University of Tripoli
Faculty of Engineering

ARCHITETURE and URBAN PLANNING ENGINEERING DEPARTMENT
Graduate programs

Brief history

Department of Architecture and Urban Planning is founded in 1969 as one of specialized departments of the Faculty of Engineering to teach the art of architecture and urban planning and it grants Bachelor degree. In 2005 the department has introduced a postgraduate study program. Master's Programs at the department of Architecture and Urban Planning generally requires two years of full-time study. It is an academic degree intended for students with professional degrees Architecture and Urban Planning. It is expected that such students will have previously studied the technical and professional aspects of architectural urban practice and are primarily interested in strengthening the intellectual underpinnings of their work through intensive studio investigations, design applications, and rigorous theoretical inquiry.

M. Sc. program consists of three distinct study areas, M. Sc. in Architecture and Urban Design, M. Sc. in Architecture and M. Sc. in Urban Design. The programs gives student an interdisciplinary and cross-cultural perspective on contemporary architecture and urban design. The programs emphasize a research-oriented approach in order to anticipate future challenges. Its profile is design led and practical, as well as academic and theoretical.

Vision

Our vision is to contribute a critical, creative, ethical, social and cultural voice for the ongoing development of the professions of Architecture and Urban design.

Mission

The mission of this program is to offer a high standard educational program that helps professionals in achieving better practice and to promote practical research activities among students and faculty members.

Programs

The graduate program in the Architecture and Urban Planning Engineering Department offers M.Sc. degree in the following programs:

- *Program I: Architecture and Urban Design*
- *Program II: Architecture*
- *Program II: Urban Design*

Program I

PROGRAM	***Architecture and Urban Design Engineering***
DEGREE	*M. Sc.*
OBJECTIVES	The department's mandate is for each student to understand architecture and urban design as a creative, productive, innovative, and responsible practice. The programs, therefore, are based on the following intentions - To strengthen intellectual growth and the capacity to develop creative and responsible solutions to unique and changing problems. - To help the student acquire the individual capabilities necessary for research and the competent practice of architecture and urban design and lifelong learning

Code	Title	Credits	Hours	ECTS
Faculty Requirements (3credits)				
GE606	Applied Statistics and Computer Application **	3	4	8
Department Requirements: (11 credits)				
ARCH601	Research Methodology **	3	4	8
ARCH617	Advance Design Studio (1) **	4	5	10
ARCH618	Advance Design Studio (2) **	4	5	10
Elective courses (13 credits)				
ARCH602	Sustainable Architecture	3	4	8
ARCH604	Theories of Urban Design	3	4	8
ARCH615	Theories of Architecture	3	4	8
ARCH616	Design Methodology	3	4	8
ARCH621	Sustainable Urban Design	3	4	8
ARCH635	Contemporary Islamic Architecture	3	4	8
ARCH636	New Vernacular Architecture	3	4	8
ARCH641	Advance Architectural Technology	3	4	8
ARCH655	Urban Social Science	3	4	8
ARCH660	Ethics and Practice	3	4	8
ARCH661	History of City Form	3	4	8
ARCH662	Urban Transformation	3	4	8
ARCH663	Urban Space	3	4	8
ARCH665	Built Environment Evaluation	3	4	8
ARCH695	Independent Study	3	4	8
ARCH697	Special Topics	3	4	8
ARCH698	Graduate Seminar **	1	2	10
Thesis (6 Credits)				
ARCH699	M. Sc. Thesis	6	0	50
	Total	**33**	**0**	**128**

*** Mandatory Courses* *ECTS: European Credit Transfer and Accumulation System*

Program II

PROGRAM	*Architecture*
DEGREE	*M. Sc.*
OBJECTIVES	To ensure individual progression and individual deepening of knowledge, competence and judgment within architecture and related knowledge

Code	Title	Credits	Hours	ECTS
Faculty Requirements (3 credits)				
GE 606	Applied Statistics and Computer Application **	3	4	8
Department Requirements: (10 credits)				
ARCH601	Research Methodology **	3	4	8
ARCH616	Design Methodology **	3	4	8
ARCH617	Advance Design Studio (1) **	4	5	10
Elective courses (13 credits)				
ARCH602	Sustainable Architecture	3	4	8
ARCH604	Theories of Urban Design	3	4	8
ARCH615	Theories of Architecture	3	4	8
ARCH618	Advance Design Studio (2)	4	5	10
ARCH619	Advance Design Studio (3)	4	5	10
ARCH635	Contemporary Islamic Architecture	3	4	8
ARCH636	New Vernacular Architecture	3	4	8
ARCH641	Advance Architectural Technology	3	4	8
ARCH660	Ethics and Practice	3	4	8
ARCH661	Built Environment Evaluation	3	4	8
ARCH670	Historic preservation	3	4	8
ARCH695	Independent Study	3	4	8
ARCH697	Special Topics	3	4	8
ARCH698	Graduate Seminar **	1	2	10
Thesis (6 Credits)				
ARCH699	M. Sc. Thesis	6	0	50
	Total	**32**	**0**	**128**

*** Mandatory Courses* *ECTS: European Credit Transfer and Accumulation System*

Program III

PROGRAM	*Urban Design*
DEGREE	*M.Sc.*
OBJECTIVES	This specialism seeks to unite practical approaches for innovation in urban strategies with formal aspects of urban design, through real-world project development teamwork approaches problem-solving and a critical understanding of contemporary urban transformations in Libya

Code	Title	Credits	Hours	ECTS
Faculty Requirements (3 credits)				
GE606	Applied Statistics and Computer Application **	3	4	8
Department Requirements: (10 credits)				
ARCH601	Research Methodology	3	4	8
ARCH604	Theories of Urban Design	3	4	8
ARCH618	Advance Design Studio (2)	4	5	10
Elective courses (13 credits)				
ARCH602	Sustainable Architecture	3	4	8
ARCH604	Theories of Urban Design	3	4	8
ARCH615	Theories of Architecture	3	4	8
ARCH616	Design Methodology	3	4	8
ARCH619	Advance Design Studio (3)	4	5	10
ARCH621	Sustainable Urban Design	3	4	8
ARCH635	Contemporary Islamic Architecture	3	4	8
ARCH641	Advance Architectural Technology	3	4	8
ARCH655	Urban Social Science	3	4	8
ARCH660	Ethics and Practice	3	4	8
ARCH661	History of City Form	3	4	8
ARCH662	Urban Transformation	3	4	8
ARCH663	Urban Space	3	4	8
ARCH668	Urban Planning	3	4	8
ARCH695	Independent Study	3	4	8
ARCH697	Special Topics	3	4	8
ARCH698	Graduate Seminar **	1	2	10
Thesis (6 Credits)				
ARCH699	M. Sc. Thesis	6	0	50
	Total	**32**	**0**	**128**

*** Mandatory Courses* *ECTS: European Credit Transfer and Accumulation System*

Description of the Graduate Courses:

- *Faculty General Courses*

GE606 Applied Statistics and Computer Application *(3 Credits – 4 Hours)*

Random variables; common discrete, continuous expectations and their applications; Sampling of the mean, hypothesis testing of the mean and variance, confidence intervals and Chi-Square procedures; Simple linear regression and correlation; precision and straight line fits; Matrix approach; multiple; Linear regression; polynomial and extra sum of squares in linear regression analysis; Transformation, weighted dummy variables and special topics in multiple regression analysis; Selecting the best regression model; Design of experiments; Single-factor and Multi-factor analysis of variance. Application of Statistical software packages such as: MINITAB, SPSS, etc.…

- *Department Courses*

ARCH601 Research Methodology *(3 Credits – 4 Hours)*

The course is focused on critical analysis, investigation and production of scientific texts. It introduces current research methodologies, their relevance and applicability in design studies and urban planning. The aim of this course is to provide the necessary tools for students to conduct research within urban planning and design and to publish their research findings. The course is a prologue to the cycle of the research processes including conceptualization, information searching, evaluation, analysis, report-writing and presentation technique. It addresses underpinnings of research design, among them the issues of validity, reliability and ethics.

ARCH602 Sustainable Architecture *(3 Credits – 4 Hours)*

Sustainable architecture (often called green building) course focus on designing buildings that are environmentally responsible and resource efficient. Sustainable architecture limits its environmental impact by conserving as much energy and water as possible and are constructed of recycled or renewable materials in order to achieve maximum resource efficiency. The course equips students with a comprehensive knowledge of sustainable architecture and the techniques involved.

ARCH604 Theories of Urban Design *(3 Credits – 4 Hours)*

Urban Design Theories course concentrates on the analysis of theories in urbanism that influences the quality of life of people. It demonstrates the varieties and efforts that have occurred during the last decade. It aims to furnish to the students the understanding and the meaning of urban design through the exploration and evaluation of different theories as well as different case studies.

ARCH615 Theories of Architecture *(3 Credits – 4 Hours)*

This subject is aimed at studying the Architectural theories that have affected and still affect the architectural thinking, it shows the Architectural theories that have affected the Architecture in the past and present starting from the classic to the new era.

ARCH616 Design Methodology *(3 Credits – 4 Hours)*

The course will focus on the process of design, on formal methods of decision making and on methods to systematically improve design. The goal of design methodology course is to gain key insights to architectural design, it Studio is clear and deep investigation of a situation through design methods, thereby grasping the inner nature of architectural design. Creativity techniques are a major part of the course, to create new understandings of architectural design towards better design solutions.

ARCH617 Advance Design Studio (1) *(4 Credits – 5 Hours)*

This advanced studio-based design course will build on the knowledge and skills achieved in a recognized undergraduate program. The course will be project focused, developing the design process. It will focus on the integration of practice matters and technologies to produce workable architecture. Thus, this courses examine materials, construction, structural systems, and the environmental technologies that provide healthy, productive, sustainable, and comfortable environments.

ARCH618 Advance Design Studio (2) *(4 Credits – 5 Hours)*

The studio is designed to provide the student with an extensive experience in the theoretical concerns architecture and urban design; i.e. The idea in exploration of design process related to complex architectural projects in the urban context. Emphasis will be placed on a methodological approach to urban design synthesis, through the development of prototypes that promote environmental, economic and social sustainability.

ARCH619 Advance Design Studio (3) *(4 Credits – 5 Hours)*

Urban design studios are the heart of the urban design program. Values, knowledge and skills acquired in other units and from previous experience are supplemented and enhanced, and applied creatively to both the investigation and development phases of design projects at an urban scale. These may be concerned with the generation of strategies, frameworks, concepts, master plans, public space improvements, or other urban design purposes. They are chosen carefully to expose students to a range of contexts (central city, suburban, institutional campuses, etc) and contemporary issues concerning urban form, activity, transport and the implementation of projects. Students are expected to extend their presentation methods by developing illustrative, writing and verbal skills appropriate to urban design.

ARCH621 Sustainable Urban Design *(3 Credits – 4 Hours)*

Typical urban design projects by means of case study examples. In this context, students will conduct their own investigation and analysis in development of urban space and setting, urban morphology, elements of urban design. The aim of the course is to develop humanistic modern design that promotes liveability, community building and social sustainability Drawing on best practices and advanced research into urban form, urban quality and sustainability

ARCH635 Contemporary Islamic Architecture *(3 Credits – 4 Hours)*

Contemporary Islamic Architecture is not something that can be easily or strictly defined. It encompasses a range of designs completed for and by Muslim communities that express both the cultural traditions of this group, and their ever-changing role in the modern world. The result has been a wave of architecture that builds upon centuries of rich artistic traditions, while pushing the boundaries of design. This course focuses on architectural patterns and concepts that contemporary Islamic architecture. Course topics include major architectural concepts and styles, famous works, and the key architects who contributed to Contemporary Islamic Architecture.

ARCH636 New Vernacular Architecture *(3 Credits – 4 Hours)*

The aim of this course is to classify and conserve the unused values and principles in the development of new theories for architectural creations. Highlight needs and various ways of vernacular building research, analysis, presentation of finding and its application to contemporary buildings The course is meant to introduce students to vernacular architecture and the skills needed to analyze individual sites. It will help students to understand how people who are not trained as architects design and build, how cultural differences affect built form, how buildings are used, how buildings coexist in cultural landscapes, and what those buildings and landscapes mean to their builders and users. Students will be able to define and use the basic vocabulary of vernacular architecture studies. Each student is expected to master the skills of visual literacy: how to think critically, to analyze creatively, and to write clearly about the vernacular built environment.

ARCH641 Advance Architectural Technology (*3 Credits – 4 Hours)*

Architectural technology is the application of technology to the design of buildings. It is a component of architecture and building engineering. The student learn about new materials and technologies that generated new design challenges and construction methods throughout the evolution of building.

ARCH651 Urban Spaces *(3 Credits – 4 Hours)*

The importance of urban space as the main product of urban design objectives remains the essential topic of many urban design discourses. The course considers public spaces are important to the livability of a city and seeking to address the meaning of urban space through the emphasis and distinction between; public urban space, semi-public urban space, private urban space, semi-private urban space, piazzas and squares. The course enables the students to understand the value of urban space and its relation to the public realm through the analysis of different case studies from around the world.

ARCH652 Urban Transformation *(3 Credits – 4 Hours)*

This course illustrates how cities, metropolitan area, and suburbs are change. It demonstrates in an analytical manner the major and minor motives that influence the transformation of the built areas within the urban context. It examines the various urban issues that cause dramatic alteration in the urban fabric as well as structure. A major

comparative analysis between the pre and post urban change will be the focus of the course.

ARCH655 Urban Social Science (3 *Credits* – 4 Hours)

Urban Sociology course examines the reasons for the growth and development of cities and the different ways people live in cities .it discusses the relationship between the built environment and human behavior and the implications of social policy on urban planning practice.

ARCH660 Post-Occupancy Evaluation (POE) (3 *Credits* – 4 Hours)

The purpose of (POE) course is to learn the process of evaluating buildings in a systematic and rigorous manner after they have been built and occupied for some time. The value of POE is being increasingly recognized, and it is becoming mandatory on many public projects. POE is valuable in all construction sectors, especially healthcare, education, offices, commercial and housing, where poor building performance will impact on running costs, occupant well-being and business efficiency.

ARCH661 Ethics and Practice *(3 Credits – 4 Hours)*

The purpose of the course is to acquaint the advanced student in the professional program in architecture and urban design with the ethical and practical issues which the architect faces in professional practice. The intent is to present these issues in such a way as to assist the student in understanding the ethical commitment to self, client and society at large.

ARCH661 Historic Preservation *(3 Credits – 4 Hours)*

Historic preservation is a process of design for continuity and management of change within an existing historic context. Historic preservation offers specialized education in historic preservation design, technology, planning and management

ARCH668 Urban Planning *(3 Credits – 4 Hours)*

This course is about how cities, suburbs, and metropolitan areas change. Urban Planning is a process of guiding the use and development of land with the aim of making the city a better place to live and work. It determines the best uses of land and resources for homes, businesses, and recreation., devises ways to renovate slums, expand cities, modernize transportation systems, and distributes public facilities such as schools and parks. This course will also help students appreciate the social, environmental and economic considerations inherent in the urban planning process.

ARCH695 Independent study *(3 Credits – 4 Hours)*

Independent study enables a student to pursue for course credit a research or other academic topic of interest under the supervision of a faculty member. Independent study is of two types: Independent Study (non-research) or research Independent Study. Independent Study are individual, non-research, directed studies in a field of special interest on a previously approved topic taken under the supervision of a regular-rank faculty member (with or without another faculty mentor serving as an instructor) and resulting in an academic. Such independent study courses do not bear a Research (R) code and do not satisfy any general education requirements aside from the Small Group Learning Experience (SGLE) requirement.

ARCH697 Special Topics (3 Credits – 4 Hours)

The topics are not listed in department programs and may vary from year to year according to interests of students and instructors.
M.S. students choose and study a topic under the guidance of the department coordinator. Typical contents include advanced fields of study according to recent scientific and technological developments in the related areas. Also, it could be studied from other related departments after getting the permission.

ARCH698 Graduate Seminar (1 Credits - 2 Hours)

This course help students to develop their research proposals, establishing and expanding their research skills and implementing their work through scholarly writing, which can be achieved through the seminar.
The seminar course must to be taken in the second semester of the registration and managed by an instructor who is responsible to prepare the final grade list of all the registered students.
Students must prepare and present their chosen topics through a scientific term paper, which can be shared and discussed with other students and department staff to gain their feedback.

ARCH699 M. Sc. Thesis (6 *Credit*s)

The purpose of Thesis is to allow the student to pursue an independent line of study for an extended period in considerable depth bringing together various skills from studio and classroom, which have been acquired over the prior course of study. It is an in-depth study of a topic of interest to the student. Thesis is also a comprehensive summary of what has been learned to date, so technical competence must be exhibited in all aspects of a thesis project. A thesis project will not only be judged on the quality of work presented, but also on the processes used to produce it.

- ***Learning Objectives (outcomes)***

Upon completion of the Master of Science Program in the Architecture and Urban Planning Engineering, graduates are expected to attain the following outcomes:

1- Programs Learning Outcomes:

1. Ability to conduct independent research
2. Understanding of the theories and methods of inquiry that seek to clarify the relationship between human behavior and the physical environment
3. Understanding of the diverse needs, values, behavioral norms, physical ability, and social and spatial patterns that characterize different cultures and individuals and the implication of this diversity for the societal roles and responsibilities of architects
4. Understanding of the principles of sustainability in making architecture and urban design decisions that conserve natural and built resources, including culturally important buildings and sites, and in the creation of healthful buildings and communities

5. Understanding of the ethical issues involved in the formation of professional judgment in architectural design and practice
6. Understanding of the need for architects to provide leadership in the building design and construction process and on issues of growth, development, and aesthetics in their communities.
7. This program offers an appreciation of the historical and theoretical dimensions of urbanism and design, urban morphology and the relationship between ecological processes and city forms.
8. Creative design thinking, the student will be able to put forward unconventional or novel design propositions that address contemporary urban design issues.

الاعتماد			
البيان	منسق الدراسات العليا بالقسم	رئيس القسم	مدير مكتب الدراسات العليا بالكلية
الاسم			
التاريخ	2022 / 09 /	2022 / 09 /	2022 / 09 /
التوقيع			
الختم			

اعداد / لجنة دليل الدراسات العليا 2022