

Badr University in Cairo School of Engineering & Technology Assoc. Prof. Wafaa Rashwan Head of Architecture Engineering Department



Dr Wafaa Mohamed Kamal Rashwan works currently as the head of the Architecture Department in Badr university . She qualified and got her Bachler degree (1981), Master (1988), and her Ph.d degree (1995) from Helwan University. During her work career , she worked as the head of Architecture Department in Al-Salam Higher Institute of Engineering (2009-2012) . Dr. Wafaa worked also as a Vice-Dean for Educational and Students Affairs in Al Nahda University (2015-2016) .

## Word to Students

I am pleased to welcome all of my students .I am glad also to congratulate the newly commers of students ,hoping they will finde their intrests ,and their dreams with the family of teaching staff department . My hope to come hand by hand to build great and bright future to our countries . In school & university generaly you would have a great opportunity of freedome to think and conclude the best for youself , however such a freedome should be restricted to great values & ethics in order to get to your dreems and aims .

Our architecture department celebrate eminent reputable professors and staff members to provide you with distinguished standerd of education ,and help you to be competent researchers also in the field of architecture , according to the eminent world standered .

# why you should study architecture in school ?

### 1. To Become a brilliant architect and greet thinkers.

Being a brilliant architect and greet thinker is essential to tacle complicated problems and solve it within restricted environmental constrains, through a suitable design process, which starts by calculating data; analyzing it; and drawing a suitable strategy for solving the tackled problems.

### 2. Seeing and discovering the world

Everyone who study architecture must travel a lot and see more to explore different places, understand different cultures to be able to understand the meaning of the place and its context, in order to come out with the suitable solutions.

### 3. Because you love to make things.

In architecture school you are constantly making and producing things. Sketches, Drawings, models, renderings, 3d computer drawings, paintings, collages, photographs, portfolios, resumes, good ideas, the list goes on and on. Architecture school allows you to use that passion of creating things. Students often find themselves so focused in the process of making things.

### 4. To make great friends and meet some amazing people.

The people you go to architecture school with, quickly become your family, because you're all in this together. You'll spend more time with them than anyone else in your life. Some of the most important people in my life are the people who I went to architecture school with.

The American Institute of Architecture Students (AIAS) is an amazing community of Architecture Students from all over the world. <u>Several times a year the AIAS has</u> <u>conferences for students that brings together the larger community</u>. All architecture students should be attending these conferences for the opportunity to meet a great diverse group of really cool people.

Regardless of where you live, you will meet lots of people getting involved with the AIAS.

### 5. To think outside the box.

Architecture school is all about looking at problems from many different angles. Its not about getting from point A to point B. Its ALL about the journey that students go on to arrive at the right destination.

I struggled my whole life in school, until I landed myself in architecture school. Once I did, for the first time in my academic life, I felt like I was rewarded for my creative ideas, rather than being punished for not following instructions.

### 6. Discover what you are capable of doing.

The amount of personal growth that happens during the years of architecture school is mind blowing! Students enter as freshman totally intimidated by the work that thesis students are producing, and 5 years later they themselves are producing the same amount of work.

Everyone is capable of soo much more than they think they are. Architecture school is an amazing opportunity to test your limits of what you think is possible.

### 7. To become an Architect.

If you want to become an Architect, you have to build your own design firm and have your own legal, stamp drawings and then you can see your buildings get built, then architecture school is the first step of this process.

Becoming an Architect, is a 3 part process of: the proper education, on the job experience hours and passing the Architect Registration Exam.

On average it takes about 13 years from the day students started studying in architecture school, until they are a licensed architect. It took them about 15 years.

### 8. To help figure out what you want to do with your life.

Many people start architecture school and quickly realize that architecture isn't for them but get very clear understanding about what they should be doing. Maybe its graphic design, engineering, computer programming, art or whatever.

The intensity of architecture school helps people get very clear and discover what they should be doing with their lives, even if it isn't architecture.

#### 9. To have fun!

Architecture school is a ton of fun! Traveling the world, meeting cool architecture people, staying up all night, working really hard alongside your best friends and always testing the limits.

Some people (myself included) never wanted architecture school to end because it was soo much fun.

### 10. Studying Architecture will change your life.

Studying architecture definitely will change the way you see the world, and ultimately will change the way you think in life and the design form of your place and buildings.

# **General provisions**

## Article (1) Study System

The study takes place in the English language and by the credit hour system. The study extends over five levels, each level includes two semesters of no less than 14 weeks each, in addition to a summer semester of no less than seven weeks. The study for all programs begins at the general level, which is followed by four specialized levels, according to the nature of each program.

## Article (2) Attribute of the credit hour system

The study system used in all programs is the American system of credit hours within the context of one semester.

### 1. Concerning theoretical lectures:

One credit hour is calculated for every one hour per week lecture during one semester.

### 2. For practical lessons and practical exercises:

One credit hour is calculated for each 2-3-hour workshop or exercise per semester.

The following table shows the student's position in the study system depending on the number of credit hours that the student finishes studying in proportion to the total number of hours for each program:

Academic level	Defining the position in the study system	Percentage of credit hours that he successfully passed
0	Freshman	From 0% to 20%
1	Sophomore	From 20% to 40%
2	Junior	From 40% to 60%
3	Senior -1	From 60% to 80%
4	Senior -2	From 80% to 100%

## Article (3) Academic Adviser

Each student is assigned an academic advisor to be selected from faculty members to follow up and assist the student in choosing courses for each semester according to the study plans. The academic advisor does the following:

- Advising the student academically and socially and following up on the student to help him overcome the difficulties throughout his studies
- Directing and assisting the student in choosing the academic track and assisting in determining the courses in which he will be registered each semester according to the registration conditions.

- Helping the student to choose the minor and the graduation project.
- The academic advisor may advise the student to repeat courses in which the student has already succeeded, or ask him to register for additional courses to raise the GPA to achieve the graduation requirements.

## Article (4) Conditions for registration

A student can register for courses in the main semester, after the approval of the academic advisor, with a maximum number of credit hours following the following rules:

- Up to 21 credit hours for a student with a GPA greater or equal to 3.0.
- Up to 18 credit hours for a student with a GPA greater than or equal to 2.0 but less than 3.0, and this number is registered in the first semester after the student's enrollment.
- Up to 14 credit hours for a student with a GPA less than 2.0.

### Article (5) Requirements for obtaining a bachelor's degree

To obtain a Bachelor of Engineering degree, the student must complete the required credit hours following the conditions stipulated in each program.

- A GPA of no less than 2.0 is required upon graduation
- The student must achieve success in the graduation project.
- The student must perform summer training for 8 weeks during the years of study in one of the industrial or service establishments or consulting houses related to his specialization, and this is under the supervision of the college and submits a full report on the training period.

### Article (6) student evaluation course

- The grades of each course are distributed as percentages of the total score of the course. The grades are divided into the student's activity scores, the midterm exam scores, the practical exam scores, and the final exam scores.
- The description of each course provides for the distribution of scores on the different evaluation methods. The College Board may amend the distribution of grades after coordination with the relevant department and announce that distribution to students before the start of the academic semester. The student fails the course and gets a grade (F) if the total grades he obtained in the course are less than 60% of the total score of the course or he is prevented from attending the final exam due to exceeding the percentage of absence or by a disciplinary decision, or he did not attend the exam without providing an acceptable excuse From the College Board.

- For the student to be considered successful in the course, he must obtain at least 40% of the final written exam scores specified for the course. This condition does not apply to courses that do not have a final exam. If the student does not achieve this percentage, he will receive an (F) grade regardless of the total grades obtained in this course.
- The student must attend at least 75% of the total hours of lectures, exercises, and laboratories for the academic headquarters for him to be allowed to attend the final exam of the course.

## Article (7) Course Estimates

The number of points for each course is calculated according to the total scores he obtained during his study of this course (activities - mid-term exam - practical exam - final exam). The following table shows the number of points and the estimate in terms of the scores obtained:

Number of points	Grades	The percentage obtained by the student
4.00	A+	97% or higher
4.00	A	93% to less than 97%
3.70	A-	89% to less than 93%
3.30	B+	84% to less than89%
3.00	В	80% to less than 84%
2.70	B-	76% to less than 80%
2.30	C+	73% to less than 76%
2.00	С	70% to less than 73%
1.70	C-	67% to less than 70%
1.30	D+	64% to less than 67%
1.00	D	60% to less than 64%
0.00	F	less than 60%

Courses in which the student registers as a listener or in which he must pass only, or the student did not complete them for the reason that the faculty accepted them, and they are not included in the calculation of average points, for which one of the following grades is assigned:

indi	cation	Grades
Audit	مستمع	AU
Pass	ناجح	Р
Fail	راسب	F
Withdrawn	منسحب	W
Incomplete	غير مكتمل	I

## Article (8) Ranks of Honor and Granting of Excellence

- The honor degree is granted to a student whose cumulative GPA is not less than 3.3 upon graduation with achieving at least such a rate during all semesters of study, and to grant honors, the student must not have obtained an F grade in any course during his studies at the faculty and that it has not been completed Imposing any disciplinary punishment on the student during this period.
- The faculty establishe a system to encourage outstanding students by reducing tuition fees at gradual rates with the GPA. At the beginning of each semester, it announces a list of outstanding students and the fees reduction rates for each student.

# **Course Study Load in Credit Hours Program**

### What is a Course Credit?

It is the unit of rating the educational weight of the course, usually based on the number of weekly contact hours spent by the student in class throughout the semester.

At the Faculty of Engineering and Technology, the course weight ranges between 2 - 4 credits. One credit-hour lecture meets for 50 minutes per week. A one-credit-hour tutorial/lab meets 100 - 150 minutes per week.

## What is a Course Study Load?

It is the number of weekly personal hours spent by the student outside the class for studying and doing coursework tasks such as homework assignments, reports, projects, training, etc.

So, it is very important to balance the course study load to support the academic success of the student. There are only 24 hours in each day and only 168 hours in each week. The student needs 7-8 hours per day for sleep and spends 7-8 hours per day at the university. Thus, the student will have 8 - 10 hours per day for going home, studying, extracurricular activities, sports, cleaning, phone calls, TV, dressing, laundry, shopping, friends, parties, working, loafing, etc! If the course study load requires more hours than the time allowed, the student will perform poorly in many of the coursework activities in academia. So, balancing the course study load is vital.

## How to Determine Course Study Load based on Course Credits?

Credits of the course reflect the amount of effort required by the student, and the rule of thumb is:

#### For each credit hour of lectures, the student will spend approximately 2-3 hours of course study load

For tutorials or labs, the hours per week are considered to be all in class with no course study load (no outside class assignments), since the student is required to study and do some of the coursework assignments under the supervision of the faculty teaching assistants.

## **Study Loads of Engineering Courses**

- a. 3 credits course with 2 credit-hours of lectures will require 5-6 hours of course study load (i.e., the student will spend 4-6 hours per week on studying and doing course-work assignments outside the class)
- b. 3 credits course with 1 credit-hour of lectures will require 3 hours of course study load

- c. 2 credits course with 1 credit-hour of lectures will require 2-3 hours of course study load
- d. 2 credits course with 2 credit hours of lectures will require 4-5 hours of course study load
- e. Architecture courses with no credit hours of lectures will require 4-5 hours of course study load

# Educational Aims of the Programme and Potential Career Destinations of Graduates

The program aims to graduate architectural engineers who are specialized in environmental design view; with possession of a multi-disciplinary background in architecture and other related basic engineering sciences. The students will be trained to deal with architectural problems in a variety of settings to acquire the relationship between the building and the surrounding environment. Also; they have to propose different alternatives and compares them to choose the appropriate environmental design, innovatively and creatively consistent with the concept of green architecture.

The engineering graduate of the program will be able to:

- a) Apply knowledge of mathematics, science, and engineering concepts to the solution of engineering problems.
- b) Design a system; component and process to meet the required needs within realistic constraints.
- c) Design and conduct experiments as well as analyze and interpret data.
- d) Identify, formulate and solve fundamental engineering problems.
- e) Use the techniques, skills, and appropriate engineering tools, necessary for engineering practice and project management.
- f) Work effectively within multi-disciplinary teams.
- g) Communicate effectively.
- h) Consider the impacts of engineering solutions on society & the environment.
- i) Demonstrate knowledge of contemporary engineering issues.
- j) Display professional and ethical responsibilities; and contextual understanding
- k) Engage in self-and life-long learning.
- I) Demonstrate investigative skills, attention to detail, and visual/conceptual skills.
- m) Adopt a holistic problem-solving approach for complex, ambiguous, and open-ended challenges and scenarios.
- n) Demonstrate knowledge of cultural diversity, differences, and the impact of a building on community character and identity.
- o) Address urban issues, planning, and community needs through design work.
- P) Recognize the new role of the architectural engineer as the leader of design projects –who can understand, assemble and coordinate all of the disciplines – to create a sustainable environment.

# **Program Structure**

(Bylaw **2015**)

The program consists of **180** credit hours divided into 1**0** semesters as per the following reference study plan.

### Semester 1, Level 0, Credits = 18

#	Code	English Title	Credits
1	BAS 011	Mathematics (1)	3
2	BAS 021	Physics (1)	3
3	BAS 031	Mechanics (1)	3
4	BAS 041	Chemistry	3
5	BAS 061	Engineering Drawing and Projection	4
6	BAS 014	Information Technology	2

### Semester 2, Level 0, Credits = 18

#	Code	English Title	Credits
1	BAS 012	Mathematics (2)	3
2	BAS 022	Physics (2)	3
3	BAS 023	Computer Programming (1)	2
4	BAS 032	Mechanics (2)	3
5	BAS 033	Production Engineering	3
6	HUM X25	Engineering History and Introduction to Engineering Sciences	2
7	HUM 012	English Language	2

## Semester 3, Level 1, Credits = 17

#	Code	English Title	Credits
1	ARC 111	Visual Formation and Fundamentals of Design	3
2	ARC 112	Skiagraphy & Perspective	3
3	ARC 121	Theories of Architecture (1)	2
4	ARC 131	Building Construction (1)	3
5	CIV 110	Surveying	2
6	BAS X51	Statistics	2
7	HUM XXX	Elective Humanities-1	2

Semester 4, Level 1, Credits = 18

#	Code	English Title	Credits
1	ARC 122	History of Architecture (1)	2
2	ARC 132	Building Construction (2)	3
3	ARC 142	Introduction to Environmental Sciences	2
4	ARC 151	Architectural Design Studio (1)	4
5	CIV 140	Building Materials	3
6	HUM 111	Human Rights	2
7	HUM XXX	Elective Humanities-2	2

### Semester 5, Level 2, Credits = 18

#	Code	English Title	Credits
1	ARC 222	Thermal Environment Control	2
2	ARC 223	History of Architecture (2)	2
3	ARC 233	Building Construction (3)	3
4	ARC 252	Architectural Design Studio (2)	4
5	CIV 221	Structural Analysis	3
6	HUM X14	Scientific Thinking and Technical Report Writing Skills	2
7	HUM XXX	Elective Humanities-3	2

Semester 6, Level 2, Credits = 18

#	Code	English Title	Credits
1	ARC 224	Theories of Architecture (2)	2
2	ARC 242	Acoustics in Architecture	2
3	ARC 244	Principles of Green Architecture	3
4	ARC 253	Architectural Design Studio (3)	4
5	CIV 231	Concrete Structures	3
6	CIV 241	Sanitary Installations in Buildings	2
7	HUM X13	Communication and Presentation Skills	2

Semester 7, Level 3, Credits = 18

#	Code	English Title	Credits
1	ARC 325	History of Islamic Architecture	2
2	ARC 334	Working Drawings (1)	3
3	ARC 341	Electrical Installations and Lighting in Buildings	2
4	ARC 354	Architectural Design Studio (4)	4
5	CIV 322	Steel Structures	3
6	ARC 3XX	Elective-A-1	2
7	BAS X61	Engineering Economics	2

Semester 8, Level 3, Credits = 18

#	Code	English Title	Credits
1	ARC 314	Building Economics	2
2	ARC 321	New and Renewable Energy	2
3	ARC 335	Working Drawings (2)	3
4	ARC 355	Architectural Design Studio (5)	4
5	ARC 362	Urban Design	3
6	MEC 343	Mechanical Installations in Buildings	2
7	ARC 3XX	Elective-A-2	2

## Semester 9, Level 4, Credits = 19

#	Code	English Title	Credits
1	ARC 441	Assessment of Building Life-Cycle	2
2	ARC 435	Working Drawings (3)	3
3	ARC 456	Architectural Design Studio (6)	4
4	ARC 491	Project (1)	2
5	CIV 473	Projects Management	3
6	ARC 4XX	Elective-B-1	3
7	ARC 448	Buildings Evaluation Codes	2

Semester 10, Level 4, Credits = 18

#	Code	English Title	Credits
1	ARC 415	Buildings Performance Simulation	3
2	ARC 471	Bids Documents and Contracts	3
3	ARC 492	Project (2)	4
4	ARC 4XX	Elective-B-2	3
5	ARC 4XX	Elective-B-3	3
6	HUM X71	Legislations and Professional Ethics	2



# **Program Structure**

(Bylaw **2022**)

The program consists of **165** credit hours divided into **10** semesters as per the following reference study plan.

#### Semester 1, Level 0, Credits = 18

#	Code	English Title	Credits
1	BAS011	Mathematics (1)	3
2	BAS021	Physics (1)	3
3	BAS031	Mechanics (1): Statics	3
4	BAS041	Chemistry	3
5	BAS061	Engineering Drawing and Projection	4
6	HUMxxx	University Elective 1	2

### Semester 2, Level 0, Credits = 18

#	Code	English Title	Credits
1	BAS012	Mathematics (2)	3
2	BAS022	Physics (2)	3
3	BAS032	Mechanics (2): Dynamics	3
4	BAS033	Engineering Production	3
5	BAS023	Computer Programming (1)	2
6	HUM012	English Language	2
7	HUMx25	Engineering History and Introduction to Engineering Science	2

#### Semester 3, Level 1, Credits = 16

#	Code	English Title	Credits
1	ARE111	Architectural Design Fundamentals	2
2	ARE112	Architectural Drawings and techniques	3
3	ARE131	Building Construction (1)	3
4	ARE121	History of Architecture (1)	2
5	CVL111	Structural Analysis	2
6	BASx51	Statistics	2
7	HUMxxx	University Elective (2)	2

### Semester 4, Level 1, Credits = 16

#	Code	English Title	Credits
1	ARE113	Shadow and perspective	3
2	ARE141	Architectural Computer Applications (1)	2
3	ARE132	Building Construction (2)	3
4	ARE114	Architectural Design Studio (1)	3
5	CVL121	Construction Materials	2
6	HUM111	Societal Issues	1
7	HUMxxx	University Elective (3)	2

**Remarks:** Field training to be completed in the summer sessions.

## Semester 5, Level 2, Credits = 14

#	Code	English Title	Credits
1	ARE222	History of Architecture (2)	2
2	ARE233	Building Construction (3)	3
3	ARE251	Introduction to environmental science	2
4	ARE215	Architectural Design Studio (2)	4
5	CVL241	Construction Survey	2
6	HUMx14	Scientific Thinking and Technical Report Writing Skills	1
7	ARE222	History of Architecture (2)	2

### Semester 6, Level 2, Credits = 17

#	Code	English Title	Credits
1	ARE223	Theories of Architecture	2
2	ARE242	Architectural Computer Applications (2)	2
3	ARE234	Construction Technology	2
4	ARE216	Architectural Design Studio (3)	4
5	ARE235	Electromechanical systems in buildings	3
6	CVL251	Concrete Structures	2
7	HUMxxx	University Elective (4)	2

**Remarks:** Field training to be completed in the summer sessions.

#### Semester 7, Level 3, Credits = 18

#	Code	English Title	Credits
1	ARE352	Principles of Sustainable Architecture	2
2	ARE336	Working design (1)	3
3	ARE317	Architectural Design Studio (4)	4
4	ARE361	Landscape Architecture and Site Planning	3
5	CVL361	Steel Structures	2
6	BASx61	Engineering Economics	2
7	ARE38x	Elective-A-1	2

## Semester 8, Level 3, Credits = 16

#	Code	English Title	Credits
1	ARE353	Acoustics and Daylighting in Buildings	2
2	ARE343	Building Information Modeling	2
3	ARE318	Architectural Design Studio (5)	4
4	ARE337	Working design (2)	3
5	ARE362	Urban Design	3
6	ARE38x	Elective-A-2	2
7	ARE353	Acoustics and Daylighting in Buildings	2

**Remarks:** Field training to be completed in the summer sessions.

Semester 9, Level 4, Credits = 17

#	Code	English Title	Credits
1	ARE444	Simulation of building performance	2
2	ARE438	Working design (3)	3
3	ARE419	Architectural Design Studio (6)	4
4	ARE439	Building Economic and Construction documents	3
5	ARE49x	Elective-B-1	3
6	ARE471	Graduation project 1	2
7	ARE444	Simulation of building performance	2

#### Semester 10, Level 4, Credits = 15

#	Code	English Title	Credits
1	ARE454	Building Environmental Rating Systems	2
2	CVL489	Project management	2
3	HUMx71	Legislations and Professional Ethics	2
4	ARE49x	Elective-B-2	3
5	ARE472	Graduation project 2	4
6	HUMxxx	University Elective (5)	2

### **Course Estimates**

The number of points for each course is calculated according to the total scores he obtained during his study of this course (activities - mid-term exam - practical exam - final exam). The following table shows the number of points and the estimate in terms of the scores obtained:

التقدير	التقدير بالحروف	عدد النقاط	النسبة المنوية الحاصل عليها الطالب
	A+	4.00 - 3.80	95% الى 100%
ممتاز	А	3.79-3.60	90% حتى أقل من 95%
<u> </u>	A-	3.59-3.40	85% حتى أقل من 90%
ديد ددا	B+	3.39-3.20	80% حتى أقل من 85%
· • •	В	3.19-3.00	75% حتى أقل من 80%
ختر	C+	2.99-2.80	70% حتى أقل من 75%
	С	2.79-2.60	65% حتى أقل من 70%
مقبول	D	2.59-2.4	60% حتى أقل من 65%
راسب	F	0.00	أقل من 60%



# **Academic Astaff**

#### Full-time academic members:



Ass. Prof Wafaa Rashwan Head of architecture Depart Wafaa.rashwan@buc.edu.eg Room 335



DR Doha Mohamed eng.doha.m@buc.edu.eg Room 338



Prof Mona Hosny Mona.Hosny@buc.edu.eg Room 312



DR Eslam Moraekip Eslam.Moraekip@buc.edu.eg Room 340

### **Teaching Assistants:**



Kareem Aldali Kareem.Aldali@buc.edu.eg Room 336



Kareem Elhadry Kareem-elhadry@buc.edu.eg Room 336



Mervat Gaber MervatGaber@buc.edu.eg Room 336



Taher Mahmoud Taher.Mahmoud@buc.edu.eg Room 336



Nancy Elshandidy Nancy.Elshandidy@buc.edu.eg Room 336



Salsabel Samy Salsabel.Samy@buc.edu.eg Room 336



Samar Ibrahim Samar.Ibrahim@buc.edu.eg Room 336



Ayatallah Magdy Ayatallah-Magdy@buc.edu.eg Room 336



Amira Fawzy Amira.Fawzy@buc.edu.eg Room 336



AlHassan Gamal Alhassan.Gamal@buc.edu.eg Room 336



Alaa Mahgoub Ala.Mahgoub@buc.edu.eg Room 336



Mohamed Hassan Mohamed.Hassan@buc.edu.eg Room 336

## **Program mission**

The architecture program provides advanced education to prepare qualified competencies of architects that meet the needs of the labor market, and provides community and research services, which contribute to achieving sustainable development using modern education and the contemporary technical tools.

## **Program objectives**

1- Prepare trained qualified, experienced architects in the field of architecture who can uphold the ethics and traditions of the profession and possess the requisite scientific knowledge and awareness of the requirements of the specialization.

2- Motivate students to acquire and use contemporary theoretical and applied engineering knowledge and sciences in their field of expertise, and participate in research activities to ensure ongoing self-learning

3- Improve students' ability to follow the scientific method in creating ideas, problems solving, decisions making, and participating in developing practical design solutions to address current societal problems, as well as enhancing their capacity to contribute productively to a team effort.

4- Broaden students' perspectives, train them and develop their abilities and skills to understand the interaction between people and buildings as well as between buildings and their environment to assure the realization of the fundamental principles of sustainable design

5- Create a unique graduate who is able to prepare and assemble a portfolio of work in the architectural and urban designs suitable with the environmental requirements by using the latest technologies and tools, in addition to preparing their documents.

## **Graduate specifications**

The graduate should be able to:

1) Applying contemporary theoretical and applied engineering knowledge and sciences in the field of architecture, which are compatible with the social needs and the labor market.

2) Keeping up to date in the scientific and technological developments in the field of specialization and the allied fields and developing his skills through continuous self-learning.

3) Understand design problems with their functional, environmental and social aspects affecting building practices and apply this knowledge with innovative ideas to have architectural solutions to create a sustainable environment for design and urban projects.

4) Understand building methods, raw and building materials specifications, and finishes. and apply building requirements and construction laws and regulations.

5) Preparing preliminary studies and executive drawings, technical bid documents and contracts, and supervising implementation and project management.

6) Using digital and media tools to creatively address professional and academic difficulties.

7) Utilize effective communication and teamwork to solve problems in the area of specialization and uphold ethical standards.