

## B.Sc. in Architecture Study Plan

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| 2215460  | ARCH546 | THE LANDSCAPE OF PARKS AND<br>GREENWAYS                    | 2 |
| 2215480  | ARCH548 | CONTEMPORARY LANDSCAPE<br>ARCHITECTURE                     | 2 |
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| 2215560  | ARCH556 | RENEWABLE ENERGY AND<br>ARCHITECTURE                       | 2 |
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**TOTAL**

**169 C.H**

**\* For prerequisite & equivalent courses see  
the Courses' Description.**

## B.Sc. in Architecture

### Courses' Description

#### Arch 101 Architectural Drafting (3CH; 6S)

The course is designed to enable students acquire basic skills in architectural drawings and hand writing, and to have first step experience in Architectural presentation and projections to express ideas and conceptions in the design process in the form of plans, elevations, sections and other 3<sup>rd</sup> illustrations.

#### Arch 102 Visual Communication I (3CH; 6S)

Basic skills of free hand drawing as a means of expressing perceptions, ideas and images. Exercises are intended to develop the student's sense of abstraction through line drawings, and sense of volume through surface treatment; such as textures and tonal values. Exercises include both fast sketches and slow drawings of variety of objects and environments; architectural, exterior, interior and natural. The course also includes colored sketching.

#### Arch 111 Basic Design I (3CH; 6S)

Introduction to formal attributes of visual design. Elements and principles of visual design. Analysis of two dimensional visual compositions. Exercises on elements and principles of visual design through the creation of two dimensional visual compositions using basic shapes and forms. The course ends with basic two dimensional architectural exercises.

#### Arch 112 Basic Design II (3CH; 6S)

Formal attributes of three dimensional visual design. Analysis of three dimensional visual compositions. Exercises on elements and principles of 3-D visual design through the creation of 3-D visual compositions. Exercises on mass compositions. Exercises on spaces composition. Exercises on interplay between mass and space. Introduces students to more contextual and formal complexity in space design. The course ends with basic three dimensional architectural exercises. *PQ:Arch101 +Arch111*

#### Arch 152 Building Construction I – Materials (3CH; 3H)

This course is an introductory of construction of buildings. It deals with basic construction materials used as: brick, cement, gypsum, steel, timber, etc. it describes their main types, characteristics, their use and function. It will also cover the modern construction materials such as: pre stressed concrete, float glass, extruded aluminum, advanced gypsum products, plastics, the miraculous materials of construction developed recently. This course will consider the preparation of construction site, soil investigation, building codes used in construction practices.

#### Arch 201 Computer Aided Design I (3CH; 1H, 4S)

Systematically introduces computer-aided architectural design applications commonly encountered during professional practice. Develops basic familiarity and proficiency with principles of computer-aided architectural design using the Windows operating system. Presentation and training focuses on AutoCAD software. Includes 2D & 3D modeling of existing buildings. Topics include objects, layers, classes, annotation methods, dimensions, units, scales, groups, symbols, blocks and graphic database library storage & retrieval techniques. Presents new methods of moving from 2D planes to 3D masses. Architectural graphic presentation with added values of audio, video,

rendering, lighting & basic motion effects. *PQ:Arch112 + CIS 100*

#### Arch 202 Visual Communication II (3CH; 6S)

Basic technical methods and proximate methods of perspective construction. Standard technical perspective drawing (one, two, and three point perspective). Shadow projection and shading in two and three-dimensional drawings. Shade and shadows in perspective drawings. Exercises on all of the above are required. *PQ:Arch101 +Arch102*

#### Arch 204 Computer-Aided Design II (3CH;1H, 4S)

Systematically applies CAD systems to the different phases of planning: pre-design, design, & construction documents. Focuses on data exchange between different software including the extraction of volumetric data and transfer them to spreadsheet and/or database management software, rendering software, post-rendering work in pixel-editing software, animated walkthroughs in motion-supporting software. Presentation and training focuses on advanced AutoCAD, PhotoShop & 3Dmax software, with the intent to develop basic familiarity and proficiency with the digital rendering and multi-media techniques. Highlights motion & animation enhancement to architectural presentations. *PQ:Arch201*

#### Arch 211 Architectural Design I (5CH; 10S)

Studio-based investigation of the fundamentals of making architectural form and space with an emphasis on human-based inquiry and exploration. Design generation with reference to human-environment interaction through exploring the principles of anthropometrics & ergonomics and applying these principles on interior design of simple spaces. Two projects at least. *PQ:Arch112*

#### Arch 212 Architectural Design II (5CH; 10S)

Understanding and exploring function in architectural design. Form as an aesthetic response to function. Design methodology and simple strategies for integrating form and function. Using basic pre-design studies for exploring primary design forces. Exterior-interior interaction or integration in architectural design. Exercises on architecture that consists of a limited variety of functions. Two projects at least. *PQ: Arch 211*

#### Arch 231 History of Architecture I (3CH; 3H)

Review of ancient architecture (Mesopotamian, Egyptian, Canaanite, Phoenician, and Hittite). Study the civilizations and architecture of classical periods: Greek (preceded by Aegean), and Roman (preceded by Etruscan). Emphasis on classical architecture and their contribution to city urban elements, and the early Christian architecture. Religious architecture during early Christian and the Byzantine periods and its development of its innovative structures and geometry. **PQ:Arch112**

#### Arch 232 History of Architecture II (3CH; 3H)

The Medieval period (Romanesque and Gothic) and its social, religious, historical and cultural contexts and its influences on the development of structure and space. Analytical study of Renaissance architecture and art as a re-birth of the classical beauty and geometry in architecture (Classical Revival). Architecture of Mannerism. Ornate architecture of the Baroque and Rococo periods. The course ends up with the rise of industrial revolution. *PQ: Arch 231*

### Arch 252 Building Construction II – Systems (3CH; 3H)

The course is to acquaint students with general concepts related to building process, various building construction techniques employed in contemporary construction. The course will concentrate on building construction methodologies locally and internationally. Concrete and steel constructions will be investigated through understanding their Skeleton systems from foundations to roof, their materials, mechanism, options, major and minor elements. Major components of partitions, staircases, elevators, windows, doors and insulation works. Construction drawings exercises are required in parallel to lectures. *PQ: Arch 152*

### Arch 261 Engineering Mechanics (3CH; 3H)

Force vectors and resultant. Free-body diagram of forces and equilibrium of particles and rigid bodies. Moment of a force about a point and about an axis. Equilibrium of rigid body. Analysis of trusses and frames. Shear forces diagrams and bending moment diagrams. Center of area and moment of inertia of an area. All examples and applications should be related to architecture and buildings. *PQ: Math 101 + Phy 101*

### Arch 262 Structural Analysis & Systems (3CH; 3H)

Applications of structural systems in different building types. Detailed classification of structural systems; nature of loads; truss analysis, concept of shear and moment diagrams for beams and frames; influence lines for determinate structures. A thorough understanding and practical applications of structural analysis theories. Development of skills to analyze the behavior and response of structures to various loads and constraints. The dynamic logic of building technology and structural systems, and their effect on architectural space and language. Integration of engineering and architectural skills in the production of buildings. Review of pre-industrial structural systems (post and beam, vaulting, rib vaulting, domes), and post-industrial structural systems. (E.g. 2D trusses, 3D trusses, concrete shells, tensile structures, pneumatic structures). *PQ: Arch 261*

### Arch 301 Technical Writing & Verbal Communication (2CH; 2H)

Trains students to professionally prepare academic reports & effectively present expressive speeches. Both types are needed in pre-design & design report writing as well as in jury presentations. *PQ: Eng 112*

### Arch 311 Architectural Design III (5CH; 10S)

Design problems with multiple functional systems and functional complexity. Highlighting functional and aesthetic aspects of design multiple layers of design, such as circulation, structure and environment. Exploring architectural building typologies. Exposure to more thinking approaches to architectural design. Digital studios may be adopted in this course according to the instructor. Two projects. *PQ: Arch 212*

### Arch 312 Architectural Design IV (5CH; 10S)

Exploring the contemporary philosophies and movements of architecture and design as bases for design thinking in this course. Exploring the concepts of architectural languages and styles in reference to the context of time & place. Developing the architectural language as part of the design creation and development. It is strongly encouraged to employ digital studio and multi-media presentation techniques to explore, derive & express design solutions. Two projects. *PQ: Arch 311 + Arch 201*

### Arch 331 Modern architecture (3CH; 3H)

The modern approaches in architecture from the industrial revolution era till the end of 50's of the 20<sup>th</sup> Century. Emphasis on the major trends of modern architecture; Arts and Crafts, Chicago School of Architecture, Rationalists approach and Art Nouveau ideas and conceptions, Functionalism, Beaux Arts, Constructivism, Expressionism, Structural Architecture, Bauhaus...etc. The course is illustrated with analytical studies of examples chosen from the works of influential architects such as Frank Lloyd Wright, Corbusier, Gropius, Mies, Aalto, ... etc. *PQ: Arch 232*

### Arch 332 Contemporary Architecture (3CH; 3H)

The contradictions and debates towards the post modern architecture through the 1960's with the variant approaches, architects & impacts on the current architecture & urbanism. Trends of regional architecture and localities of urbanism. The influential ideologies and values underlying diverse contemporary movements from the high-tech architecture in the 1970's until now. Architecture in terms of global and digital space. The interrelationship of flexible space, form and time. Critical review of the emergent styles & schools of architecture. *PQ: Arch 331*

### Arch 333 Architecture in Islamic Context (3CH; 3H)

The development of Architecture in the Islamic world from the dawn of Islam till recently. Analysis of elements, methods and functions of Islamic architecture including contemporary development in various Islamic regions. Reflection of the ideology of Islam in architecture. Emphasis on recent experiments, which intended to achieve the continuity of Islamic architecture. *PQ: Arch 232*

### Arch 341 Landscape Architecture (3CH; 2H, 2S)

This course is comprised of both lecture classes and design problems. The lecture material should cover: an introduction to landscape architecture as a discipline; theoretical views of landscape architecture; review of selected historical markers; review of renowned landscape architects; survey of landscaping plants focusing on plants of the region; plant as a design material; and principles of space design. Within the design studio, students should design 2-3 projects ranging in size and functions in order to acquire fundamental training and experience in landscape and plant design. *PQ: Arch 202 + Arch 152*

### Arch 343 Surveying (3CH; 2H, 3L)

Principles of surveying; linear measurements, chain surveying, leveling and its application in contouring, profiles and cross-sections. Areas, volumes, and earthwork. Measurement of angles; traverse surveys, tachometry and electronic distance measurements (EDM). Theory of errors and adjustments. Principles of triangulation. *PQ: Arch 101*

### Arch 352 Building Construction III-Finishing (3CH; 3H)

Different materials and methods used to finish a building exterior and interior surface. This include: plasters and their accessories, plaster partition systems, plaster ceilings, gypsum boards, ceramic tiles, marble, terrazzo, flooring, wood flooring, suspended acoustical tile ceilings, curtain walls as an exterior wall finish and plastic laminates. In addition, the course will cover finishing materials and methods used in kitchens, bathrooms, and other special use facilities. Construction drawings exercises are required in parallel to lectures. *PQ: Arch 252*

### **Arch 353 Environmental Control Systems I Temperature and Humidity (3CH; 3H)**

The first part of The course concentrates on the global climate factors, Human comfort measurements, and climatic elements affecting it, thermal balance of human body, thermal balance of buildings: heat gains, and heat loss in building. Formation of condensation, and thermal profile for architectural elements. Simple calculation of heat and vapor diffusion in building, applications of passive solar energy and shading device systems, wind movement in buildings, evaporative cooling, time lag and decrement factor, traditional solutions of thermal control in buildings in different climates. The second part of this course deals with mechanical systems from the standpoint of architecture. It presents different ways for integrating cooling and heating systems with other architectural elements. *PQ: Arch 252 + Phy 101*

### **Arch 372 Architectural Analysis and Programming (2CH; 2H)**

Pre-design studies and methods of problems understanding and analysis. Site studies and analysis. Context considerations. Design problems analysis and understanding. Architectural and facilities programming. Fundamental concepts and models of architectural problem solving. *PQ: Arch 212*

### **Arch 411 Architectural Design V (5CH; 10S)**

Non-typical design problems that are associated with a salient contextual urban or/and architectural identity or with another allied visual or/and performance art. Design response is expected to be in terms of thinking approaches, design tactics or/and technology of production. Design problems should have a level of complexity and depth of thinking that is appropriate to 4<sup>th</sup> year level. Two different projects or two different design exercises in one big project. *PQ: Arch 312*

### **Arch 412 Architectural Design VI (5CH; 10S)**

Advanced design of buildings with emphasis on the tectonics of structures, envelopes, materials and engineering & environmental systems. Design themes and cases may include high-rise buildings, sustainable & green buildings, non-conventional structures & technically specialized buildings (e.g. hospitals, airports, factories, laboratories ... etc.). Students are expected to apply knowledge previously acquired from related subjects such as building construction, environmental control & structural systems to the design process. One major project or medium ones; each with a specific design problem. *PQ: Arch 411*

### **Arch 432 Local Architecture and Heritage Conservation (3CH; 3H)**

Review the definition of Vernacular architecture and heritage and the history of its conservation and its evolution. Analysis of the planning process for the protection of historic areas and sites within the urban form of cities as part of its management. The importance of including historic areas and sites within the master plan of the city as sustainable development approach. Interpretation of the correlation of historic events and the value of historic sites. The integration between historic sites and their local communities. Interpretation and presentation of historic areas for the public as a socio-economic development issue. *PQ: Arch 441+Arch 332*

### **Arch 441 Theory of Urban Design (3CH; 3H)**

This course is an introduction to theories of urban design. It examines theories and processes within an urban design and planning context, discussing elements, principles and approaches of urban design and urban

planning, which affect the physical design of the urban environment concentrating on contemporary design issues. The course will also tackle the issues of housing and its strategies. *PQ: Arch 331*

### **Arch 447 Geographic Information Systems I (3CH; 2H, 2S) (Elective)**

This course introduces the students to the principles of GIS applied to problems encountered in urban design, landscape architecture, planning and conservation. The course deals with various existing GIS software emphasizing their use as aiding tools in problem solving. *PQ: Arch201+Arch343*

### **Arch 452 Environmental Control Systems II Illumination and Acoustics (3CH; 3H)**

The first part of the course concentrates on the physical characteristics of sound waves, propagation of sound, intensity, sound power units and measurement equipment's. It teaches students how to design space acoustics based on its reverberation time, reflection, sound insulation, absorption and diffusion of sound, echo and flutter echo. Students also learn how to acoustically design auditoriums, halls, classrooms, and other architectural spaces. The second part of the course deals with daylight design, color and light, the functional requirements of lighting, calculation and design of day lighting. It also introduces different daylight estimation methods and their applications in architectural spaces. *PQ: Arch 252 + Phy 101*

### **Arch 454 Working Drawings & Integrated Systems (3CH; 6S)**

This course entails the full preparation of working drawings with their details that can be considered sufficient for construction of a given building. This course aims to train students to deal with projects of different functions and inter-relationships among building systems. One of the goals of this course is to bridge the gap between design and implementation. This course will follow up the process of building from the drawing phase into the construction execution covering the in-between shop and as-built drawings. *PQ: Arch 352+ Arch 456*

### **Arch 456 Mechanical Systems (2CH; 2H)**

Understanding vertical transportation systems, fire-fighting systems, and landscape mechanical systems such as fountain designs and irrigation systems. Students completing this course should also be able to evaluate building cold and hot water supply systems within buildings and neighborhoods, cold and hot water cisterns, sanitary systems: drainage above and below ground, sewage disposal, storm water systems. HVAC systems: boiler and firing equipment, hot water heating systems components and piping, air distribution systems and components. *PQ: Arch 353*

### **Arch 481 Human Behavior in Built Environments (3CH; 3H)**

Environment as a context for human behavior. Basic concepts of mental, affective, spatial and social behavior. The concept of behavioral setting as the basis for designing responsive environments. Topics of perception, cognition, meaning, proxemics, privacy, territoriality, and social interaction. *PQ: Arch 331*

### **Arch 490 Architectural Training (3CH; 8 weeks)**

Architectural design or supervision or Construction Training or studies in an architectural office or consultation company or firm credited by the department, and according to college of architecture and design architectural training instructions *PQ: Passing 120 C.H*

**Arch 503 Descriptive Geometry (2CH; 1H, 2S)  
(Elective)**

Introduces concepts and practices of the precise description of 3D form in space. Highlights systematic projection systems, including orthographic, oblique and perspective projections. Instruction and assignments involve both traditional and digital design media through theoretical lectures and applied exercises. Includes physical & digital model making to enhance imagination of spatial representations & topological relationships of compositions. *PQ: Arch101*

**Arch 504 Visual Communication III (2CH; 4S)  
(Elective)**

Different drawing media's and presentation techniques such as pencil, ink, collage, photography, watercolor, markers, zip/a/ton, airbrush, or a combination of several techniques. Different compositions for project layouts in addition to various conceptual graphic techniques. *PQ: Arch202*

**Arch 508 Visual Studies & Shape Grammar (2CH; 2H) (Elective)**

Critically revisits principles of composition & aesthetics in architecture. Introduces principles of shape grammars and apply them as intellectual exercises of systematic form encoding, decoding & interpretation methods. *PQ: Arch 312*

**Arch 509 Motion in Architecture (2CH; 2H)  
(Elective)**

The fourth dimension of space description is presented through responsive architecture & walkthrough experiences using animation software. Notable holistic or partial examples of architecture will be re-derived with added motion factors. *PQ: Arch 204*

**Arch 512 Interior Design (2CH; 4 S)  
(Elective)**

Introduction of basic elements and principles of interior design with a brief coverage of different styles and recent practices. Requirements include one project as an application. *PQ: Arch 212*

**Arch 533 Restoration and Rehabilitation (2CH; 2H)  
of Historic Buildings (Elective)**

Analysis of the concept of rehabilitation and its socio-economic impacts on local communities. Methods of analyzing, studying and evaluating historic buildings and figuring out all causes of decay. Studying major scientific methods used for conservation intervention .The course reviews the main principles of conservation including the international charters such as Athens, Venice and Burra charters. Case studies will be presented. *PQ: Arch 432*

**Arch 535 History of Art (2CH; 2H)  
(Elective)**

Broad introduction to the History of Art, and to the making and meaning of art objects. It covers through a quick review the arts (mainly painting in broad sense, sculpture and artifacts) of the Mesopotamian, Ancient Egyptian, Aegean, Greek, Roman, Byzantine and Medieval periods. It focuses on the arts of the Renaissance and Baroque periods and ends with Rococo period. It discusses in any given period a selected group of objects and addresses the historical and cultural contexts in which they were produced. *PQ: Arch 232*

**Arch 536 Modern and Contemporary Art (2CH; 2H)  
(Elective)**

Western art produced from the end of the 18th century through the end of the 20th century. An in depth studying of painting and sculpture in their context

through close reading of the form and content of art works. General consideration of the social, economic and cultural changes that took place during this period. It covers the advent and development of art movements including Neoclassicism, Romanticism, Realism and the advent of Photography, Impressionism, Academic art, Post-Impressionism, Expressionism, Abstraction, Constructivism, Dada, Surrealism, Abstract Expressionism, Pop, Conceptual Art; Earth Art, Feminist Art, Postmodernism and New Media Art. *PQ: Arch 332*

**Arch 541 Planning and Urban design (3CH; 6S)**

This studio introduces students to urban planning and design as integral parts of problem solving process. It covers basic conceptual urban planning introduction where students learn, through land use study of qualitative and quantitative analysis, the geometrical formulation and assessment for different land use problems of a case study area. Urban design solutions are applied to these areas in case of new residential layout or regeneration in older parts of the study area. *PQ: Arch 412*

**Arch 546 The Landscape of Parks and Greenways (Elective) (2CH; 2H)**

The course concentrates on six interdependent "human dimensions" of parks and greenways: cleanliness, naturalness, aesthetics, safety, access, and appropriateness of development. Together, these dimensions form a core set of concerns relating to how people perceive and use such places for recreation, conservation, social interface, and other related experiences. *PQ: Arch 341+Arch 411*

**Arch 548 Contemporary Landscape Architecture (Elective) (2CH; 2H)**

Development of profession and art of landscape architecture in the United States, Europe, South America, and Japan in relation to prevailing social, economic, political, and cultural factors. Relationships with other professions, especially architecture and urban planning, and other arts, such as painting and sculpture. *PQ: Arch 341+Arch 331*

**Arch 553 Sustainable and Climatic design theories (Elective) (2CH; 2H)**

This module will cover the different sources of renewable energy that can be used in buildings. It will concentrate on wind, solar and bio-mass as potential sources of energy available in Jordan and will investigate the contribution they can make to a building's energy requirement. Additionally the course will cover the technology used to harness them and limitations associated with their use based on lectures and experiments. *PQ: Arch 353*

**Arch 555 Building design and energy consumption (Elective) (2CH; 2H)**

This course addresses different solutions for building design to minimize energy consumption in buildings. Architectural treatments will be studied to sustain the systems of day lighting and ventilation systems. Building material choice is also essential part of this course to help reduce energy consumption in buildings. *PQ: Arch 353*

**Arch 556 Renewable energy and architecture (Elective) (2CH; 2H)**

The course discusses viable ways and techniques for utilizing the renewable energy in buildings. The student is involved in case studies for renewable energy applications in buildings. Solar energy system design is the main core of this course. Both passive and active

systems will be studied focusing on photovoltaic systems, solar collectors, solar ventilation, and solar cooling. *PQ: Arch 353*

**Arch 559 Energy Efficient Lighting and Building Design (Elective) (2CH; 2H)**

The visual comfort and energy efficiency of any visual environment are the main concerns of this course. The balance between visual comfort and energy efficiency required depth knowledge in both day lighting strategies and artificial technologies. The course focuses on how to design a building for good day lighting based on day lighting devices, size, shape, orientation of windows, selection of glass and shading systems in relation to a building's use and climate. Additionally, it will cover the applications of new lighting technologies used for saving energy and producing more efficient lighting fixtures. *PQ: Arch 452*

**Arch 571 Quantities and Specifications (2CH; 2H)**

Preparations of tender technical documents and specifications of building materials in terms of quality, manufacturing level, and methods of application. Emphasis on representation through tables, charts and instructions, in addition to special specifications where they apply. Individual and team projects that deal with Calculation of quantities are to be adapted. *PQ: Arch 454*

**Arch 572 Project Management (2CH; 2H)**

Introduces the basic and advanced concepts of running architectural projects. Explores the whole project phases and processing, analyzing them in detail under the project management concept of delivering projects "on time, on budget, every time." *PQ: Arch 372*

**Arch 573 Cultural Resources Management (Elective) (2CH; 2H)**

Definition of cultural resources and their management. The international efforts and organizations that are concerned in the protection of the cultural heritage on international and local levels. The standards and guidelines for the planning of the management of cultural resources and the importance of its revival on the local sustainable development. The importance of tourism and other potential economic and cultural sectors on the success of protection and management of cultural resources. Prediction of the main cultural and natural potentials of the cultural environment such as its Fauna, Flora, Geology, climate and social life. Management program and its skills for the decision-making process. The importance of the Environmental Impact Assessment EIA for any new proposed project on cultural resources. *PQ: Arch 432*

**Arch 575 Professional Practice (2CH; 2H)**

Introduction to architectural profession in terms of architect role, responsibilities, duties, and its relations to other engineering professions. The role of Jordan Engineers association in the labor market, discussion of its law and legislative interests and local architectural practices. Building legislation's in the Jordanian cities. Analysis of the relation between the designer, contractor, and client. Emphasis on the principles and ethics of the profession. A quick survey of international architectural practice. *PQ: Arch 572*

**Arch 582 Perception of Architectural form (Elective) (2CH; 2H)**

Human perception of visual forms (two-dimensional and three - dimensional). Visual perception of architectural form including objects, spaces and surfaces. Sensory, formal and symbolic aspects of architectural form. Focus on Gestalt Theory of Perception. *PQ: Arch 481*

**Arch 583 Narrative and Drama in Architectural Design (Elective) (2CH; 2H)**

Reintroducing architectural space as a dynamic and evolving experience organized around human and spatial narrative. Its main goal is to help architectural designers to put themselves in the position of authors of a scenario and to define and understand the series of tensions between narrative thought and formal thought with reference to the components of setting, actors, dramatic conflicts, perception and emotions. Another goal is to introduce "Cinematic Architecture", which is the architecture of imagery expressed in films. The course presents theories and case studies and engages the students in focused original design studies and/or design exercises. *PQ: Arch 481*

**Arch 591 Graduation Project I (2CH; 2H)**

Various approaches to choosing design problems. Projects from the real world especially the local environment and community are encouraged. Conduct a complete and comprehensive methodology in design problem identification and programming including defining project goals and objectives, project requirements and conducting problem analysis and synthesis and the continuous evaluation of various design factors and forces. Introducing the philosophical positions and primary design thinking strategies. Developing students' abilities of project thesis writing. *PQ: Arch 412*

**Arch 592 Graduation Project II (5CH; 10 S)**

Developing an architectural and/or urban solution to the design problem which has been previously identified and analyzed in Graduation Project (1). Design solutions should consider all architectural aspects including functional, technical, artistic, human and philosophical ones. The evolution of a design concept and the design development and submission at stages in coordination with the student supervisor. Comprehensive presentation of the final design requirements. The jury format is an essential part of the course evaluation. *PQ: Arch 591*

**Arch 593 (A, B, & C) Special Topics in Architecture. (Elective) (3CH; or 2CH, or 1 CH)**

A course dealing with diverse special new topics in architecture, it can be substituted as a Department requirement (maximum of 3 C.H.). *PQ: Departmental Approval*