



Department of Architectural Engineering

The department of Architectural Engineering offers the following programs:

1. Graduate Diplomas

1.1 Professional Diploma in Landscape Architecture

The student must complete 24 credit hours.

Compulsory courses: The student must pass six courses with a total of 18 credit hours from course numbers (07 01 611 to 07 01 616).

Elective courses: The student can choose the remaining credit hours from any other courses that are specified as “Diploma courses”

1.2 Professional Diploma of Multimedia Applications in Architecture

The student must complete 24 credit hours.

Compulsory courses: The student must pass six courses with a total of 18 credit hours from course numbers (07 01 620 to 07 01 625)

Elective courses: The student can choose the remaining credit hours from any other courses that are specified as “Diploma courses”

1.3 Specialized Graduate Diploma in Architectural Design and Urban Design

The student must complete 30 credit hours.

Compulsory courses: The student must pass three courses with a total of 9 credit hours with course numbers (07 01 618, 07 01 626, 07 02 613).

Elective courses: The student can choose the remaining credit hours from any other courses that are specified as “Diploma courses”

2. Master Degrees

2.1 Master of Engineering in Architectural Engineering

The student must complete 30 credit hours in the form of courses and an additional 3 credit hours in the form of a scientific report.

Compulsory courses: The student must pass five courses with a sum of 15 credit hours with course numbers (07 01 711, 07 01 714, 07 01 720, 07 01 723, 07 02 711).

Elective courses: The student can choose the remaining credit hours from any other courses that are specified as “Master courses”. The student is allowed to choose 2 courses from another major.



2.2 Master of Science in Architectural Engineering

The student must complete 24 credit hours in the form of courses and an additional 8 credit hours in the form of a thesis.

Compulsory courses: The student must pass three courses with a sum of 9 credit hours with course numbers (07 01 714, 07 01 720, 07 01 721).

Elective courses: The student can choose the remaining credit hours from any other courses that are specified as “Master courses”. The student is allowed to choose 2 courses from another major.

3. Doctor of Philosophy- Ph.D. Degree

3.1 Doctor of Philosophy in Architectural Engineering

The student must complete 18 credit hours in the form of courses and an additional 24 credit hours in the form of a dissertation.

The student must choose three courses from those specified as “Doctorate courses”. The student has the right to choose another three courses from another major.



List of Diploma, Master and Ph.D. courses

No.	Course Code	Course Name	Credit Hours	Exam Duration
1	07 01 611	Theories and History of Landscape	3	3
2	07 01 612	Landscape Architecture	3	3
3	07 01 613	Water and Environment in Landscape	3	3
4	07 01 614	Applications in Landscape (1)	3	3
5	07 01 615	Applications in Landscape (2)	3	3
6	07 01 616	Environmental Design for Buildings	3	3
7	07 01 617	Computer Aided Architectural Design	3	3
8	07 01 618	Architectural Design Applications (1)	3	3
9	07 01 619	Architectural Design Applications (2)	3	3
10	07 01 620	Digital Design	3	3
11	07 01 621	Virtual Architecture	3	3
12	07 01 622	3-D Models and Real Image	3	3
13	07 01 623	Digital Multimedia	3	3
14	07 01 624	Applications in Virtual Architecture (1)	3	3
15	07 01 625	Applications in Virtual Architecture (2)	3	3
16	07 01 626	Construction and Building Systems	3	3
17	07 01 627	Site and Project Management	3	3
18	07 02 611	Sustainable Urban Design	3	3
19	07 02 612	Urban Coordination	3	3
20	07 02 613	Applications in Urban Design (1)	3	3
21	07 02 614	Applications in Urban Design (2)	3	3
22	07 01 711	Environmental Techniques in Buildings	3	3
23	07 01 712	Methods of Environmental Analysis	3	3
24	07 01 713	Built Environment and Energy Conservation	3	3
25	07 01 714	Design Methodology and Analysis	3	3
26	07 01 715	Sustainable Architecture	3	3
27	07 01 716	Rehabilitation of Buildings	3	3
28	07 01 717	Introduction to Construction Economics	3	3
29	07 01 718	Feasibility Studies	3	3
30	07 01 719	Special Studies in Architectural Design	3	3
31	07 01 720	Special Studies in History and Theory of Architecture	3	3
32	07 01 721	Architectural and Urban Criticism	3	3



33	07 01 722	Conservation of Architectural Heritage	3	3
34	07 01 723	Special Studies in Building Technologies	3	3
35	07 02 711	Special Studies in Urban Design	3	3
36	07 02 712	Development of Urban Environment	3	3
37	07 02 713	Policies of Land Use	3	3
38	07 02 714	Transportation and Land Use	3	3
39	07 02 715	Introduction to Geographical Information Systems	3	3
40	07 02 716	Introduction to Remote Sensing	3	3
41	07 02 717	Basics of Environmental Sciences	3	3
42	07 02 718	Applications of Geographical Information Systems and Remote Sensing in Environmental Indicators	3	3
43	07 02 719	Theories and Methodologies of Urban Planning	3	3
44	07 02 720	Research Methods	3	3
45	07 01 811	Selected Topics in Architectural Design and Renewable Energy	3	3
46	07 01 812	Selected Topics in Computer Applications in Architecture	3	3
47	07 01 813	Selected Topics in Building Technologies and Materials	3	3
48	07 02 811	Selected Topics in Urban Development	3	3
49	07 02 812	Selected Topics in Urban Communities	3	3
50	07 02 813	Selected Topics in City Problems	3	3
51	07 03 811	Selected Topics in Rural Housing	3	3
52	07 03 812	Selected Topics in Informal Housing	3	3
53	07 03 813	Selected Topics in Urban Housing	3	3
54	07 01 601	Diploma Project in Landscape	3	Presentation
55	07 01 602	Diploma Project in Multimedia Applications in Architecture	3	Presentation
56	07 01 603	Diploma Project in Architectural Engineering and Urban Design	3	Discussion
57	07 01 701	Scientific Report of Master of Engineering in Architectural Engineering	3	Defense



58	07 01 705	Master of Science Thesis in Architectural Engineering	8	Defense
59	07 01 801	Doctor of Philosophy Dissertation in Architectural Engineering	24	Defense

Description of Courses for Graduate Programs (Diploma- Master- Doctor of Philosophy)

07 01 611 Theories and History of Landscape

Study the theories that control landscape regarding the historical background of landscape to gain experiences in landscape heritage from historical gardens in different eras.

07 01 612 Landscape Architecture

Study the theoretical bases of in landscape architecture and used material and basics of selection of whether plants or finishing materials.

07 01 613 Water and Environment in Landscape

Study water as a one of the major elements in landscape and its impacts on the general image and perception of the place is the major point in that course taking into consideration the surrounding environment and its climatic and physical conditions. Study the practical techniques which participate in saving water in places with rare sources of water.

07 01 614 Applications in Landscape (1)

Apply theoretical bases of landscape through the projects of like public and private gardens, parks, forests, and recreational areas in a comprehensive which promote the experiences of students.

07 01 615 Applications in Landscape (2)

Study the new techniques in landscape such as irrigation and drainage systems as well as develop and upgrade existing projects and generate and evaluate alternatives with paying attention toward climatic and physical changes regarding the landscape elements.

07 01 616 Environmental Design for Buildings

Study methods of architectural design that respect the usage of available or suitable construction materials for climatic situation of the surrounding environment or the suitable, which guarantee is for what it is designed for.

07 01 617 Computer Aided Architectural Design

Study the possibility of the usage of the computer as an assisting tool to facilitate the



design process in generating and evaluating alternatives, when variables and inputs are inconsistent and the design is hard for the designer to imagine drawing.

07 01 618 Architectural Design Applications (1)

Study more architectural applications that are more complicated to innovate than the student use to do in the undergraduate design studios to promote his or her experiences in the field of architectural thoughts and visions to solve the architectural problem after defining the input variables in a deeper way in design processes.

07 01 619 Architectural Design Applications (2)

Use the computer software packages in an extensive way through software development to generate and evaluate alternatives to let the computer not only an assisting drawing tool but also as a designing tool with paying attention to criticism and analysis methods of architectural projects. 07 01 618 is a prerequisite.

07 01 620 Digital Design

Study the theories and applications of digital architecture in the field of architectural and urban design. Study digital architecture techniques and processes beside models and methodologies in the field of architectural design and digital design.

07 01 621 Virtual Architecture

Study how to make virtual architecture to overcome the learning problem and professional practice to guarantee high quality in the final product where corrections or changes are difficult. The course uses the cave technology as a direct application for virtual architecture to evaluate projects in the design phase.

07 01 622 3-D Models and Real Image

Study theoretical and practical computer applications to create 3-D models with detailed elements simulating the reality of architectural design, which help to compose a real image of the building to assist in criticizing the architectural design.

07 01 623 Digital Multimedia

Study the applicability of multimedia technology in the fields of architecture like architectural design, building technology, history of architecture, theory of architecture, and as such through presentations for architectural concept, learning material or in the world wide web.

07 01 624 Applications in Virtual Architecture (1)

Study theoretical and practical basics of virtual reality application in the field of architectural and executive design to enable the student to avoid the architectural mistakes and shortcomings to ensure high quality after operation for optimum performance. To go



over virtual reality available software packages.

07 01 625 Applications in Virtual Architecture (2)

Study the creation and treatment of organic shapes, which always was the main obstacle in the face of computer aided design software packages, which reduces the designer ability to produce what he feels, it also allow the special abilities for the designer that are not available in the convention work. In them meanwhile, the ability to interact with the model and correct it from inside. 07 01 624 is a prerequisite.

07 01 626 Construction and Building Systems

Advanced study for used in building and construction process, but in a more multifaceted way than has been studied in the bachelor programs, this is through paying attention the variable related to different construction process phases regarding developed and developing countries experience.

07 01 627 Site and Project Management

Study theoretical and practical basics that followed in management of construction projects as a special case of projects with a unique character. Expose to the used software packages in project management and different inside phases. Study utilized methods in providing, storing, and using construction materials within the construction sites. Labor size, and instruments and work arrangement to reach the optimum site management to achieve the construction process in a safe and fast way.

07 02 611 Sustainable Urban Design

Follow methods and basics of sustainable in the field of urban design in material selection, and methods and strategies of saving resources through the urban design applications.

07 02 612 Urban Coordination

Study methods of urban image coordination in cities, which suffers from visual opposition between urban designs expressions with the study of effects of each urban design elements and the impact of that on the image of the city generally.

07 02 613 Applications in Urban Design (1)

Study of urban design applications that is more advanced and creative than applications has been studied in the bachelor degree in different field to raise the student experience in solving urban design problems with a deeper vision after defining input variables in urban design process.

07 02 614 Applications in Urban Design (2)

Applications in this course focus on thoughtful points like employing urban design in solving specific problem such as criminal prevention and social complications. The



applications also focus on key differences in urban spaces varieties and types of activities and the extent of this effect positively or negatively on the surrounding urban fabrics. Renewable and clean energy applications in urban spaces are studied. 07 02 613 is a prerequisite.

07 01 711 Environmental Techniques in Buildings

Study the surrounding environment of buildings, which can provide several techniques that is proper for every community financially, environmentally, and socially to offer good living standards. This is to create cleaner and healthier environment to let the architectural space plays its role. Study these available techniques in several diverse environments.

07 01 712 Methods of Environmental Analysis

Analyze the environmental circumstances around our buildings, which need several scientific curriculums on the bases that architect analyze this environment.

07 01 713 Built Environment and Energy Conservation

Study what is needed for built environment from energy and study of architectural methods from techniques, materials, and studied, which help saving energy as a main source of sustainable energy environmental resources.

07 01 714 Design Methodology and Analysis

Study theoretical and practical methods that should be followed architects during architectural design process with defining the separate variables or related to design elements in different applications.

07 01 715 Sustainable Architecture

Study theoretical and practical basics of sustainability and how it could be applied in different architectural design phases to guarantee special nature architecture to protect sustainability of resources of future generations.

07 01 716 Rehabilitation of Buildings

Study the physical, capacity, and historical capability of the building for the possibility of rehabilitation whether in the same activity or in new other activity. Study the capability of the site, which is one of the important variables in building rehabilitation. The course exposes to theoretical and strategic basics and practical application techniques followed in developed and developing countries in building rehabilitation.

07 01 717 Introduction to Construction Economics

Definitions in engineering economy with the study of analysis mechanisms, methodologies, economical thinking methods through direct applications on building industry generally and specifically.



07 01 718 Feasibility Studies

Study types of different projects and how to make different types of feasibility studies like marketing, economical, technical, and environmental with focus on technical feasibility of projects.

07 01 719 Special Studies in Architectural Design

Seminars focus on special specific vital topics in architectural design and the student is asked to select a research point, which is proper with this to gain more experiences as well as learning other experiences.

07 01 720 Special Studies in History and Theory of Architecture

Seminars focus on special specific vital topics in history and theories of architecture and the student is asked to select a research point, which is proper with the course name.

07 01 721 Architectural and Urban Criticism

Study the architectural and artistic schools movements with relation to architecture and criticize these schools in an objective way, which help to gain the student the sense of evaluating the architectural with comprehensive vision.

07 01 722 Conservation of Architectural Heritage

Study theoretical and practical basics in a wide range, which should be accompanied by historical building conservation, strategies, and techniques in each type of buildings in a specific way.

07 01 723 Special Studies in Building Technologies

Seminars focus on special defined subjects, which are significant in building technologies. Students select one of research point, which are suitable for course title.

07 02 711 Special Studies in Urban Design

Seminars focus on special defined subjects, which are significant in urban studies. Students select one of research point, which are suitable for course title.

07 02 712 Development of Urban Environment

Study theoretical basics of urban environment from shelter, local economy, urban basic services, infrastructure, and services, and how to develop these major areas with into consideration the cross cutting areas from environment, vulnerable groups, gender, and governance to this environment.



07 02 713 Policies of Land Use

Study theoretical and practical basics that are governed in policies of land uses and examples of experiences followed in that field. How to establish strategies for land use plans, which guarantee a proper distribution of society's needs to ensure availability of its demands with saving the environment.

07 02 714 Transportation and Land Use

Study the interaction relationship between land use and transportation systems in the urban fabric. Study the interaction models from the real international experiences.

07 02 715 Introduction to Geographical Information Systems

Study theoretical and practical basics that are followed in geographic information system about the possibility of dealing with different information as a decision support system tool in several planning and urban applications to give the possibility to deal with geographic information system technology individually at any valid field.

07 02 716 Introduction to Remote Sensing

Study theoretical and practical basics that are followed in remote sensing as a decision support system tool in several planning and urban applications to give the possibility to deal with remote sensing technology at any valid field.

07 02 717 Basics of Environmental Sciences

Understand the general trends in environmental sciences problems, definitions, and methodologies with the possibility to use geographic information system and remote sensing to express environmental problems as a decision support system tool in that matter. Evaluate the positive or negative effects of projects on the surrounding environment and the effect of that on the feasibility of projects. Applications in that course take into consideration the architectural application.

07 02 718 Applications of Geographical Information Systems and Remote Sensing in Environmental Indicators

Intense study in geographic information system and remote sensing to give the student the chance for theoretical and practical study to solve the problems. Examples with major differences are studied and analyzed to convey multiple experiences. The course needs a previous experience in geographic information system and remote sensing.



07 02 719 Theories and Methodologies of Urban Planning

One of the application to geographic information system and remote sensing to impart the student the experiences and enough skills in the field of followed methodologies in urban planning equally in developed and developing countries. The course needs a previous experience in geographic information system and remote sensing.

07 02 720 Research Methods

The course introduces the methodologies of academic research and its techniques, so as to enable students to adequately conduct research work, in addition to presenting procedures of academic writing so as to produce rational, thorough, and complete research documents fulfilling essential scientific requisites. The course also reviews the commonly applied research methods along with simple statistics that develop the students' ability to devise inquiries, take samples, analyze data, and induce statements and conclusions.

07 01 811 Selected Topics in Architectural Design and Renewable Energy

Seminars concentrate on special defined topics with significance in architectural design. The student selects a research point corresponding to gained experiences taking into consideration sources of renewable energies and their applications.

07 01 812 Selected Topics in Computer Applications in Architecture

Seminars focus on specific special topics with the necessary in computer architectural applications. The student is obligated to select a research point that is suitable to get experience in comparison to other experiences.

07 01 813 Selected Topics in Building Technologies and Materials

Study the enormous progress in building methods, techniques, and available possibilities, in addition, to what the scientists create from materials valid for architecture use. The Ph. D. specialized candidate should be exposed to modern techniques and materials. The candidate studies success existing interface between architectural sciences and available techniques and how they could be applied in architectural design and projects to gain more experiences.

07 02 811 Selected Topics in Urban Development

Seminars focus on special defined significant topics in studying theoretical basics of urban development with respect to shelter, local economy, urban basic services, services, and



governance. Negative and positive from pollution, poverty and welfare of existing effects on these developments and their habitants are discussed.

07 02 812 Selected Topics in Urban Communities

Seminars focus on special defined significant topics in studying theoretical basics of urban communities with respect to shelter, local economy, urban basic services, and services. Negative and positive from pollution, poverty and welfare of existing effects on these communities and their habitants are discussed.

07 02 813 Selected Topics in City Problems

Study the existing problems in cities of developed or developing countries and their roots, and causes, which are different or similar and making comparative studies among cities.

07 03 811 Selected Topics in Rural Housing

Seminars focus around specific and special subjects significant in studying rural housing. Students are asked to select a research point that is proper with the topic of this course. Study the development of rural housing types in developed and developing countries and the policies of these countries to provide, and upgrade their prototypes, and the negative and positive aspects of other system on rural housing.

07 03 812 Selected Topics in Informal Housing

Seminars focus around specific and special subjects significant in studying informal housing. Students are asked to select a research point that is proper with the topic of this course. Study the development of informal housing types in developed and developing countries and the policies of these countries to provide, and upgrade their prototypes, and the negative and positive aspects of other system on informal housing.

07 03 813 Selected Topics in Urban Housing

Seminars focus around specific and special subjects significant in studying urban housing. Students are asked to select a research point that is proper with the topic of this course. Study the development of urban housing types in developed and developing countries and the policies of these countries to provide, and upgrade their prototypes, and the negative and positive aspects of other system on urban housing.

07 01 601 Diploma Project in Landscape

07 01 602 Diploma Project in Multimedia Applications in Architecture

07 01 603 Diploma Project in Architectural Engineering and Urban Design



07 01 701 Scientific Report of Master of Engineering in Architectural Engineering

07 01 705 Master of Science Thesis in Architectural Engineering

07 01 801 Doctor of Philosophy Dissertation in Architectural Engineering