Bachelor of Architectural Engineering (BAE)

Program Structure and Credit Hours

Degree Requirement

The Bachelor's degree in Architectural Engineering (BAE) requires the completion of **144** credits. Hrs.Classified as follows:

Course Type	Credit Hours
1. University General Education Requirements	
(a) University Required Courses	**18**
(b) University Elective Courses	**6**
2. College Required Courses	**23**
3. Specialization Required Courses	**83**
4. Graduation Project Courses	**6**
5. Specialization Elective Courses	**6**
6. Training courses	**2**
Total Credit Hours	**144**

University General Education Requirements:

University Compulsory Courses (6 Courses - 18 Credit hours)

No	CourseID	Course Name	Credit Hours (Cr. Hr.)
1	EMS112	Emirates studies	3
2	ENG113	Advanced English Writing	3
3	ENG211	Public Speaking	3
4	THI211	Critical Thinking and Quantitative Reasoning	3
5	INN311	Innovation & Sustainable Entrepreneurship	3
6	AIT111	Artificial Intelligence	3

University Elective Courses (2 courses – 6 credit hours- 4 Baskets)

1. **The student must select one course from the three different baskets below (3 credit hours)**

A. Humanities and Arts

No.	Course No	Course Name	Credit Hours
1	ART111	Introduction to Art	3
2	TBD	Conversational French	3
3	HPSC111	History and Philosophy of Science	3
4	LAW106	Human Rights	3
5	ISL114	Islamic Culture	3
6	WLT115	World Literature	3

B. Natural Sciences

No.	Course No	Course Name	Credit Hours
1	PHY111	General Physics	3
2	CHM111	General Chemistry	3
3	BIO111	General Biology	3
4	FUT101	The Science of the Future	3
5	AST211	Astronomy	3
6	ENV113	Science of Energy and Global Environment	3
7	PHY113	Physics for Daily Life (Arabic)	3
8	GEO102	Planet Earth	3
9	RES211	Research Methodology	3

C. Social and Behavioural Sciences

No.	Course No	Course Name	Credit Hours
1	PSY111	General Psychology	3
2	CRM101	Introduction to Criminology	3
3	LAW112	Work Ethics	3

4	LED111	Leadership and Team Building	3
5	INF112	Media Culture	3
6	SSW111	Social Responsibility	3

D. Quantitative and Technology

2. The student will take <u>one</u> course from this basket (3 credit hours)

No	Course No	Course Name	Credit Hours
1	STA113	Introduction to Data Analysis	3

College Required Courses

MATH/PHYSICS/CHEMISTRY (23 credit hours)

No	Course ID	College Required Courses	Credit Hours	Th.-Lab-Tut. Hours	Prerequisite
1	MTH121	Engineering Mathematics I	3	3-0-2	-----
2	PHY121	Engineering Physics I	4	3-2-2	-----
3	CHE101	Chemistry for Engineers	3	2-2-0	-----
4	MTH122	Engineering Mathematics II	3	3-0-2	MTH121
5	PHY122	Engineering Physics II	4	3-2-2	PHY121
6	MTH221	Engineering Mathematics III	3	3-0-2	MTH122
7	MTH222	Engineering Mathematics IV	3	3-0-2	MTH221
		Total	**23**		

Specialization Required Courses (83 Credit hours)

No.	Course ID	Course Name	Credit Hours (Cr. Hr.)	Th.-Lab-Tut. Hours	Pre-requisites
1	ARC110	INTRODUCTION TO DESIGN	3	1-0-4	----
2	ARC117	ARCHITECTURAL & INTERIOR GRAPHICS	3	1-0-4	-----
3	ARC120	ARCHITECTURAL DESIGN I	4	1-0-6	ARC110 & ARC117
4	ARC121	HISTORY OF ARCHITECTURE	3	3-0-0	----
5	ARC210	ARCHITECTURAL DESIGN II	4	1-0-6	ARC120
6	CIE211	STATICS	3	3-0-2	PHY121
7	ARE253	BUILDING INFORMATION MODELING (BIM)	3	1-4-0	ARC117
8	ARE233	BUILDING CONSTRUCTION ENGINEERING	3	2-2-0	ARC117
9	CIE222	CIVIL ENGINEERING MATERIALS	4	3-2-0	CHE101 &Co CIE212
10	CIE212	MECHANICS OF MATERIALS	3	3-0-2	CIE211 & MTH122
11	ARE254	GENERATIVE/PARAMETRIC DESIGN	3	1-4-0	ARE253
12	ARE234	CONSTRUCTION METHOD & EQUIPMENT	3	2-2-0	ARE233
13	CIE331	STRUCTURAL ANALYSIS I	3	3-0-0	CIE212
14	CIE361	GEOTECHNICAL ENGINEERING **I**	3	2-2-0	CIE222 & CIE212
15	MEC205	ENGINEERING MECHANICS-DYNAMICS	3	3-0-1	CIE211
16	ARC373	SUSTAINABLE ARCHITECTURE	3	3-0-0	PHY121
17	CIE334	DESIGN OF REINFORCED CONCRETE STRUCTURES	3	3-0-2	CIE331 & CIE222
18	ARE331	ADVANCED BUILDING CONSTRUCTION TECHNOLOGY	3	2-2-0	ARE234
19	ARE300	ARCHITECTURAL ENGINEERING DESIGN	3	1-0-4	ARC210 & CIE334
20	ARE374	BUILDING MECHANICAL SYSTEMS	3	3-0-0	PHY121
21	CIE431	DESIGN OF STEEL STRUCTURES	3	3-0-0	CIE331
22	ARE532	CONSTRUCTION PROJECT MANAGEMENT	3	3-0-0	ARE331
23	CIE371	ENGINEERING ECONOMICS	3	3-0-0	MTH122 & STA114
24	ARE533	ADVANCED CONSTRUCTION PROJECT MANAGEMENT	3	3-0-0	ARE532
25	ARE472	LIGHTING AND ACOUSTICS IN ARCHITECTURE	3	2-2-0	PHY122
26	ARE473	BUILDING ELECTRICAL SYSTEMS	2	2-0-0	PHY122
27	ARE530	PROFESSIONAL PRACTICE, SPECIFICATION & COST ESTIMATION	3	3-0-0	ARE331
		Total	**83**		

Graduation Projects (two courses - 6 credit Hours)

No.	Course ID	Course Name	Credit Hours (Cr. Hr.)	Th.-Lab-Tut. Hours	Pre-requisites
1	ARE500	GRADUATION PROJECT I	3	1-4-0	ARE300
2	ARE501	GRADUATION PROJECT II	3	1-4-0	ARE500
		Total	**6**		

Specialization Elective Courses

List of specialization electives (to select two courses – 6 Cr. Hr.)

No.	Course ID	Course Name	Credit Hours (Cr. Hr.)	Th.-Lab-Tut. Hours	Pre-requisites
1	ARE580	SELECTED TOPICS IN ARCHITECTURAL ENGINEERING	3	3-0-0	Year 4
2	ARC582	REAL ESTATE DEVELOPMENT (MANAGEMENT)	3	3-0-0	Year 4
3	ARC585	RESEARCH & DESIGN METHODS	3	3-0-0	Year 4
4	ARE421	LEGAL ISSUES IN CONSTRUCTION LAWS	3	3-0-0	Year 4
5	CIE332	STRUCTURAL ANALYSIS II	3	3-0-0	Year 4 & CIE331
6	ARE420	CONSTRUCTION ESTIMATION	3	3-0-0	Year 4 & ARE331
7	CIE471	SPECIFICATION AND QUANTITY SURVEYING	3	3-0-0	Year 4 & ARE331
8	CIE241	SURVEYING I	3	2-2-0	Year 4 & MTH121
9	ARE333	WORKING DRAWING AND CONSTRUCTION DETAILS	3	1-4-0	Year 4

Architectural Engineering Training Courses

(2 credit hours)

No.	Course ID	Course Name	Credit Hours (Cr. Hr.)	Th.-Lab-Tut. Hours	Pre - requisites
1	ARE351	ARCHITECTURAL ENGINEERING TRAINING I	1	8 weeks *	Year 3
2	ARE352	ARCHITECTURAL ENGINEERING TRAINING II	1	8 weeks *	Year 4 & ARE351
		Total	**2**		

* Minimum 30 hours per week for 8 weeks