

Bachelor of Architecture - Course description

LNG 171 English 1

LNG 171 exposes students to academic reading and writing skills. It provides instruction and practice in academic reading skills, and requires students to implement writing strategies and participate in classroom discussions. Students will also demonstrate reading comprehension through summarizing and paraphrasing key passages and acquire the skills necessary for success in the first year courses in their major programs. **Pre-requisite None**

LNG 172 English 2

The course focuses on the refinement of reading and writing skills for increased success in the students' major programs of study. It is designed to familiarize students with the critical reading and analytical writing skills through the use of a variety of rhetorical devices, purpose, tone and style to develop critical reading and thinking skills. **Pre-requisite LNG-171**

LNG 173 English II for Engineering & Computing

LNG 173 is an advanced-level English course that explores the written tasks encountered in the professional and academic context within the specialized field of study. In the process of analyzing and composing a research project, students will also develop critical thinking skills and research skills that will help them become effective and successful professionals in their fields. **Prerequisite:** LNG-172

GED 198 Islamic Culture

The course presents an elementary survey of Islam as a religion and an approach to life. Topics include: the Quran, its names characteristics and miracles, the scientific miracles in the Quran, an introduction to the prophetic heritage (the Sunnah), the history of Islam and the Islamic civilization, Islam's vision of the human being, the universe and life, and the pillars of Islamic faith. Students are invited to reflect on the relationships between Islam and other civilizations. **Pre-requisite None**

GED 196 Communication Skills in Arabic 1

يطمح هذا المساق إلى تحقيق مجموعة من المهارات التعليمية الأساسية لبناء شخصية الطالب الجامعي بناء ثقافياً يوافق حياته المهنية ، ويدفعه نحو آفاق ثقافية تساعده على بلوغ مرحلة متقدمة من مراحل استخدام اللغة العربية في المجال العلمي ، والبحث الأكاديمي.

ويشمل هذا المساق ثلاثة محاور أساسية تنطلق من حاجات الدارسين اللغوية :

- 1- قراءات في مجال الاتصال والتواصل الإنساني .
- 2- قراءات في الثقافة الأدبية : يتناول مجموعة من المقالات والدراسات المتقدمة التي تطرح إشكاليات وقضايا تتلاءم مع أهداف التنمية العلمية والفكرية والثقافية والاقتصادية التي تسعى الجامعة إلى تحقيقها على مستوى الفرد والمجتمع .
- 3- أنشطة البحث العلمي : وتتناول البحث الصفي ومجالاته المختلفة ، اختيار نقطة بحثية وإجراءات معالجتها بدءاً من صياغة عنوان البحث ، وطرق جمع مادته و كيفية تدوينها و توثيقها ، و صوغ أفكاره وإخراجه في صورته النهائية

Pre-requisite None

GED 199E UAE Society

This course is an introduction to the UAE society in its political, geographical, cultural, demographical and social aspects. Students are encouraged to reflect on the evolution of society in view of the fast changes brought by modernization and globalization. Topics include: the Emirates geography and history, aspects of life before and after the Emirates political union, economic and social development, the cultural life before and after the union. **Pre-requisite None**

GED 110E Modern Art Appreciation

Modern Art Appreciation' is a broad-based (1) theoretical and (2) practical course. It focuses on (1) visual theory, the major modern art movements, such as The Origins, The Islamic Art, The Renaissance Art, The Modern (19th century) Artistic Movements. (2) In addition, students will identify various styles within Modern Art Movements, and apply this knowledge in studio and class assignments. ***Pre-requisite None***

GED 111 Music Appreciation and Communication

Stimulate music appreciation and communication. Identify factors that promote and inhibit music, music history, music practice and communication via music. Look at popular music and its impact on every-day life. Understand the value of music as part of mass communication and media. Learn the building blocks of music history, music practice and music appreciation. ***Pre-requisite None***

GED 112 Using Positive Psychology at Work

This advanced psychology course invites students to explore the emerging field of Positive Psychology with a focus on the workplace. Students will learn about the science of happiness by exploring theory and concepts relative to a state of well-being, such as the architecture of sustainable happiness, adaptation, broaden and build theory and flow. The second part of this class will focus on the application of theory in the workplace as well as in one's personal life. Students will be invited to engage in several positive psychology interventions (PPIs), such as generating positive emotions to improve creativity, relationships with coworkers, and work performance. How these techniques are currently being used within organizations to increase employee retention and job satisfaction will also be reviewed through the identification and evaluation of two corporate wellness programs. Students should be aware that there is a significant amount of reading involved. Failure to keep up with the readings will result in poor academic results. ***Pre-requisite LNG-172***

GED 252E Critical Thinking

This course aims to engage student's in critical thinking in a range of contexts. Student's will analyze and evaluate the language of argumentation by identifying premises and conclusions, deductive and inductive reasoning. Furthermore, students will evaluate arguments; validity, soundness and problems of interpretation as well as common fallacies of reasoning. Students will distinguish different types of thinking through evaluating independent and collaborative learning, and group dynamics. In addition, students will acquire strategies and methods to solve problems, equate probability and causality. Lastly, students will learn to analyze reading texts and respond by composing a critical analysis. ***Pre-requisite LNG-172***

GED 205E Psychology in Every Day Life

An introduction to concepts and principles of selected areas of psychology and their applications to daily living. The aim is to foster students' understanding of the self and its interactions with the environment. Topics include: research methodology in psychology, basic neuro-psychology, theories of learning, memory, motivation, development, and intelligence, as well as a focus on health, psychotherapy, and social psychology. ***Pre-requisite LNG-172***

GED 272E Fundamentals of Public Speaking

Being able to communicate well in public situations is something any university graduate is expected to be able to do with ease. This course will introduce students to the fundamentals of public speaking. These include the steps of the speech-making process. The course will also focus on developing oral communication skills and presentation skills that students need to succeed in their major programs of study and to advance in their future careers. Students will be asked to give various speeches in a wide range of settings and for a variety of purposes

to enhance their appreciation of and comfort with the art of public speaking. Fundamentals of Public Speaking' also focuses on developing skills for thinking critically, whether one is designing one's own presentation, listening to the presentations of others, or evaluating information and solutions in the process of accomplishing a group task. ***Pre-requisite LNG-172***

GED 324E Ethical Reasoning for Today's World

This course examines the theories, skills and applications of moral philosophy, including a description and a discussion of the three influential approaches to morality, namely: character ethics, consequence-based ethics, and principle-based ethics. Students will also engage in a good citizenship project where they will put into action their character strengths as per the Aristotelian theory and consider what their role is in the larger social context as a good, ethical citizen. ***Pre-requisite LNG 172***

GED 298E Special Topics in Western Culture

Field Study – English Language and Canadian Culture: The course will allow students to enhance their English language skills and develop a firm understanding of Canadian culture and history. The field course will see students spending 4 weeks at the University of Ottawa located in Canada's Capital region where they will study intensive English, and also, through a series of lectures and seminars, learn about Canadian history and culture. Complementing the course will be an extensive schedule of cultural excursions aimed at exposing students to life in Canada. ***Pre-requisite GED-198E , LNG 172***

MTH 112 Calculus I

The course introduces the students to the fundamental concepts of calculus: limits, continuity, differentiation and integration; and trains them to apply these concepts to problems that arise in science and engineering. ***Pre-requisite Pass Math Placement test or MTH-012***

SCI 101 Physics I

This course covers Newton's laws, forces, equilibrium, moment and couples, structures in equilibrium, centroids and centers of mass, moments of inertia, motion in two and three dimensions, and rotation. ***Pre-requisite None***

GED 140 Fundamentals of Innovation and Entrepreneurship

This course is developed for the UAE based on decades of practices and experiences of teaching innovation and entrepreneurship at Stanford University that has fueled innovation and high growth in Silicon Valley. The goal of the course is to equip the next generation of leaders in the UAE with an innovative and entrepreneurial mindset and its related core skills. The course is composed of three modules designed to be taught over a 15-week semester:

Module 1: Design Thinking

Module 2: Entrepreneurship

Module 3: Growth and Leadership

Most sessions include a mix of components: lecture, discussion, interactive activities in class, and open Q & A if an appropriate expert or guest speaker is available. The session descriptions below contain a summary of the session, a list of materials to read and videos to watch before the session, and a set of study questions to contemplate beforehand and to be used in class discussion

Pre-requisite None

DES-121 Design Theory**3-0-3**

DES-121 represents the foundation for the expansive exposure to the theoretical context of design and design activity. It aims at enhancing understanding the meaning and the context of design and the skills of analyzing it. In particular, it focusses on the interpretation of design as formally and creatively shaping human beliefs and experiences, the design process and its vocabulary, the design elements and principles and their manifestations in natural, abstract and man-made contexts. It also addresses the skills of analyzing selected examples and settings to reveal their implicit structures and to link these to the specific factors that have shaped them. The course will provide the basic conceptual foundation for the history courses that will follow. At the same time, it provides a theoretical background for the design activities taken at DES-161 in the same Semester. The course progresses from an exploration of the meaning of design and its process to an understanding of the elements and principles to culminate finally in an exploration of a particular spatial setting. To achieve these intents, structured lectures, assignments and site visits will be utilized. **Co-requisite: DES 161 & 171**

DES-122 Human Factors**3-0-3**

DES-122 touches the social responsibility of architects and interior designers to respond to users' needs in the context of design. It represents the first encounter with systematic analysis of the ways into which a space is used. It aims at enhancing understanding about the dynamic relationship between people and the built environment in view of the variability and changeability of their needs. The course aims at creating an awareness of such diversity and at enhancing knowledge on addressing it in design solutions. In particular, it focuses on enhancing the awareness about and the understanding of users' needs, the basic concept of anthropometrics, Universal design and the general relationship between users and space on different levels. It also emphasizes the skill of analysing users' needs and design setting in view of specified universal design parameters. DES-122 will prepare the foundations for understanding inclusiveness of varied users requirements in subsequent design studios. Similarly, it supports activities in DES-162 taken at the same semester. It progresses from the concepts of anthropometrics and universal design to a selected component of the built environment to culminate in addressing psychological and cultural effects in a space. To achieve this, lectures, assignment and site visits will be utilized. **Co-requisite: DES 162 & 172**

DES-161 Introduction to Design (Studio)**2-4-4**

DES-161 represents the foundation for the nine design courses that will follow, and thus it is a significant milestone in the education of architects and interior designers. The course aims at developing design thinking as a creative and a critical activity enabling a change in people's lives. It focuses on developing the ability of creating and representing 2D and 3D design formulations and their detailed elaboration in response of design intent. To support this, fundamental explorations of the meaning of design, the design process, the design elements and principles and their manifestations in natural and man-made contexts are explored. The course prepares students for DES-162 addressing small-scale generic design problems. For courses offered at the same semester, it represents a context for practically exploring the concepts that are taken in Design Theory and that for applying those taken in Drafting and Model making. DES-161 progresses in four units from an analytical exploration of design and its manifestations to formative activities in selected design projects. It covers identifying design in Natural and Man-made contexts leading to 2D and 3D design formulations addressing design principles. Finally, building on knowledge gained, a simple functional dimension is incorporated in a 3D formulation. Through these units, the articulations of a personal design approach and self-development are emphasized. The course is delivered through lectures, discussions, critiques, and design projects. **Co-requisite: DES 121 & 171**

DES-162 Fundamentals of Design (Studio) 2-4-4

DES-162 touches the foundations of design thinking and prepares students to embark on addressing real architecture and interior design problems. It aims at enhancing design thinking and practice relevant to small-scale simple projects. It enables building awareness about the value of design in formally structuring beliefs, experiences and activities. It contributes to enhancing understanding of the basic nature of the design process. Its main focus is on analyzing design problems, identifying their particularity and on formulating, elaborating and representing solutions that capture such a particularity. The course, in addressing functionality follows DES-161 wherein abstract 2D and 3D explorations were emphasized. It prepares students to address generic design problems comprehensively in the following semester and utilizes knowledge of Human Factors and Freehand Drawing taken at the same semester. Progression is made through projects dealing with an interior space, a shell and a new formulation. To achieve this, design activities, lectures, critique, and site visits are utilized. ***Pre-requisite/Co-requisite DES-161, DES-121 & DES-171 & Co-DES 122 & 172***

DES-171 Drafting & Modeling 2-2-3

DES-171 is the foundation for the essential visual communication skills expected by architects and interior designers. It aims at enhancing understanding of the basic concepts of drafting and model making and at developing the skills of applying these concepts to represent designed and real settings. In particular, the main drafting and model make conventions dealing with text, lines and scale and the main concepts relating to projections, sketching and perspectives are introduced. It focuses on enhancing the skills of constructing these projections leading to the representation of reality and design formulations through plans, sections, elevations and reflected ceiling plans. The course prepares students to other communication skills relating to freehand drawing, rendering and computer aided design. It progresses from basic drawing and model making exercises to a complete set of 2D and 3D drawings of a small project. The course is structured in lectures, class assignments and site sketching. ***Co-requisite: DES 121 & 161***

DES-172 Freehand Drawing & Rendering 2-2-3

DES-172 addresses the aptitude for visually representing the reality around us in order to enhance comprehension. It aims at understanding the main principles of freehand drawing and enhancing the skills of applying them to represent this reality. It addresses the relevance of this specific type of visual representation in revealing reality and explores the potentials of different materials and techniques towards this intent. It focuses on developing the skills of observation, documentation and communication pertaining to the particularity of material and approaches. Value, contour, light and shadow will be addressed. Students will be prepared to produce their portfolio to reveal their specific personal approach and intent. The course will progress in lectures and practical explorations of freehand and rendering work covering lines, shapes, forms, contours, cross contours, volume, value, shading, perspectives and rendering in watercolour and markers. This will be accomplished through structured lectures and individual in-class and out-of-class assignments. ***Co-requisite: DES 122 & 161***

DES-221 History of Architecture and Interior Design 1 3-0-3

DES-221 touches the significance of awareness about history in the education of the architect and the interior designer. It focuses on the development of architecture and interior design from the early beginnings to the 19th century. It examines the manifestation of culture into built form; the architectural and interior design canons and their connections to the natural and cultural factors that have shaped and sustained them over time, their detailed particularity and their key textual and visual details. It also emphasizes the analyses of styles, periods and examples and the presentation of their outcomes and patterns. The course builds

on the general introductions in Design Theory and leads to DES-222 relating to subsequent developments and contemporary theories. It connects to other courses in the semester by providing a historical context for the understanding of the design process (DES-261) and of building materials and construction methods (DES-241). The course progresses in describing the early formulations to Mesopotamia, Egypt, Greek, Roman, Byzantine, Romanesque, Gothic, Renaissance, Baroque and the 18th century. To achieve this and in addition to lectures, presentations, seminars and research assignments are utilized. ***Pre-requisite LNG-171 & DES-121***

DES-222 History of Architecture and Interior Design 2 3-0-3

DES-222 addresses the significance of contemporary architecture and interior design since the 19th century. It aims at enhancing knowledge about the language of Western Architecture & Interior design, its movements and styles in view of their historical and intellectual context. It emphasizes understanding the detailed particularity of selected streams, the unique contributions of their pioneers and their theoretical positions and design approaches. It contributes also to the ability of conducting research and abstracting ideas about these traditions. The course builds on DES-221 covering the same intent but for an earlier period. By completing a wide range of history, students will be prepared to focus on selected historical investigations in local and selected contexts. It connects with other courses by providing a historical background for the design process and for the understanding of building materials and processes. The course progresses from Architecture at the turn of the century (Roots of Modern Architecture) to; Modernization and Industrialization, Architecture after WW1, Pioneers of Modernism, Reactions to Modernism, High-Tech and Post-Modernism, the Realists and the Rationalists, Deconstruction and finally the New Directions in Contemporary Architecture. To achieve this, lectures, presentations, seminars and research assignments are utilized. ***Pre-requisite: DES-221***

DES-241 Construction and Design Integration 2-2-3

DES-241 represents the first introduction to the technical dimensions in the architecture and the interior design education relating to building construction. It aims at enhancing knowledge of construction systems and materials. In particular, three intents are sought. First, enhancing awareness about the importance of constructability in the formulation of design; Second, enhancing understanding of; the relevance of sustainability to building materials, the types of construction (concrete, masonry, steel and wood); their elements and the appropriateness of building materials to specific Architecture and Interior Design settings. Finally, third, enhancing the abilities of assessing building materials and preparing detailing of simple construction components. The course leads to ARC-242 or IND-242 focusing on a more elaborate understanding of detailing. It is also linked to the design studio taken at the same semester by providing a perspective about building materials as they relate to the formulation of design. It progresses from a general introduction of the structural and load bearing systems and foundations to an examination of Masonry, Concrete and Precast Concrete, Steel and Wood constructions. In each, an attempt is made to illustrate the basic characteristics and elements culminating in an elaboration of a simple detail. The course is delivered through lectures and presentations, site visits, exercises and assignments. ***Pre-requisite DES-162***

DES-261 Design Principles (Studio) 3-6-6

DES-261 represents the foundations for a comprehensive design thinking wherein the design process and criticality are to be formalized. It aims at enhancing the capacity to address small-scale design problems in a comprehensive manner. It emphasizes; creating an awareness about the cultural and natural factors surrounding design; the incorporation, in the formulation of design solutions, the basic knowledge of sustainability, human factors and materials; Addressing and refining space requirements; formulating creative solutions, elaborating detailed design intent and finally creatively representing design analysis and their

outcomes. The course builds on earlier small-scale design explorations to lead to subsequent specialized and bigger problems and is utilizing knowledge of sustainability and construction taken at the same semester. It progresses in interior design and architectural projects addressing residential and public functions. These include submissions on problem analysis (functional, site, symbolic, precedents), concept formulation and final design in each. To achieve this, and in addition to the briefing and design activities, the course incorporates lectures, presentations, seminars, critique and site visits. ***Pre-requisite DES-162, DES-122 & DES-172***

DES-271 Computer Aided Design 2-2-3

This course represents the foundation for utilizing digital representation in the practice of architecture and interior design. It aims at developing the capacity to use graphic drafting and modeling techniques in describing design problems, analysis and solutions. In particular, it enables; creating a general awareness about the value of such techniques; enhancing understanding of the main concepts and developing the skills of utilizing their related tools in creating and manipulating 2D and 3D formulations. The course is designed to introduce the application of Computer Aided Design (CAD) and Building Information Modelling (BIM). The course builds on the general drafting and freehand knowledge and skills gained earlier in the curriculum and prepares students for the utilization of specialized modeling techniques. It utilizes design work taken at the same semester to develop the skills in selected tools. As DES-271 progresses from an introduction of the basic concepts and their applications to the mastering of the different tools culminating in drafting and modeling 2D and 3D comprehensive design formulations. Producing Plans, sections, axonometric drawings, 3D modelling and renderings form the core of class exercises leading to basic presentations of architectural and interior design subjects. A contemporaneous design project in conjunction with DESI 220 will be developed through the application of tools and techniques derived from DESI 231. The course is delivered through a combination of lectures and tutorials workshops in computing lab, along with, demonstrations and applications of varied CAD and BIM authoring tools. ***Pre-requisite DES-171***

DES-341 Environmental Systems & Design Integration 2-2-3

DES-341 contributes to the significance of awareness about the natural climate and its implications on the creation of sustainable settings. It aims at enhancing knowledge and skills relating to passive design. It focuses on understanding human comfort and environmental factors and on applying this understanding in the design of responsive buildings and interiors. The factors that contribute to the heating and cooling of a building and the strategies of minimizing energy consumption will be introduced. Emphasis is placed on selected concepts relating to ventilation, day lighting, solar energy and geometry, shading and control, thermal envelopes, energy efficiency and acoustics. DES-341, in focusing on passive strategies, builds on the general knowledge of sustainability gained in ARC-232 and prepares for ARC-342 or IND-342 wherein detailed active strategies are emphasized. It is also intended to inform sustainability-related decisions in the design studios taken at the same and at subsequent semesters. The course progresses from the concepts of human comfort to solar energy, illumination and acoustics, thermal envelopes and finally passive design strategies. It is delivered through structured lectures, site visits and varied practical work. ***Pre-requisite ARC-262 /IND-262 and ARC-232 /IND-232***

DES-351**Internship****0-6-3**

DES-351 Internship, as a pre-professional experience represents the opportunity of exposure to the real life architectural and interior design practice. It aims at enhancing the knowledge and skills gained earlier and at gaining a deeper and a more comprehensive perspective of these as applied in a professional setting. To support career preparation, it focuses on three intents; First, enhancing awareness about the particular roles of architects and interior designers, second, enhancing understanding of; the main theoretical positions towards the design process and about the varied factors involved in the professional practice of architecture and interior design and particularly those relating to forms of practice and project delivery; and third, enhancing the technical skills of assessing and developing design briefs, formulating design solutions and elaborating detailed design and construction documents. It builds on the comprehensive knowledge and skills gained at the specialized technical and theoretical courses. It prepares for the specialized advanced senior studios by enabling a professional perspective in addressing complex housing, institutional, urban design and the graduation project. Internship covers four weeks (160 Hours) of professional experience in architectural or interior design firms. In each week, there are Weekly Reports by students on their activities and by the field supervisors on the quality of their work. Students are expected to cover Briefing, Design Development, Detailed Design, Construction Documents, Specifications, Schedules, Site Visits, Supervision activities as well as Client Liaison. At the conclusion of Internship students submit a portfolio documenting their internship achievements and attend an Exit interview with faculty.

Pre-requisite * 90 Cr.H. for ID & CGPA ≥ 2 & **120 Cr.H. for ARCH. & CGPA ≥ 2

DES-371**Working Drawings and Detailing****2-2-3**

DES-371 Working Drawing & Detailing establishes the specialized technical representation skills relating to the detailed elaborations of design formulations. It aims at enhancing the capacity of producing working drawings out of general design formulations. In particular, it focuses on three main intents: First, increasing awareness about the value of working drawings in the realization of architecture and interior design; Second, enhancing knowledge about the principles and conventions of detailing and their comprehensive representation as a communication tool for operations towards execution; and Finally third, developing the skills of organizing and preparing a comprehensive set of construction documents incorporating drawing conventions and symbols, cross-referencing schedules and specifications. The course builds on earlier knowledge and skills relating to building construction and drafting courses and to the applications made at the design studios. It prepares for the production of detailed elaborations of selected design components in subsequent design studios and in the comprehensive graduation project in particular. It is linked to ARC-344 focusing on structural design and to ARC-342 focusing on building systems. Both of these courses will provide the technical background necessary for the elaboration of the construction documents as applied to a particular design problem. The course progresses from an introduction of the basic principles and conventions of detailing and its representation, to structured detailed elaborations of typical components of buildings (Roof plan, doors and windows, Façade sections and stairs) to a final production of a complete set of construction documents for a selected design project. To achieve this, lectures, critique and individual practical works are utilized. ***Pre-requisite ARC-361/IND-361 and ARC-242/IND-242***

ARC-232**Site Planning & Landscape****3-0-3**

This course is the introductory level course in Site Planning and Landscape Design. It provides the students with the first exposure to the concepts and techniques for the analysis and planning of sites that respond to human, contextual and infrastructural criteria. The role of analysis is emphasized as the basis for site development, and various analytical approaches are surveyed. Methods of developing both large and small scale sites are explored with

reference to the constraints and opportunities of the natural, controlled and built environment, and the appropriate legal and planning setting. The course will also introduce the student to basic concepts of Landscape Design as it pertains to architecture and introduces students to landscape Graphics and the concepts of the fundamentals of landscape and environmental planning. It covers topography and earth modeling, landscape planting techniques, circulation, and assessing environmental impacts. This course develops the basic environmental knowledge gained in DES-231 Sustainability of Buildings, and Site explorations of DES-261 and it is designed to run in parallel with the Design Studio DES-262 Design Methods where students will be expected to demonstrate the ability to apply the skills and knowledge gained in this course into their studio design projects. The course is also the prerequisite to the third year course DES-341 and ARC-361 Environmental design Studio where students will be expected to build upon this basic knowledge to develop advanced Site and Environmental Planning skills. ***Pre-requisite: None***

ARC-242 Advanced Construction and Design Integration 2-2-3

ARC-242 represents an enhancement to the technical knowledge on building systems and materials initiated in DES-241. It aims at enhancing a developed knowledge of construction systems and materials focusing on the detailed elaboration of the combinations of components within them. In particular, two intents are sought. First, enhancing awareness about the importance of detailing in relation to design; and second, enhancing understanding of; the specific relevance of sustainability to the detailing of components, the detailed properties of masonry, concrete, steel and wood systems, the elements in each (windows and doors, frameless glazing, stairs, lightweight façades, roofs, ceilings and partitions) and the specific properties of finishes. The course, prepares students to address the construction dimension in the following specialized design studios. It prepares for a greater understanding of building systems and their integration as taken in DES-341. It is linked to the design studio taken at the same semester by providing the background needed in the formulations of design proposals in ARC-262. It progresses into building components and their properties to a discussion of building materials. These include Doors, Glass, Windows and Frameless Glazing and detail, Flooring, Ceilings, Wood, Partition Walls, Stairs, Escalators and Elevators, Façade Systems, Lightweight Façade Detail, Roofs and Finishes (Stones, Ceramics, Wood, Stucco and Paints). The course is delivered through structured lectures, site visits and assignments focusing on researching materials and selected construction components (Frameless Glazing, Lightweight Façade, Flat and Inclined Roof). ***Pre-requisite: DES-241***

ARC-262 Design Methods (Studio) 3-6-6

ARC-262 Design Methods is a further strengthening of the design capacity that was developed in DES-261. It aims at enhancing a deeper exploration of the design process and at achieving a structured application of the detailed activities of analysis and design formulations that are applicable to mid-size problems. It emphasizes; creating a critical awareness about the cultural and natural factors surrounding architectural design, the incorporation, in the formulation of design solutions, the relevant knowledge of sustainability and the basic principles of sustainable design, history and construction, thoroughly analyzing generic design problems, elaborating space programs, formulating creative solutions, elaborating their intent in detail and finally creatively representing them. The course builds on the development of structured design explorations in DES-261 to address subsequent specialized and bigger problems in year 3 and is utilizing knowledge of construction systems and contemporary history taken at the same semester. It progresses in architectural projects including submissions on problem analysis, concept formulation and final design in each. To achieve this and in addition to the briefing and design activities, the course incorporates lectures, presentations, seminars, critique and site visits. ***Pre-requisite: DES-261***

ARC-272**Building Information Modeling****2-2-3**

The course represents a response to the emerging advanced modeling technologies in the practice of Architecture and Interior Design. The aim of this course is to develop a comprehensive insight and understanding of the concept of Building Information Modeling (BIM) and the methodologies involved with planning with BIM. Students will develop an understanding of how BIM accompanies a building from the first design considerations; through the entire planning and construction process; the lifecycle of the building; until the final demolition of the building. The course introduces various software applications dealing with different aspects of BIM. Strategies of Information Sharing, Evolutionary Planning rather than Revolutionary Planning, and open File Exchange standards will be discussed. Students will have access to various software applications supporting the BIM model. This course builds upon the introductory level computer course DES-271 where students will have their first interaction with CAD 2D and 3D platforms and introduces the students to the emerging standard of BIM that describes buildings as comprehensive digital 3D models enriched with substantial amounts of metadata (e.g. structural, costing, thermal). The course will be based on theoretical investigation and practical simulations and focuses on the integration of building information to facilitate comprehensive flow of information technological aspects of building construction. The course will facilitate innovative and time saving applications benefiting future design courses and thesis work. ***Pre-requisite: DES-271***

ARC-321**Research & Design Applications****3-0-3**

ARC-321 contributes to the architect's essential critical thinking and research competencies necessary for the development of creative, critical, and speculative design thinking. The Course addresses the relationship between Research and Design. It reveals the importance of developing a research culture as a necessary condition for architectural innovations and the exploration of novelty in architecture. It aims to enhance the understanding of the way human culture is manifested in space and raise the skills to explore and experiment on new forms of space to host human activities. To achieve these educational objectives, the Course introduces the students to the procedures and methods to generate new knowledge, necessary for the design activity covering a spectrum from quantitative and qualitative methods to literature reviews. It invites students to elaborate on and familiarize themselves with the techniques, tools, and procedures each type of method implements, their connection with the design thinking and process, and the formal and ethical issues related to the research activity. The Course uses as a vehicle general design topic and narrows them towards specific research questions that request the definition of research objectives and the methods to be adequately answered. It is a foundation to develop research competencies in the design activity in studios and in other courses. To achieve this, lectures, assignments, individual investigations and site visits will be utilized. ***Pre-requisite: ARC-262 & LNG-173***

ARC-342**Advanced Environmental Systems & Design Integration****2-2-3**

ARC-342 addresses the responsive design decisions towards the natural environment and their implications on the creation of sustainable settings. It aims at enhancing knowledge and skills relating to active design resulting from various building systems. It focuses on understanding human comfort and environmental factors; the detailed considerations of lighting, mechanical heating and cooling and the strategies of minimizing energy consumption. Emphasis is also placed on selected specialized building systems relating to management, transportation, water, waste, fire safety and relevant code and design guidelines. The course enhances critical skills of assessing these systems in view of the particularity of design contexts. ARC-342, in focusing on active strategies, builds on the general knowledge of passive strategies gained in DES-341. It is linked to sustainability-related decisions in the design studios taken at the same and at the subsequent semesters. The course progresses from introducing the concepts of building systems in general to

building systems and is links directly to knowledge of structure (ARC 343) and environmental systems (DES 341) taken at the same semester. It progresses in two projects, which have unique environmental and cultural contexts to challenge the students to create specific environmental responses. To achieve this and in addition to the briefing and design activities, the course incorporates lectures, presentations, seminars, critique and site visits. **Pre-requisite: ARC-262 & DES-222**

ARC-345 GIS Applications in Architecture 3-0-3

This is a specialized course introduces students to information management systems in the practice of Architecture and Urban Design. The aim is to develop a comprehensive understanding of the concepts of Geographical Information Systems (GIS), the methodologies and the application areas. Students will develop an understanding of how GIS is utilized in urban design and architectural projects, the process of data collection, data management, data visualization and querying, analysis of spatial, geographical and cartographic data, ways of representing real world objects and features, 3D GIS models and the representation techniques for GIS projects. The course will be based on theoretical investigation and practical simulations and focuses on the integration of GIS in architecture and urban design projects. The course will facilitate innovative methods benefiting future architecture and urban design courses and graduation project. In order to achieve this: lectures, presentations, class discussions, workshops, site visits and seminars will take place. **Pre-requisite: ARC-342 or IND-342**

ARC-362 Design Studio – Housing 3-6-6

ARC-362 Design Studio-Housing represents an advanced architectural design thinking focusing on a specialized typology. It aims at enhancing advanced and specialized design thinking focusing on urban housing problems, theory and design. Three specific intentions are sought. First, enhancing a critical awareness about the particularity of this typology and its connections to the urban context. Second, enhancing understanding of housing problems and approaches, the detailed design considerations, the design process as involving the formulation of alternatives and finally the connections between housing developments and their city and urban context. Finally, third, the course focuses on enhancing advanced skills in developing housing briefs, formulating solutions to complex housing problems and elaborating them in detail and representing them to convey their design intent. The course leads to the urban design studio, integrated design studio, Institutional design studio and the final graduation project, thus concluding a comprehensive design sequence covering varied scales and complexities of architectural problems. It is utilizing knowledge of Research & Design Applications, structure and Advanced Environmental Systems & Design Integration taken at the previous and at the same semester respectively. The course is composed of a progressive introduction of housing theories and principles and a parallel application on a specific design project. The project progresses from Analytical Phase (training, programming, data collection) to Creative Phase (Analysis, Synthesis, development). And conclude with the Executive Phase (communications, solution, presentation & professionalism). In this process the student will go through a sequential step to achieve a complex and comprehensive design outcome. Through these sequential phases the student will gain knowledge in observation, measurement and inductive reasoning in the Analytical Phase. Critical skills in evaluation, judgement, deductive reasoning and decision in the Creative Phase. And professional competencies such as description, translation and transmission in the Executive Phase. To achieve this and in addition to the briefing and design activities, the course incorporates lectures, presentations, seminars, critique and site visits. **Pre-requisite: ARC-361, 343, 272**

ARC-431**Planning & Urban Design****3-0-3**

ARC-431 contributes to the foundation of the specialized field of Planning and urban Design as professionally anticipated from architects. It aims at enhancing knowledge about the main concepts of planning and urban design and at enhancing the skill of analyzing them in published and real settings. In particular, it focuses on three intents: First enhancing awareness about the complex and diverse context of planning and urban design; second, enhancing knowledge about the framework of planning and urban design covering the evolution of cities and their role in history, the social implications of urbanization, the evolution of master plans, the structure and functions of the planning process and the contemporary issues relating to social justice, citizen participation, and resolving conflicts in planning; and third, enhancing the skills of analyzing theoretical positions and real urban contexts in relation to specified parameters. ARC-431 builds the theoretical background to prepare for advanced courses addressing the Urban Design studio and the Graduation project. It will support the Graduation project as a background of the theories linking the individual building to its urban context. It will similarly support the design studio taken at the same semester by providing the necessary background to address specialized institutional design problems. It progresses from an introduction of Urban Planning to address; the history and growth of cities; the evolution of modern planning, the functions of urban Planning, the definition and history of urban design, urban design theories and principles and finally to focus on urban design elements and processes. To achieve this, the course incorporates lectures, presentations, visiting speakers and projects with different themes for the class to examine, discuss, develop and present as a research assignment. ***Pre-requisite: ARC-362***

ARC-432**Vernacular Architecture and Conservation****3-0-3**

ARC-432 represents the specialized preparation on vernacular architecture and conservation. The course aims at enhancing knowledge on architectural conservation and of the theoretical approaches towards vernacular architecture. In particular, it focuses on enhancing understanding of the local conservation organizations and their actions, international principles and guidelines in architectural, archaeological and urban conservation through the understanding of the charters of major conservation organizations, vocabulary and terminology that are used in the profession, material, technical and structural aspects of architectural conservation, the standards and framework of conservation drawings, and graphic representation of architectural and archeological conservation projects. The course progresses in two major projects where with the first one, the students will gain knowledge and understand and discuss the different implementations on architectural conservation, secondly the students will gain knowledge about vernacular architecture and their response to local needs and traditions and discuss and draw evaluations of local architectural conservation projects. In order to achieve this; workshops, lectures, site visits, class discussions discussing the local and international conservation examples will take place. ***Pre-requisite: DES-222***

ARC-433**Urban Studies Seminar****3-0-3**

This course is a selective quest towards the advanced understanding of the theory and practice in urban design. The aim is to advance both of the knowledge of the contemporary and traditional planning and urban design theories and their associated paradigms and the skills of analyzing their implications on urban form. In particular, two intents are presented; first, enhancing understanding the theoretical approaches on social and spatial dimensions of the built environments, and second advancing the skills of analysis and interpretation of social needs and urban patterns. The course as a school elective will support advanced studio courses and the graduation project and builds on earlier concepts taken within the urbanism and environment subjects. It will introduce the theoretical dimensions focusing on the perceptual, social and on the functional and temporal dimensions of urban design. Practical

assignments will examine urban contexts and concepts, issues, values, and emerging theories. The course is delivered through lectures, site visits, seminars and presentations.

Pre-requisite: ARC-431

ARC-441 Building Code 3-0-3

ARC-441 Building Code represents the systematic foundation and exposure to the legal framework in architectural formulation as anticipated by the public. It aims at enhancing understanding of the Building Code requirements and that of the skills of assessing them in the design context. In particular, it focuses on three intents. First, enabling a greater awareness of the impact of the Building Code on building design and about the tension of linking creativity to the limitations that are imposed by the code; second enhancing understanding of the components of the International and the local Building Codes in relation to safety, health and means of egress. Finally, third, enhancing the skills of interpreting Code requirements in relation to design intents, assessing buildings in terms of compliance with these requirements and applying them in the generation of new designs. The course builds on previously acquired knowledge in the areas of design, structure, construction, and environmental systems. It will provide an added challenge for the materialization of design ideas in the following design studios in creating detailed drawings with code based specifications. Similarly, it supports the assessment of specific Code occupancy requirements relating to the Housing design studio taken at the same semester. ARC-441 progresses from introducing the general regulatory context as reflecting the professional roles of architects to a discussion of the varied components of the International Building Code covering Occupancy Types, Size, Construction Types and Egress Requirements. It culminates in a comprehensive analysis of proposed or real buildings in term of compliance with some specific Code requirements. Lectures and theoretical presentations are combined with practical applications in the delivery of this course. ***Pre-requisite: ARC-362 & DES-371***

ARC-451 Professional Practice & Project Management 3-0-3

This senior level course is the first course that introduces students to the practice of architecture. It focuses on areas of the professional Practice of architecture such as professionalism, professional ethics, and the techniques and processes used by the industry to bid, win and manage projects. It will also provide an overview of methods, techniques and tools used to manage Architectural Projects through both Pre contract and Post contract phases. The course has the following specific scope and components: The profession of architecture & the role of the architect, professional ethics, design project stages, construction contracts and client - consultant agreements, pre & post contract services & management, project scheduling, time & cost management. The course connects the development of design skills during the previous years to the professional management of design projects in real world scenarios. It also builds upon the knowledge gained in ARC-541 Construction Economics, which will further introduce students to the economic models used in design and construction projects. The course will engage a wide variety of learning modes, including, lectures, group exercises, but will be strongly connected to the local profession and will include visits to Architectural Practices as well as guest speakers from all facets of the Local construction industry. ***Pre-requisite: ARC-362***

ARC-461 Urban Study (Studio) 3-6-6

ARC-461 represents the seventh specialized preparation studio in the architectural curriculum focusing on urban design. It aims at enhancing advanced design thinking and abilities to address urban design problems. It focuses on four main intents. Firstly, it enables a greater awareness about the comprehensive nature and impact of urban design; Secondly, it facilitates an enhanced understanding of the research-oriented urban design process together with an introduction to the current problems and the strategies of addressing them and the detailed dimensions of the city context, the regulations and the overall socio-economic and

cultural context. Thirdly, it emphasizes the development of enhanced research skills in examining urban design contexts and users' requirements, and, fourthly, it enables a greater refinement in the skills of developing and elaborating architectural briefs, and of formulating and representing comprehensive urban design strategies and their detailed elaborations. The course builds on the previous general and specialized design studios and provides the urban theoretical framework for deeper investigations anticipated in the integrated and institutional studios and final graduation project. Similarly, the course is linked to ARC-431 taken at the same semester to establish a comprehensive base for the following studios and final project linking the specificity of the selected project to the general urban considerations. ARC-461 progresses in an urban design project from general investigations of the urban hierarchy, building typology and urban form to the formulations of a detailed brief and a master plan to establish the general urban design directions. The project is then elaborated in detail to cover the urban blocks, systems and outdoor space. To achieve this, and in addition to briefing and design tasks, lectures, site investigations, seminars are utilized. ***Pre-requisite: ARC-321, ARC-362 & Co-431***

ARC-462 Integrated Design (Studio) 3-6-6

ARC-462 Integrated Design represents the culmination of design thinking focusing on the technical dimensions of architecture as applied to specialized and large-scale problems. It aims at enhancing advanced design thinking focusing on the integrated conceptual and technical building systems. In particular; it enables an enhanced awareness about the interrelationship of the wider natural and social context with the building technology and an enhanced knowledge of the integrated design process covering the detailed stages. It focuses on the development and refinement of design briefs and on the creative formulation, and detailed elaboration of holistic building systems in design proposals. The course is the last of design studios focusing on general typologies and leads to advanced design studios focusing on specific building types. It is utilizing knowledge of structural design, environmental systems and working drawings taken earlier. It progresses in a project including submissions on problem analysis, concept design and final detailed design addressing building systems. The final submission will involve an integrated approach to accommodating spatial planning and internal circulation, structural and constructional systems, lighting environmental systems, codes, regulations and finishes. To achieve this and in addition to the briefing and design activities, the course incorporates lectures, presentations, seminars, critique and site visits. ***Pre-requisite: ARC-461, 342, 344 & 272***

ARC-521 Research & Design Explorations 3-0-3

ARC-521 represents the final culmination of research experimentation and briefing thinking necessary for the comprehensive graduation project. It aims to elaborate and formulate a theoretical stand on which the conceptual development of the Senior Project will be based. Its objectives are: To enhance the research and investigation skills, to direct the students towards a comprehensive and holistic study of the design parameters, to raise their understanding of the role of the research in the professional activity and the ways, the research outcome works as the driving force of their Senior Project design process. In particular, the Course is developed on five complementary axes. The first is to expand students' awareness about the broader context and the associated theoretical positions relating to a particular societal or cultural expectation. The second axis assures through literature review a refined pre-design knowledge related to the historical development of a selected building typology, the contemporary architectural approach to the design of this type of buildings, the relationships between the objectives of organizations, their users, activities and spatial requirements of this selected design theme, the broader connections of similar buildings to their urban context and the main constructional, environmental systems, sustainability and code considerations relating to this type of buildings. The third axis, documents critically and extensively all the necessary data related to the specific location,

context, site of the selected design theme for the Senior Project. The fourth ax elaborates on the preparation of the detailed brief and design objectives for the Senior Project. By developing this systematic pre-design research, the Course creates the theoretical framework on which the students will elaborate the conceptual development of their Senior Project, the fifth intent of the Course. The Course builds on the knowledge gained in ARC-321 Research and Design Applications. It is delivered through lectures and presentations, fieldwork, individual research, and briefing work. ***Pre-requisite: ARC-441 & ARC-321***

ARC-541 Construction Economics 3-0-3

ARC-541 Construction Economics establishes the professional foundations needed by architects on the financial dimensions of creating architecture. It aims at enhancing both of the knowledge about the main concepts and methods involved with cost in the building process and the ability to assess and create financial forecasts. It focuses on three intents. First, creating an awareness about the financial dimensions of the building procurement process; second, enhancing; knowledge of the fundamental concepts and methods associated with financial planning in pre and post tendering stages (detailed stage of construction documents and in-situ operations concerning site preparation, sub-structure and super-structure) in respect of cost limits and cost indices; and finally, developing the skills of estimating cost in briefing, schematic design, construction documents and on-site operations. The course builds on knowledge of structure, Working Drawings and the building construction and environmental systems taken earlier. It represents a comprehensive introduction to the impact of cost into design decisions of the final senior project. It connects with the Integrated Design Studio by providing the background framework on the impact of cost in the development and in the elaboration of design alternatives. It progresses from an initial introduction of Construction Economics focusing on Financial planning and forecasting and the stages of the building development process. The Cost planning will be discussed in detail in relation to Pre-design, concept Design, Detailed Proposal, Tender Documentation and On-site operations. The Course is structured to allow a focus on practical applications paralleling the lecture sequence. ***Pre-requisite: ARC-451***

ARC-561 Design Studio – Institutional 3-6-6

This advanced Design Studio explores the complex, specialized, and large scale design problems. It focuses on the detailed examination of institutional building types (Educational, Health, and Corporate, Administration, Culture...). The course connects the development of design skills to the specialized knowledge of building types. Design projects are viewed as vehicles to address, analyze, and question broader issues relating to particular types of buildings. The aim is to enhance the capacity to address such complex design problems and appropriately prepare students for their Senior Project. To achieve this aim, theoretical investigations and design experimentations will explore 1 The formal aspects of the particular type of building in the light contemporary and historic architectural approaches and theoretical considerations. 2. The human activities to be hosted by the designed building, examined as to their social, functional, and symbolic particularities. 3. The Design objectives and Design strategies are emerging from the Conceptual understanding of the building. 4. The construction and structural particularities of the building and their impact on all stages of the design process. 5. The design project's sustainability and environmental considerations and their impact on all stages of the design process. 6. The codes and Universal Design standards and their impact on design decisions. The emphasis will be placed upon the comprehensive elaboration of all the design theme parameters to simulate the environment in which design projects are developed in professional practice. The course will engage a wide variety of learning modes, including self-study and group-work. ***Pre-requisite: ARC-462 & 342***

ARC-562**Senior Project – Design (Studio)****3-6-6**

ARC-562 represents the final culmination of the comprehensive, integrated design thinking as the transition between architectural education and a professional career. It aims to enhance and advance comprehensive abilities and demonstrate their achievement on an individually selected unique design problem. It focuses on five main intents. First, refining awareness about the general roles of design on making a change in peoples' lives; Second, refining the critical ability to raise questions and abstract ideas. Three, advancing the ability of refining user requirements and reinterpreting them within a thematic design orientation. This will ensure a refined understanding of the comprehensive, integrated design process, the integration of conceptual and technical dimensions of specialized design problems, the integration between buildings and their urban context, and the constructional, environmental, and specialized building systems, sustainability, and code considerations. Five, advancing the ability of creatively formulating comprehensive and unique solutions, synthesizing responses to specific human needs, and elaborating in detail the combinations of building components. In culminating design thinking throughout the curriculum, the course builds on the theoretical investigations of related topics and the analysis (precedents, function, site, sustainability, code, and symbolism) and explorations made in ARC-521. Additionally, it utilizes the ARC-561 - institutional design to prepare students for their senior project. It requests the completion of the design brief and comprehensive documentation of the design intent, the detailed explorations of Building Codes in ARC-441, and the integration of building systems in ARC-362. It is also supported by ARC-451, exploring the management of the design process and its professional delivery. It progresses in submissions covering concept design, preliminary design, Schematic Design, Design Development, Technical Documentation, and final design, demonstrating the link between the particular design intent and its detailed elaboration. In addition to individualistic design activity, the course is delivered through seminars, critique, and presentation with submissions to juries. ***Pre-requisite: ARC-521, ARC-432, ARC-541, ARC-344 & DES-351.***

DES-322**Architecture of The Islamic World****3-0-3**

DES-322 addresses the richness and diversity of spiritual and cultural norms and their manifestations in the context of Islamic Architecture. It aims at enhancing knowledge on the formulation of Islamic Architecture, its main characteristics and typologies and their links to the wider influences that shaped and sustained them. It focuses on the early beginnings, the general characteristics in different periods and geographies and their specific connections to the natural and cultural climate. Attention is given to the detailed particularity of the architectural typologies and the main planning and urban principles that were associated with them. Focus is also placed on the analysis of specific phenomena in selected periods and geographies. It will build on knowledge and critical thinking gained earlier in history and theory courses. In constituting a particular context for the examination of the connections between architecture and spiritual and cultural norms, it contributes to a deeper perspective of design thinking commonly associated with advanced studios dealing with specialized problems. Four components are addressed and these are: the definition and the beginnings and the earlier contexts of Umayyad, Abbasid, Egypt and North Africa; the global expansion; building typologies, planning and urbanism and finally selected investigations. To achieve this, lectures, individual research, assignments and presentations will be utilized. ***Pre-requisite: DES-222***

DES-324 On Site Investigation 3-0-3

On Site Investigation represents the opportunity for students to expand and tackle additional architectural and interior design topics that can vary over time. It aims at enhancing knowledge on selected topics relating to building typologies and at enhancing the skills of analyzing them. In particular, it focuses on expanding knowledge about the selected topics, the characteristics of architecture and interior design typologies, on the relevant documentation and analysis methods. The course requires a topic to be selected and an identification of buildings to be documented and analyzed. It progresses in submissions on research, documentation, analysis and evaluation and finalized with conclusions. To achieve this, the course incorporates lectures, presentations, site visits and seminars. ***Pre-requisite: DES-222***

DES-331 Landscape Architecture 3-0-3

DES-331 represents a selective expansion of design thinking into the field of landscape architecture as expected professionally by architects and interior designers. this course aims at building a general understanding of the basic nature, structure and vocabulary of the post conceptual design stages within landscape architecture, and the skills of analyzing and formulating design proposals for selected problems. it focuses on enhancing detailed knowledge of the crucial technical aspects of landscape architecture, covering: grading and drainage, site preparation, budget cost estimates and construction documentation and on developing the ability to analyze, evaluate and propose conceptual and detailed elaborations of landscape solutions. ARC-362 follows ARC-272 wherein Landscape theory, history and initial design strategies were emphasized. The knowledge and application skills learned in this course will assist with transition into a multidisciplinary professional working environment as introduced through the advanced design studios and internship. progression is made through emulation of the design process from the basic principles and history to detail design through to project management stages. To achieve this, the course consists of a series of lectures and short research projects with different themes/topics for the class to examine, discuss, develop and present as a research assignment. ***Pre-requisite: ARC-232 or IND-232***

DES-372 Graphic Design & Portfolio for Architects & Interior Designers 3-0-3

This course introduces the student to the field of graphic design as it pertains to the profession of Architecture & Interior Design. The focus is on providing the student with the skills to help them with preparing their own portfolios, as well as Design presentations, reports, proposals, brochures, and designing signage in the built environment. The course will focus on integrating graphic design with Architecture and Interior Design. The Course is designed to introduce the students to specific 2D Graphic design software to enable them to compile and produce a range of graphic design projects that culminate in a personal portfolio. It builds upon knowledge gained in introductory graphics classes DES-171 and DES-172 and builds upon software knowledge gained in DES-271. It is specifically tailored to prepare students for advanced graphic presentation skills required for specialised design studios ARC-/IND-343. The course will progress from the general knowledge of the elements of Graphic Design to the specific concepts and the strategies to achieve them in the context the Architectural and Interior Design Professions. The course will focus on how to formulate, prepare and produce a Portfolio of work and a design CV, with the specific goal of enabling the student to market themselves to the profession. ***Pre-requisite: DES-271***

DES-373**Visualization****2-2-3**

This course provides a comprehensive overview of concepts and principles that are common in contemporary computer graphics and advanced architectural visualizations. Students will learn how to develop the conceptual background for a sophisticated and target-oriented architectural visualization. It aims to convey an understanding of visualization principles and develop the ability to produce advanced digital architectural visualizations. Conveying an understanding of contemporary digital visualization this course focuses on developing the ability to enhance and visualize architectural projects toward a professional digital visualization workflow; conveying advanced techniques and approaches to particular challenges; and introducing digital visualization tools relevant to architecture and interior design. DES-373 equips students with a set of skills that will allow them to visualize solutions in their advanced design studios, and supports them in other courses. It also serves students in the preparation and enhancement of their portfolio of works and their application for internship. The course is structured into two components. The first focuses on addressing visualization techniques to render and enhance architectural drawings. The second component explores 3D rendering and enhancement approaches introducing advanced visualization tools, techniques and strategies. This course is delivered in a series of lectures, critiques, discussions, hands-on exercises, and projects. ***Pre-requisite: DES-271***

DES-442**Special Topics: Materials & Methods****2-2-3**

DES-442 represents a selective enhancement to the technical knowledge on building systems, construction, materials and structures already initiated in the curriculum. It aims at enhancing a developed knowledge of construction methods and materials focusing on the detailed elaboration of the combinations of components within them and the skills of assessing their appropriateness to specific uses. In particular, three intents are sought. First, enhancing awareness about the importance of advanced building methods in relation to design; second, enhancing understanding of their relevance to sustainability, to detailing and; third, enhancing the skills of assessing their uses. This elective course increases the know-how to address the advanced construction methods in the following specialized design studios. It builds on ARC-242 or IND-242, ARC-344, ARC-342. It progresses towards a general introduction of the specialized systems and materials into an exploration of their relevancy to varied settings, uses and contexts. The course is delivered through structured lectures, site visits and assignments focusing on researching new advanced materials and selected construction methods. ***Pre-requisite: ARC-342 or IND-342***

DES-452**Professional Practice Seminar****3-0-3**

This course presents an opportunity for a senior level exploration of the specific relevant themes developing in the professional practice of architecture and interior design. Students will be expected, through varying exercises and research, to undertake an in depth study into a specific particular area of practice and in doing so will gain an invaluable insight into the bridge to becoming a member of the professional community. The emphasis on this course is the intersection between education and professional experience and as such it would always be delivered in close collaboration with members of the local profession. It is offered as a Major elective and should be regarded as an opportunity for exploration into current themes of the professional practice of architecture. ***Pre-requisite: ARC-362 or IND-362***

DES-463**Complex Design Studio****2-2-3**

This course presents an opportunity for an advanced design exploration into a specific building typology or a specific theoretical approach to architectural design. It aims at enhancing knowledge on the specific typologies and the emerging issues in design debate and at developing the skills of analyzing and applying them on selected design problems. It focuses on the historical development, the relevant technical systems and on the skills of developing

design briefs and design formulations. It is offered as a major elective course and will enable the student to advance their knowledge and design skills in a specified area of interest. It progresses into theoretical explorations and design applications and is delivered through seminars and project submissions. ***Pre-requisite: ARC-362 or IND-362***