to understand urban forms and their social implications. Approaches urban design and landscaping through the prism of people and space relationships. Emphasises on urban design and landscaping approaches as an innovative paradigm of evidence-based inquiry. Introduces the Geographic Information Systems (GIS).

**Course Code:** ARC 313      **Course Title:** Building Services

Introduces the principles, implementations and performance of building service systems. Focuses on plumbing (fresh water and sewerage), electrical, vertical transportation, fire prevention and safety. Explains HVAC (Heating, Ventilation and Air Conditioning) systems employed to provide appropriate levels of heat and qualities of air as required by functions of interior spaces.

**Course Code:** ARC 314      **Course Title:** Architecture of the Islamic world

The course introduces the architecture of the Islamic world with an overview of the historical development of the Islamic cities. It explores different typologies of buildings such as mosques, public buildings, palaces and traditional houses. It focuses on Islamic principles and their evolution over time and gives rise to a variety of architectural forms in different regions. It examines how this architecture was the product of harmonies integration between socio-cultural, economic, physical and technological aspects. It further investigates the urban concepts and building components of the indigenous architecture in the Kingdom of Bahrain.

**Course Code:** ARC 320      **Course Title:** Architectural Design IV

Introduces a moderately complex multi-functional design project. Articulates how to create appropriate spatial relationships to produce a coherent spatial ensemble and forms in relation to site analysis, environmental considerations and cultural forces. Articulates how to respond to people's needs and to conceptualize structures, materiality, and construction characteristics, in response to climatic variables, site conditions, social issues and precedent studies. Applies local codes on safety and accessibility standards. Offers tutoring and critique for the students to develop a multi-functional design project, employing the principles of design, a theoretical and philosophical basis, an understanding of people's needs, responses to the environmental forces and culture. Guides the students to present a design proposal for a design jury using techniques of digital communication.

**Course Code:** ARC 321      **Course Title:** Housing

Introduces housing as a practice of the provision of houses by the external agencies. Explains the concepts of housing, houses, homes and dwellings. Focuses on methods of housing provision and self-help housing, informal settlements, and mass-housing: multi-storey apartments, neighbourhoods and individual units. Discusses the role of the architect in these different contexts and focuses on designing layouts and housing units for adaptability, change, transformation and personalisation. Articulates the concepts of family, culture, community and identity, as relevant to housing. Emphasises on the appropriateness of supports and infills as an alternative to mass housing. Discusses affordability, financial dimensions and sustainability.

**Course Code:** ARC 322      **Course Title:** Architectural Working Drawings I

Introduces conventional construction details and how to innovate new architectural details appropriate for a selected design project. Introduces techniques, graphics conventions and standards used in working drawings emphasizing on plans, elevations, sections and construction details. Focuses on the interrelationship between design and construction through working drawings. Articulates how to employ materials, structures, technologies and services to produce construction details. Guides students to produce a set of architectural working drawings for a specific project.

**Course Code:** ARC 395      **Course Title:** Architectural Training

Assigns and supervises the students in architectural professional training in approved government agencies and architectural consultancy offices after completing 85 credits in the approved architecture program during the summer for a duration of 300 Hours (8 weeks). Oversees the training program enabling students to gain experience in the architectural practices by ensuring that they are engaged in office work and/or site supervision. Evaluates the students' experience and achievements through a report and presentation made to the training supervisor at the end of the training period.

**Course Code:** ARC 410      **Course Title:** Architectural Design V

Introduces a complex multi-functional design project. Articulates how to create appropriate spatial relationships to produce a coherent spatial ensemble and forms in relation to site analysis, environment, culture and housing needs. Articulates how to respond to people's needs spatially and conceptualize structures, materiality, construction systems, and building envelopes responding to climatic conditions, site forces, social issues and precedents. Introduces building regulations and local codes on safety and accessibility. Offers tutoring and critique for the students to develop a multi-functional housing project, employing the principles of design, a theoretical and philosophical basis, an understanding of people's needs and responses to environmental forces and culture. Guides the students to present a design proposal for a design jury using techniques of digital communication.

**Course Code:** ARC 411      **Course Title:** Architecture of the Modern World

The course introduces the theories and philosophies that dominated the 20th and 21st centuries. It contextualizes the rise of Modern Architecture, introduces its various stylistic expressions and worldwide dissemination; the postmodern reaction and the various contemporary styles and philosophies that followed. It discusses the pivotal social, economic, technological, and political events that have shaped our current understanding and approach to architecture. It examines architecture criticism and its impact on architectural discourse. It focuses on the significant architectural ideologies and styles in the context of globalization and the specific regional and local contexts.

**Course Code:** ARC 412      **Course Title:** Architectural Working Drawings II

Guides the students to produce construction details and specifications for the same project of Architectural Working Drawings I with additional details on external walls, internal partitions, balconies, staircases, roofs, doors, windows, covered ways, canopies, ceilings, furniture, fittings and landscape features. Emphasizes on innovation, practicality and functionality of the details, selected materials, fixing and construction techniques.

**Course Code:** ARC 420      **Course Title:** Architectural Design VI

Introduces a highly complex multi-functional design project. Articulates how to create appropriate spatial relationships to produce a coherent spatial ensemble and forms in relation to site analysis, environment, culture and technology. Articulates how to respond to people's needs and to conceptualize structure, materiality, construction characteristics, responding to climatic variables, sites, social issues and structural systems. Applies building regulations, and local codes on safety and accessibility. Offers tutoring and critique for the students to develop the design project, employing the principles of design, a theoretical and philosophical basis, an understanding of people's needs, responses to the environmental forces, culture and technology. Guides the students to present a design proposal for a design jury using techniques of digital communication.

**Course Code:** ARC 421      **Course Title:** Contracts & Implementation of Documents

Introduces the construction industry and its key characteristics, projects and project lifecycle. Explains the building contracts and their context, which extend from the planning to tendering and construction phases. Examines different types of contracts and different ways of contractor selection. Analyses the primary contract documents involved in the tendering phase: bonds, construction drawings, specifications, and bills of quantities. Provides an overview of the current laws and regulations governing construction tenders and contracts in the Kingdom of Bahrain.

**Course Code:** ARC 510      **Course Title:** Graduation Design I

Guides the students to produce a report based on an in-depth research of a complex architectural design problem to address an identified architectural need. Articulates how to define a project, locate and develop an appropriate theoretical and philosophical basis for the design, conduct case studies and analysis, develop a detailed architectural program, select a site and analyze it, and identify potential sustainable solutions. Emphasizes on developing an understanding of the architectural project as a response to meet the functional and technical needs based on an appropriate structure and technologies in the context of social, cultural, environmental forces and economic constraints. Guides and offers critique to conceptualize and develop design ideas and alternative preliminary proposals.

**Course Code:** ARC 511      **Course Title:** Project Management

Provides an overview of the project management framework: operations vs. projects, project characteristics, project management context and knowledge areas. Examines project stakeholders during the different project stages and their roles, requirements, and expectations. Introduces approaches to task breakdown and focuses primarily on schedule and cost management fundamentals. Guides the students to carry out manual and computer-aided project management exercises for small building projects: making work breakdowns, planning resources, estimating costs (bills of quantities) etc.

**Course Code:** ARC 520      **Course Title:** Graduation Design II

Guides the students to develop the design ideas and the preliminary proposals produced in Graduation Design I. Offers tutoring and critique for the students to develop the design project, employing the principles of design, a theoretical and philosophical basis, an understanding of people's needs, responses to the environmental forces, culture and technology. Responds to the complexity of site and the surrounding context. Guides the students to present a design proposal for a design jury using techniques of digital communication. Applies building regulations, and local codes on safety and accessibility.

**Course Code:** ARC 521      **Course Title:** Architectural Professional Practice

Introduces professional ethics, privileges and responsibilities of an architect in the practice of the profession. Introduces the international standards, particularly RIBA and the Code of Conducts. Explains the educational route to the architecture profession. Develops an understanding of the roles and the responsibilities of the building team: client, design team, construction team and statutory authorities. Discusses architect's registration, organizing an Architectural firm, various ways of obtaining projects, information retrieval for design etc. Focuses on laws, regulations and building codes pertinent to the Architectural and Engineering practice in the Kingdom of Bahrain.

## Major Elective Courses Descriptions (ME):

**Course Code:** ARC 330      **Course Title:** Advanced Building Technologies

Introduces advanced building technologies to produce smart buildings. Explains the systems and techniques to achieve integrated sustainable built environment. Lectures on passive and active design strategies, heating, cooling, ventilation, lighting systems, renewable energy, 3D construction printing and smart façade systems. Focuses on conceptualizing on the assembly of smart and sustainable buildings.

**Course Code:** ARC 331      **Course Title:** Architecture Photography

Introduces architectural photography, notable photographers, their works and techniques, evolution of architectural photography with case studies and critical appraisal. Explains photography as an art: elements and rules, camera settings for an architectural photoshoot, photo-shooting techniques and equipment particular to architectural photography. Focuses on photographic documentation of an exterior or interior of a building, key image post-production tools used in architectural photography from Lightroom to Photoshop. Guides the students to practice the art of photography and editing of architectural photography necessary to create a concise and strong documentation of a building.

**Course Code:** ARC 332      **Course Title:** Advanced GIS Application

Introduces the Geographic Information Systems (GIS) as a tool that manages, describes, analyzes, and presents data about features such as location, size, shape and descriptive information known as attribute data. Explains how they represent social and environmental data as maps and GIS as valuable tools for a wide range of fields. Discusses the applications in architecture and planning. Guides the students to apply GIS in architecture and other fields by introducing the tool.

**Course Code:** ARC 333      **Course Title:** Bahrain Building Regulations

Presents all the building permit regulations and their interpretations in the Kingdom of Bahrain in accordance with the latest international standards and best practices of all categories: residential, commercial and Industrial in accordance with the requirements of ministry of works, civil defense, EWA and municipalities affairs & urban planning.

**Course Code:** ARC 334      **Course Title:** Special Topics in Architecture

Introduces various aspects of architecture not offered in any of the defined electives. It is to be proposed by a faculty based on his/her interest and justified for being relevant and of interest to the students to advance their knowledge or skills related to architecture. The instructor who wishes to offer this course shall propose the course description and have it approved by the Architecture Program Council. The course thus varies from semester to semester.

**Course Code:** ARC 430      **Course Title:** Advanced Topics in Computer Applications

Applications of advanced computer-aided design (CAD) techniques use BIM architectural design practice and incorporate up-to-date development as an environmental-based architectural design tool such as the environment and building energy-savings and U value. Introducing the concept of animation and Virtual Reality (VR) and proceeding to create 4D and VR models of architecture and urban design projects by employing advanced visualisation and walk-through principles in the design process and representation.

**Course Code:** ARC 431      **Course Title:** Sustainability in Architecture

Explores the sustainability concepts and practices that can be used to design sustainable buildings and neighborhoods. Provides a synopsis of the basic elements and trends that define sustainability practices in architecture. Examines how environmentalism has informed and impacted architectural discourses and vice versa. Considers critically holistic strategies for sustainability within the built environment and how these strategies contextually relate to architectural problem solving. Provides an insight into sustainable architecture as a discursive construct and examines the competing logics of green buildings.

**Course Code:** ARC 432      **Course Title:** Landscape Architecture

Introduces the practice of defining spaces and places in response to functional needs in the outdoors by means of landforms, paved surfaces, trees, plants and bushes, artefacts, sculptures and built objects. Introduces contours, levels and landforms in sites. Introduces trees, plants and bushes, endemic to the local terrain and climate. Articulates how to define boundaries to spaces without structures and produce rooms enclosed by vegetation, landforms, levels, steps, ramps and sculptures. Focuses on visual and tactile experience and the orchestration of framed views, vistas and sceneries. Illustrates the role of water bodies in spatial experience and how to ensure their existence. Guides the students to produce a simple landscape in relation to a built structure.

**Course Code:** ARC 433      **Course Title:** Interior Design for Architects

Introduces the principals of interior design and how to apply them in a moderately complex interior design project. Introduces the concepts such as themes, ambiance, harmony, and other fundamental principles. Emphasizes on the need to have a theoretical and philosophical basis and to respond to people's needs and culture. Articulates concepts and ideas related to spatial arrangements, circulatory patterns, walls, partitions, ceilings and openings, focusing on finishing materials, color, texture, furniture, light, artefacts, paintings, sculpture, objects and indoor planting.

**Course Code:** ARC 434      **Course Title:** Research Methods in Architecture

Introduces research as a systematic process. Provides an explanation of how to formulate research questions, the different research methodologies (quantitative, qualitative, and experimental) and how to select appropriate research methods and execute research studies in architecture. Portrays the process of documentation, knowledge dissemination and the application of research results in architectural design and practice. Discusses the importance of integrating research into practice for developing new knowledge, solving design and technical problems,

overcoming different types of challenges present in the contemporary profession, and improving the design outcomes.

**Course Code:** ARC 530      **Course Title:** Energy Conservation in Buildings

Discusses common forms of clean energy within green building practices. Focuses on both the theory and practice of producing electrical energy from non-fossil fuel sources. Introduces different types of energy efficient building materials and design options while assessing available forms of renewable energy including solar, wind, hydro, biomass, tidal and geothermal. Examines the benefits and limitations involved in harnessing each of these renewable energies in the built environment with the ultimate purpose of minimizing harmful impacts on individuals, communities and the environment.

**Course Code:** ARC 531      **Course Title:** Introduction to Real Estate Development

Introduces the fundamental principles and forces that underlie real estate development including: the stages of development, sources of data, funding and financing, sustainability and the role of regulations. Discusses how cities change and respond to the economic, technological, social, and political forces that shape urban developments. Outlines the different types of real estate development and developers. Examines the interdisciplinary, high stakes nature of real estate development and presents the phases, procedures and complexities of developing and redeveloping various property types.

**Course Code:** ARC 532      **Course Title:** Architectural Heritage & Conservation

Introduces architectural conservation and its concepts: heritage, conservation, preservation, restoration and monuments. Introduces international organizations, charters and legislation. Explains the principles and practices of conservation related to tangible and intangible heritage. Discusses documentation and recording of heritage buildings, inventories of heritage sites, conservation processes, analysis and design. Focuses on the adaptive re-use of heritage buildings in the context of the Kingdom of Bahrain. Provides an overview on the phases of the restoration of individual monuments and heritage sites. Discusses the conservation of world heritage sites in the Kingdom of Bahrain.

**Course Code:** ARC 533      **Course Title:** Marketing Strategies for Architects

Introduces marketing skills useful for architects to effectively promote their services and improve their businesses. Explains marketing principles and how to apply them in the context of architecture. Focuses on branding, client targeting, pricing strategies, online marketing and networking.

**Course Code:** ARC 534      **Course Title:** Behavioral Factors in Architecture

Introduces people place relationships as related to architecture. Introduces the origin of research field: environmental psychology and man-environment studies among others. Elaborates on behaviour and environment. Introduces theories of determinism, interactionism and transactionism. Explains theories such as affordance, personal space, defensible space, stimulus response theory and others. Explains internal and external processes of human behaviour. Guides the students to carry out a small research related to environment and behaviour.

**Course Code:** ARC 535      **Course Title:** Architecture Creative Writing

Introduces the art of writing creatively about architecture. Introduces different types of writing: academic research papers, reports, essays, newspaper articles, literature, poetry, and scripts for drama. Focuses on narrative craft, architectural appreciation and the use of various traditions of poetry and poetics. Articulates the art of writing reviews of building projects, autobiographies of architects, celebratory writing on architects, personal narratives of architectural experiences, architectural poems and spatial poetry.

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## University Requirements Courses Descriptions

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**Course Code:** ARAB 110

**Course Title:** Arabic Language Skills

This course focuses on basic Arabic skills including form, function, and meaning. It also helps the student to appreciate and understand structures and approach them from a critical point of view, through various genres in literature.

**Course Code:** HIST 122

**Course Title:** Modern History of Bahrain and Citizenship

Spatial identity of Bahrain: Brief history of Bahrain until the 18th century; the historical roots of the formation of the national identity of Bahrain since the 18th century; the modern state and evolution of constitutional life in Bahrain; the Arabic and Islamic dimensions of the identity of Bahrain; the core values of Bahrain's society and citizenship rights (legal, political, civil and economic); duties; responsibilities and community participation; economic change and development in Bahrain; Bahrain's Gulf, Arab and international relations.

**Course Code:** HRLC 107

**Course Title:** Human Rights Principles

This course deals with the principles of human rights in terms of the definition of human rights, scope, sources with a focus on the International Bill of Human Rights; The Charter of the United Nations; Universal Declaration of Human Rights; The International Covenant on Economics, Social and Culture rights; Convention against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment; Mechanics and the Constitutional Protection of Rights and Public Freedoms in Kingdom of Bahrain.

**Course Code:** ISLM 101

**Course Title:** Islamic Culture

An introduction to the general outline and principles of Islamic culture, its general characteristics, its relationships with other cultures, general principles of Islam in beliefs, worship, legislation and ethics.

## Major Support Requirement Courses Descriptions (MSR):

**Course Code:** PHYCS 107      **Course Title:** Physics for Building Design

Fundamentals of heat transfer through building envelope: Air to air heat transmittance (U), internal and external surface conductance (h), thermal conductivity of building materials (k). Relationships between interior finishing materials and (U) values. Nature of light, light transmission, reflection and absorption. Basic properties of light (photometric quantities): Light intensity (I), luminous flux (lx), illumination level (E), luminance (L). Photometric laws: Abney's law, inverse square law, cosine law. Nature of sound: Audible sounds. Sound quantities: Sound intensity level (I) and sound pressure level (p). Sound reflection and absorption in enclosed spaces. Reverberant sound and reverberation time (RT). Sound transmissions through partitions and building envelope. Sound reduction index.



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## College Requirement Courses Descriptions

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**Course Code:** ENGL 101      **Course Title:** Communication Skills I

This course focuses on reading skills and strategies and language development. The reading section concentrates on high-interest contemporary topics and encourages students to increase speed and efficiency. The writing component, integrated to the reading materials, reviews grammatical structures, develops language accuracy and Introduces paragraph writing. Students are required to upgrade their grammar, reading, and listening skills on the internet.

**Course Code:** ENGL 242      **Course Title:** Report Writing & Presentation

Technical Report Writing prepares students to design and compose effective technical documents, with particular emphasis on technical reports and oral presentations. The lecture hour is dedicated to theories, techniques and presentations. The tutorial hour is assigned to discuss the written reports feedbacks.

**Course Code:** MATHS 106      **Course Title:** Mathematics for Built Environment

Introduction to geometry, trigonometry, and the applications of these for the design of shapes and surfaces. Vectors in two and three dimensions. Fractal geometry. History and applications of mathematics in design, architecture and landscape.