



Arab Republic of Egypt
Ministry of Higher Education
Benha University
Faculty of Engineering at Shubra
Architectural Engineering Department



Website:

<https://feng.bu.edu.eg/index.php/architecture>

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Mission of Architectural Engineering Program

“The Architectural Engineering Program at Shoubra Faculty of Engineering, Benha University, is committed to providing a distinguished educational service and graduating a competent architect equipped with mental, scientific, technical, innovative and practical capabilities and skills that qualify him to practice architectural engineering at a professional level and to compete in the labor market locally and regionally as well as to actively contribute to the development of society and the

advancement of architecture and scientific research, within the framework of human and moral values.

Program Objectives

- 1) To provide a broadly-based educational experience in which the essential scientific and technical elements of architecture curriculum are integrated with the humanities and social sciences to prepare students with competencies needed for personal enrichments, career development, and lifelong learning.
- 2) To ensure that the graduates understand the highest standards of personal and professional integrity, and ethical responsibility in the practice of architectural engineering.
- 3) To ensure that the graduates are well trained in several areas of architectural engineering.
- 4) To ensure the ability of students in defining, analyzing and solving a wide range of architectural engineering problems using modern tools and techniques.
- 5) To provide students with a major design experience involving a team approach and alternate solutions, and incorporating realistic constraints that include economic, environmental, ethical, safety, social, and political considerations.

Graduate Attributes

According to the National Academic Reference Standard (NARS2018), the graduates of Architecture program must satisfy the following attributes:

- 1) A graduate who are Familiar with knowledge, theoretical sciences, applied sciences, engineering, humanities and social sciences related to architecture and urban design that qualifies graduates to practice the profession of architecture and be compatible with both the needs of society and the labor market.
- 2) A graduate who are familiar with continuous self-learning, developing skills, and keeping pace with developments in the field of specialization to generate innovative ideas and achieve sustainability requirements.
- 3) A graduate who can use the scientific method in monitoring, identifying, and analyzing architectural and urban problems by defining the problem and collecting the necessary information, classifying, analyzing, and developing appropriate solutions for facing problems and produce architectural, urban,

and planning design projects with due efficiency and quality.

- 4) A graduate who can use modern technology techniques in all areas of specialization related to buildings, coordination with constructional and electromechanical disciplines, and the ability to use advanced digital tools in the design and implementation of buildings and virtual simulation to evaluate and produce innovative designs that achieve efficient performance considering the surrounding environmental and urban influences.
- 5) A graduate who can communicate effectively with presentation, discussion, and persuasion with work teams to suggest various alternatives to the solution and evaluate them to choose the most suitable one.
- 6) A graduate who has ethics of the profession and has honest of competition with others. He has the scientific understanding and knowledge necessary for the requirements of the architectural specialization.
- 7) A graduate who can coordinate with all other disciplines. He can work with and lead a team of different engineering disciplines during the design and implementation phase. He also can manage human resources from workers and technicians.
- 8) A graduate who are familiarity with architectural and urban codes, laws, and requirements, and he can apply them to match local needs and aspirations to keep pace with global developments.

Program admission requirements

Having Egyptian Secondary education or equivalent certificate with major in Mathematics, then after passing the preparatory year and fulfilling the admission requirements the students will be able to attend the department.

Program Years:

Year	Hours		
	Compulsory	Elective	Total
First (Preparatory)	60	0	60
Second	60	0	60
Third	60	0	60
Fourth	52	8	60
Fifth	56	4	60
Subtotal Hours			300
Summer Training*			6
Total Hours			306

Program level and Courses:

Year of program 1 (Preparatory Year) Semester 1

a- Compulsory

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Prac.	Total
EMP 001	Mathematics (A)	4	2	-	6
EMP 012	Mechanics	2	2	-	4
EMP 013	Physics (A)	4	1	2	7
EMP 014	Chemistry	4	-	2	6
MET 001	Engineering drawing and Projection	1	4	-	5
GEN 001	Technical language	-	2	-	2

Year of program 1 (Preparatory Year) Semester 2

a- Compulsory

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Prac.	Total
EMP 021	Mathematics (B)	4	2	-	6
EMP 012	Mechanics	2	2	-	4
EMP 023	Physics (B)	4	-	2	6
MET 001	Engineering drawing and Projection	-	4	-	4
ELE 006	Computer science	2	1	-	3
MET 002	Production Engineering	2	-	3	5
GEN 002	History of engineering science	2	-	-	2

Year of program 2 (First Year Architecture) Semester 1

a- Compulsory

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC111	History & Theory of Architecture (1)	4	-	-	4
ARC112	Means of visual expression (A)	2	4	-	6
ARC113	Building construction (1/A)	2	4	-	6
ARC114	Architectural Design (1/A)	2	6	-	8
CVE141	Structural Analysis (1)	2	2	-	4
CVE142	Testing of Materials	1	1	-	2

Year of program 2 (First Year Architecture) Semester 2

a- Compulsory

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC121	History & Theory of Architecture (2)	4	-	-	4
ARC122	Means of visual expression (B)	2	2	-	4
ARC123	Building construction (1/B)	2	4	-	6
ARC124	Architectural Design (1/B)	2	6	-	8
ARC125	Computer Applications	2	-	2	4
CVE143	Structural Analysis (2)	2	2	-	4

Year of program 3 (Second Year Architecture) Semester 1

a- Compulsory

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC211	History & Theory of Architecture (3)	4	-	-	4
ARC212	Environmental control	2	2	-	4
ARC213	Building construction (2/A)	2	4	-	6
ARC214	Architectural Design (2/A)	2	6	-	8
SUR241	Surveying	2	2	-	4
CVE241	Reinforced Concrete (A)	2	2	-	4

Year of program 3 (Second Year Architecture) Semester 2

a- Compulsory

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC221	Philosophy & Methodologies of Design	4	-	-	4
ARC222	Building construction (2/B)	2	4	-	6
ARC223	Architectural Design (2/B)	2	6	-	8
ARC224	Urban Concepts	2	2	-	4
ARC225	Acoustics & Artificial Lighting	2	2	-	4
CVE242	Reinforced Concrete (B)	2	2	-	4
GEN003	Human Rights	1	-	-	1

Year of program 4 (Third Year Architecture) Semester 1

a- Compulsory

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC311	Urban Design	2	4	-	6
ARC312	Architectural Design (3/A)	2	6	-	8
ARC313	Working Drawings (1/A)	2	4	-	6
ARC34x	Elective course (1)	2	-	-	2
MEC314	Mechanical & technical installations	2	2	-	4
CVE341	Soil and Foundation	2	2	-	4

b- Elective

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC341	Building Equipment	2	-	-	2
ARC342	Project & site management	2	-	-	2
ARC343	Feasibility Studies of buildings	2	-	-	2
ARC344	Building and construction Insurance	2	-	-	2
ARC345	Building restoration & conservation	2	-	-	2
ARC346	Architecture for the future	2	-	-	2

Year of program 4 (Third Year Architecture) Semester 2

a- Compulsory

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC321	Planning of Residential Areas	2	4	-	6
ARC322	Interior Design	2	2	-	4
ARC323	Architectural Design (3/B)	2	6	-	8
ARC324	Working Drawings (1/B)	2	4	-	6
ARC34x	Elective course (2)	2	-	-	2
CVE342	Steel Structures	2	2	-	4

b- Elective

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC347	Heat transfer	2	-	-	2
ARC348	Renewable Energy	2	-	-	2
ARC349	Environmental Pollution	2	-	-	2
ARC350	Contextual Design	2	-	-	2
ARC351	Environmental impacts of projects	2	-	-	2
ARC352	Air movement in buildings	2	-	-	2

Year of program 5 (Fourth Year Architecture) Semester 1

a- Compulsory

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC411	Specifications & execution management	2	2	-	4
ARC412	Architectural Design (4)	2	6	-	8
ARC413	Working Drawings (2/A)	2	4	-	6
ARC414	Urban Planning (A)	2	4	-	6
ARC415	Applied Research	2	2	-	4
ARC44x	Elective 3	2	-	-	2

b- Elective

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC441	Geography of Cities	2	-	-	2
ARC442	Public utilities	2	-	-	2
ARC443	Open spaces and gardens landscape	2	-	-	2
ARC444	Aesthetic science and criticism	2	-	-	2
ARC445	Human Dimension in the Urban Environment	2	-	-	2
ARC446	Vernacular Architecture	2	-	-	2
ARC447	Preservation of historic buildings	2	-	-	2
ARC448	Environmental balance	2	-	-	2
ARC449	Architectural Integration	2	-	-	2
ARC450	Traditional Artistic crafts	2	-	-	2

Year of program 5 (Fourth Year Architecture) Semester 2

a- Compulsory

Code	Course Title	No. of hours / week			
		Lect.	Tut.	Lab	Total
ARC421	Professional Practice & Legislation	2	-	-	2
ARC422	Concepts of contemporary Architecture	2	-	-	2
ARC423	Working Drawings (2/B)	2	4	-	6
ARC424	Urban Planning (B)	2	2	-	4
ARC425	Graduation Project	2	14	-	16

Assessment Methods of Program Intended Learning Outcomes:

Formative assessment:	Summative assessments:
Discussions	Written Exams (midterm/final/ practical/take-home)
Studio work	Oral exams
Class activities	Reports
Research assignments	Group project
Quizzes	Individual project
Panel discussions	Essays

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