Course Description

Architecture is a field of science and technology and of art. Architecture education combines knowledge-based professional material and artistic understanding and expression skills. An architect must be able to see problems from many different directions, which is the reason for the broad-based nature of the degree in architecture. The current nature of our education develops the student's scientific and artistic thinking relating to the construction of a socially responsible and sustainable future.

Our curriculum is designed to offer a unique learning experience for each of our students through the application of the differentiated learning that informs the structure of our curriculum and its related set of electives. The impetus of the structuration of our curriculum is and will continue to remain this particular burning question: How does ARCHIDES matter in its geographic and disciplinary contexts? Our search for answers led us to devise a creative and flexible curriculum structure, the whole-mark of which is five main study areas, namely: Design, Engineering, History &Theory, Computation Design & Fabrication, & Material Science and Technology. Through a rich set of electives in the different axes, the structure of the curriculum enables the students to graduate with different specialized inclinations. Four summer internships are designed to foster the necessary professional practice integration in the curriculum.

What follows is an elaboration of the course offering in the program structured along these five main study areas. Course offering and course description are preceded within each study area by a synopsis identifying the main objectives and expected learning outcomes related to this specific track. Required courses are delineated first. These are followed by elective course offering within this area.

DESIGN

Design is addressed as a tool of research and investigation. Architecture faculty and students explore a range of design investigations, expand knowledge, and confront the challenges of the contemporary built environment. The design area of study functions as the central focus of instruction where all knowledge and skills acquired in other courses converge. Students will learn to probe and carry an in-depth research and reformulation of the problems and issues through the design process. Spatial relationship with the context, sustenance, consideration of the materiality, techniques of fabrication and construction, and representation of ideas through different media always form an integral part of any studio. In opposition to the conventional practice, the format of the studio is lecture intensive and driven by innovation in the response to real questions addressing social and environmental challenges. The creative, collaborative atmosphere of the faculty is supplemented by its advanced information infrastructure, media-enriched presentation spaces, vast library resources, and open access to fabrication technologies, enabling architecture students to develop, discuss, exchange, and materialize ideas through a comprehensive range of platforms and media.

Required Courses

ARCH 211 Design Methods (3 cr.)

Required for first year, fall term

This course aims for students to acquire adisciplinary design skills by developing methodologies for design research, and investigations on a various set of tangible problems and learning the necessary tools and methods in design thinking to develop solutions to these problems. In the process, students shall develop rigorous critical inquiry- challenging untested assumptions- teamwork, model building and drawing, and most importantly, a systematic approach to both incremental and radical innovations. The method to be followed is the creative thinking process that can be defined along the following steps: observe, define, ideate, prototype, test, fail, and succeed.

ARCH 212 - Basic Design in Architecture (3 cr.)

Required for first year, spring term

Prerequisites (Arch 211)

Materials and Structures as a basis of design: Introducing structures and material learning to the first-year architectural design studio situates these parameters as fundamental to both the design process and architectural expression. The design course is taught concurrently with Structural Mechanics and Building Construction I. Through lectures, analyses of precedents, and material case studies, students experiment with the construction of a one-to-one installations using a prescribed set of materials and construction methods and exploring their formal, spatial and aesthetic possibilities. During this course, students are expected to develop a visual and tacit structural intelligence, as well as a greater interest in structural systems as a design concern. Similar to a design-build teaching model, our approach relies upon active experimentation with structural models and installations, and reveals the dialectic relationship of material, structure, and architectural space and form.

ARCH 311 Architectural Design I (5 cr.)

Required for second year, fall term

Prerequisites (ARCH 212)

This design studio is the first of a chain of studios that foster research and innovation in architecture design. It is focused on the development of analytical and technical skills for perceiving, understanding, and manipulating spatial definitions and relationships, in light of the investigation results of the students' immediate context to unravel direct, unfulfilled, and latent stakeholders needs. Rather than enforcing a generic formal premise, students shall learn to progressively develop innovative solutions based on responding to specific user needs, what the site and the natural environment have to offer, and exploiting the properties of the material(s) they use.

Students shall investigate, first, different activities in an urban living towards the development of innovative solutions and then the subject of these investigations shall change to encompass different types of a dwelling.

ARCH 312 Architectural Design II (5 cr.)

Required for second year, spring term

Prerequisites (ARCH 311)

This design studio embodies the concept of Techne – as knowledge related to making – to form a salient axis in fostering research and innovation in design. Working further on the development of

analytical and technical skills for perceiving, understanding, and manipulating spatial definitions and relationships, students shall explore within the triad of user, environment, and material the latter's three dimensions of structure, mechanical characteristics and behavior, and processes of construction. Design exercises are oriented towards pushing these dimensions to their limits leading towards their better understanding in the formation of architecture.

ARCH 400 Community Engagement Project (3 cr.)

Required for third year, summer term

Prerequisites (ARCH 312)

This course is focused on developing student skills to meet community needs under the umbrella of NGOs or NPOs host organizations with the aim to heighten students' cultural awareness and their sense of professional purpose towards social justice and community service. The course is organized over an 8 week period. During this period, students will work with the host organization to engage with and understand everyday issues that are being faced by the organization and research and help provide solutions and appropriate responses to such needs and issues in the workplace or in the field. By the end of the course, students will need to submit a report or professional portfolio, as well as a learning journal, which enables them to reflect on their experience and their use of knowledge and skills gained through the project. The course is pass or fail and is based on the quality of submitted reports and a supporting letter by the NGO team leader.

ARCH 401 Architectural Design III (6 cr.)

Required for third year, fall term

Prerequisites (ARCH 312)

This design studio aims at fostering and developing an in depth understanding of the integrated design approach that focuses on meeting the needs and objectives of users. During the semester, students are expected to deal with the integration of intrinsic forces of the project- be it high-performance offering owners and users increased worker satisfaction and productivity, improved health, greater flexibility, and/or enhanced energy and environmental performance- and the extrinsic factors related to issues of site with its geographic, cultural, and legal context.

ARCH 402 Architectural Design IV (6 cr.)

Required for third year, spring term

Prerequisites (ARCH 401)

A design studio focused on investigating the relationship between architecture and the inner possibilities of nature whereby architecture design remains an open dialogue between the initial natural conditions and the space's emerging configuration. Discovering dimensions of sustainability derived from biomimicry is an essential design philosophy and approach that students will investigate as they strive to meet global challenges and consequently the building complex needs. Parametric design and simulation modeling form the vehicle towards exploring design solutions.

ARCH 501 Architectural Design V (6 cr.)

Required for fourth year, fall term

Prerequisites (ARCH 402)

This studio emphasizes the complete building as a final product, engaging issues of structure, circulation, program, organization, building systems, materiality and tectonics, and will explore the emerging technologies in environmental systems as a means to create sustainable buildings that are responsive to their environment. In addition, this studio provides a foundation for understanding

and using of parametric design in architecture through learning the language of “Parametric Design,” its history and development, and computational techniques.

ARCH 502 Architectural Design VI (6 cr.)

Required for fourth year, spring term
Prerequisites (ARCH 501)
This Studio focuses on the architectural design set within a large scale urban context, where theory, methodology and evolution of the urban form are a direct response to social, cultural, economic and technological forces. Exploration of the urban fabric from its historical, morphological and typological dimensions firms the catalyst behind the type and the program of the architectural intervention.

ARCH 601 Final Year Project I (6 cr.)

Required for fifth year, fall term
Prerequisites (ARCH 502)
This course is the first component of the students’ year- long design study of an architecture issue of their choice. The design study must be of a professional caliber that entitles students to graduate as professional architects ready to join the Lebanese Order of Engineers and Architects and practice in the real world. During this course, the students must develop a design Statement and Proposal and must submit a Book which synthesizes their semester’s progress. The design study continues during the Spring term and is considered to be fulfilled by the completion of ARCH 602.

ARCH 602 Final Year Project II (6 cr.)

Required for fifth year, spring term
Prerequisites (ARCH 601)
This course is the second component of the students’ year- long design study of an architecture issue of their choice. The design study must be of a professional caliber that entitles students to graduate as professional architects ready to join the Lebanese Order of Engineers and Architects and practice in the real world. During this course, the students are expected to integrate and synthesize acquired knowledge and skills, and to develop both the theoretical/critical and practical components of the research and design project proposed in ARCH 601.

COMPUTATION DESIGN AND FABRICATION

One of our program’s missions is to explore and elaborate on the concept of “Responsive Architecture” through an exploration of computation, media technology, robotics and digital fabrication in order to create interactive and ubiquitous architectures through a synthesis of the digital and physical worlds. This study area offers the theoretical and practical hard skills necessary to fulfill this program’s mission and empowers our graduating students to meet the global job market demand in contemporary architectural design offices.

Students will be endowed with a new understanding of digital technologies and their application within the built environment. All of the required and elective courses offered within this area are in a form of studio and/or lab courses. The sequence progresses from hand-driven visualization to 2-D

& 3-D digital visualization methods, to finally computation analysis and design. The latter aspect dovetails with digital fabrication in the material science and fabrication study area.

In addition to the required courses, all students of Architecture are required to take a minimum of one elective course from this study area.

Required Courses

ARCH 223 Freehand Drawing (3 cr.)

Required for first year, fall term

This course is an introduction to the basic language of visualization and conceptual reading/representation of architecture and the built environment offering a shared inventory of mental and manual skills to enable students to further their research and applications in their future design work. The course stresses on experimentation through the exploration of the relationship between the idea or the object of representation and its graphic depiction through a particular set of media, materials, and techniques. It shall be dedicated to introducing the tools of communication, such as perspective and the behavior of light and shadow, and exposing students to the different media inviting them to learn their essential characteristics and potentials. Media that shall be focused on are pencil, charcoal, acrylic, with concentration on freehand sketching as well as on collage. Students are also expected to acquire and appreciate the values of neatness and graphic composition.

ARCH 233 Technical Drawing (3 cr.)

Required for first year, fall term

During this course, students shall learn and apply the principles of Descriptive Geometry to illustrate and communicate their ideas and/or objects of representation within a measurable paradigm. Orthographic projections, axonometric drawings, and construction of perspectives shall be mastered. Resolving intersections of complex geometric solids and constructing the resulting physical model form part of this spectrum of knowledge skills to deepen students understanding in the field of descriptive geometry and the three dimensional visualization of complex geometries. Application of these principles shall be crowned through a study and technical representation of world renowned Architectural projects. Accuracy, neatness, and a balanced composition of the outcome shall form the underlying backbone of the skill acquisition during this course.

ARCH 224 Architectural Communication (4 cr.)

Required for first year, spring term

Prerequisites (ARCH 223 & ARCH 233)

Building on the skills acquired in sketching and technical drawing, this course shall develop the fundamentals of architectural communication depicted through the abstract and system thinking, spatial training, abstract visualization, and visual training. Accordingly, the course is expected to explore the two-way stream between conceptual/abstract and systemic thinking on one hand and abstract representation on the other. More specifically and upon the successful completion of this course, students will be able to exploit the different characteristics of the medium in use, analyze architecture design and represent graphically its essential characteristics, masterfully apply the principles of graphic composition, and understand and apply the principles governing the

relationship between conceptual thinking and abstract representation. Building curiosity (hunger for knowledge) and perusal of questions through applied research form the backbone of the course.

ARCH 313 Computer Aided Design I (3 cr.)

Required for second year, fall term
Prerequisites (ARCH 233)
This course is an introduction to and overview of concepts of Computer Aided Design in lectures and exercise form. It enables the students to execute various 2-D digital architectural drawings. The course will comprise basic computer aided drafting skills using the latest release of CAD software including: file management, Cartesian coordinates system, drawing setup, drawing aids, layer usage, drawing 2D geometric shapes, editing objects, array, text applications, dimensions and dimension variables, paper space and viewports, templates, external references, and printing/plotting. In addition to the rendering capacities of CAD software, students will be exposed to additional vector based and raster based rendering software.

ARCH 304 Computer Aided Design II (3 cr.)

Required for second year, spring term
Prerequisites (ARCH 313)
This Course is the second part of the CAD Sequence. It introduces students to 3D Mesh Modeling in Google Sketchup and Basic Surface Modeling in AUTOCAD 3D. The course is addressed as a design for computation course: a methodology in the experimental design thinking process rather than a computer aided Design skill, where students investigate the boundaries of computation technologies and their impact on architecture in the contemporary design field. At the end, students are expected to develop the necessary tools to explore design concepts and to accurately model their future design projects at all levels of detail and fabricate physical study models at ARCHIDES Digital Modeling Lab.

ARCH 403 Computer Modeling (3 cr.)

Required for third year, fall term
Prerequisites (ARCH 304)
This course is aimed at providing the students with advanced knowledge, aptitude and skills required to use a range of fundamental computational modeling skills in Architecture and Design. The course shall focus on applications in the family of "NURBS" or more simply "surface and solid" modelers that is called Rhinoceros or just Rhino for short. It will be covering all main 3D and experimental advanced modeling approaches in Rhinoceros as well as introducing parametric design modeling and Knod modeling on Grasshopper. At the end of the course, students are expected to operate, analyze, model and manipulate complex shapes in design.

ARCH 404 BIM- Revit (3 cr.)

Required for third year, spring term
One of the most notable shifts in professional practice is the wide acceptance and integration of Building Information Modeling (BIM). This class introduces a new way of thinking about deliverable documents and the collaborative framework that a parametrically virtual model is working to provide. BIM is becoming an industry standard because of its intuitive interface and for its ability to facilitate opportunities to connect between the Architect, Consultants, and Contractor. BIM

simultaneously delivers real time working drawings and high quality spatial renderings to streamline the concepts-to-working drawings process.
This course will utilize Autodesk Revit 2017 and provide the basic skills to create and maintain a parametric building model to use for renderings, working drawings, massing studies, and coordination of disciplines.

Elective Courses

ARCH 513 Parametric Design (3 cr.)

Prerequisites (ARCH 304)
This design and technology seminar provides a foundation for understanding and using of parametric design in architecture as well for other design practices and fields. Through learning the language of "Parametric Design," its history and development, and computational techniques students can expect to develop fundamental knowledge of the importance for designing with parametric tools. Students shall develop an expertise with parametric techniques to suit their own design intentions and practices. The associative parametric designs and strategies are achieved through learning the foundational all through the advanced tools, techniques, and methods. By establishing the concepts and skills required to think, design, and prototype projects using associative parametric design technologies students will gain facility, precision and control for taking their designs from concept to implementation.

ARCH 613 LISP & Other Programming Environments (3 cr.)

Prerequisites (ARCH 304)
The intent of this course is not to train students in a particular CAD program or design view but to prepare them for the difficult task of designing and changing CAD programs for their personal use or to needs specified by other architects. In this respect, using programming tools, one can "transcend the factory set limitations of current 3D software. The emphasis of this course will be on principles. All exercises have the purpose of illustrating one particular aspect of design computing. Accordingly, the course shall mainly cover LISP as a computer programming language. Students shall learn the symbols and various operations that define the vocabulary of the programming language and the way its syntax specifies the valid patterns. In addition, students shall be exposed to VisualScheme, an interactive programming environment that accompanies the architect from the learning phases to the advanced uses and that can be explored in pedagogic, research, and industry settings.

HISTORY AND THEORY

This study area explores the relationship between design, history, and theory through a broad range of courses in which the analysis of buildings, cities, landscapes, and texts supports the articulation and criticism of fundamental concepts, methods, and issues. Historical and contemporary projects and writings are studied in context and as part of the theoretical discourse of architecture. Accordingly, this study area investigates subjects that deal with the history of architecture and art, as well as the theoretical and political presuppositions informing that history. Offerings range in content and method. Some are motivated by questions derived from the problems of contemporary practice. Others investigate a body of historical material in ways that develop analytical skills applicable to a wide range of topics raising questions concerned with understanding the built

environment – how it is created, what it means to the people who make it, what it tells us about history, how it responds to ideas, desires, and needs of people living at a particular time, and how at the end of the day, it informs our design as a scholarly work.

In this respect, the set of courses (both required and optional) forming the body of this study area locates architecture within social, ideological, creative, political, material and technological, theoretical and urban processes. In doing so, it explores the boundaries of what might be regarded as legitimate architectural objects of study, and the effects of different modes of historical interpretations upon the discipline and beyond.

In this perspective, we explore the material aspects of architecture (structure, design, technology, etc.), the intellectual, philosophical, and social conditions that bring it into being, as well as the significant issues in current disciplinary thinking. Our courses cover a vast number of topics, from prehistoric grave mounds to contemporary issues and themes. The second year of study includes a broad survey of a world history of architecture, art, and the city (Arch 307 & 308). The rich history of Tripoli takes a special attention in this track. This study area is approached from an interdisciplinary perspective.

The student will not only develop an understanding of how the built environment has been shaped in the past and is being shaped now, but also the forces that will shape it in the future. Through the rigorous application of research and analysis, students will study spatial design in the broadest context examining the environmental, social, cultural, economic, political, technical and aesthetic influences on the design process as well as on the "finished product" itself.

In addition to the required courses, all students of Architecture are required to take a minimum of one elective course from this study area.

The main general outcomes of this track are:

- Understand how designs are the result of the cultural, social and economic context in which they are conceived and produced
- Formulate solid research questions
- Apply scientific research methods that will help any historical and/or theoretical investigation
- Write sound papers

Apply design as a research method in the investigation of historical buildings/artifacts.

Develop the signification for judging the merits of buildings or building projects. Such reasoned judgments are an essential part of the architectural creative process.

Required Courses

ARCH 317 World History of Architecture I (4 cr.)

Required for second year, fall term
Prerequisites (ENGH 102)
In World History of Architecture I, the new pedagogy of teaching History of Architecture is manifested by two main intertwined threads: one, deviation from the conventional chronological historical survey through following a THEMATIC categorization of the concept of DWELLING with its

main trilogy of HOUSES OF MAN, GOD, and THE DEAD as the main thematic divisions of the course; and two, inclusion of design as a tool of investigation and as an instigator for unraveling the artifacts/buildings' hidden layers. The course investigates new means for studying ARCHITECTURE and DESIGN through the history of architecture. While revisiting historical precedents within this trilogy, we shall strive to decipher, experiment, and discover the "why" located in the past, looked at through both a contemporary eye and the language of architecture communication be it 2D drawings (plans, sections, diagrams) and/or 3D conceptual models.
At the end of the course, students will be familiar with a wide spectrum of architectural artifacts, exposed to theories that informed their production, and knowledgeable of the logic and techniques of their construction. In addition, students are expected to develop an observant and critical eye that is triggered by an inquisitive attitude and framed by a set of questions and principles, and a rigor in research as they attempt to decipher the hidden intrinsic design intent of the built form. Based on comparative analyses, students will also be able to formulate their own synthesis related to the way basic human needs are manifested architecturally in response to various religious, geographical and socio - cultural factors all through while developing and enhancing their basic communication skills both verbal & visual.

ARCH 318 World History of Architecture II (4 cr.)

Required for second year, spring term
Prerequisites (ARCH 317)
Following the same approach and methodology of its pre requisite, this course focuses on three major topics / themes: The Tectonics of Architecture, Functionalism & Aesthetics, and the stirrings of urban consciousness from the earlier vernacular societies to the establishment of the modern urban city. Through these modules, are introduced to seminal writings and texts that had a major role in shaping the architectural thought and the structuring of cities through time. Major emphasis will be put on research and communication skills, of which writing papers is central.
At the end of the course, students are expected to acquire sharp analytical and inquisitive skills, by which they are able to indulge in research leading to the formulation of a design synthesis that reflects a convincing understanding of the effects of socio- cultural and technological / scientific progress on the complexity of the Architectural discourse in space and time. Students should be able to read seminal essays on Architecture, and be able to comment verbally and author well-structured papers using proper architectural lexicons, referring to precedents and formulating a convincing synthesis. On equal grounds, students will enhance their already acquired drawing and model-making skills (both manual and digital).

ARCH 328 Principles of Sustainable Architectural Design (3 cr.)

Required for second year, summer term
This course deals with the thermal and environmental processes which affect buildings, and how the designer responds to or manipulates the thermal environment. It is necessary for the architect to understand these processes, the human response to them, and the necessary materials and tools. Four computer programs (developed at UCLA) are made accessible to aid student learning in each module of the course, and also to support architectural design decision making once they get out into practice: Climate Consultant, OPAQUE, SOLAR-2, & HEED (Home Energy Efficient Design). All these programs can be downloaded (at no cost) from www.energy-design-tools.aud.ucla.edu.

The Course is designed in ten modules. At the end of the sequence each student will have created all the pieces they need for the design of a small single-zone building, usually some type of residential project. The form of the building will have evolved week by week from the issues covered in each module. At the end of the sequence each student will have developed their own set of design criteria against which their final building design can be evaluated. Students can work in any climate. The ten modules are: Climate Analysis, Design Guidelines, Sun Motion, Design of Sun Controls, Natural Ventilation, Heat Flow through Opaque Elements, Overall Performance: Heat Gain and Loss, Passive Heating and Cooling, Final Energy Conserving Design, & Final Design Evaluation.
Each problem set is structured into a set of learning objectives and the student is shown how to address each, often with the aid of one of the computerized Energy Design Tools.

ARCH 407 Contemporary Architectural Theory (3 cr.)

Required for third year, fall term
Prerequisites (ARCH 318)
Theory can be used as justification, as propaganda, as a guide for practice, as a set of principles, as a vehicle of thought, as a platform for debate, and as an architectural project in itself. This course considers the changing role of theory with respect to architectural, urban, and landscape practice over the course of the twentieth and twenty-first centuries, and aims to furnish students with a set of questions, techniques, and tools for criticism and self-critique. Focusing on key figures, movements, and texts, this course provides an overview of the principal theories that have informed, animated, or destabilized recent architectural, urban, and landscape discourse.

ARCH 507 Urban and City Planning (3 cr.)

Required for fourth year, fall term
Prerequisites (ARCH 407)
Despite their infinite variety, all cities- from the first settlements to the modern megalopolis- serve and are essentially a reflection of a number of purposes to their citizens, namely: social, political, legislative, cultural, and economic. The purpose of this course is to provide students with a basic theoretical framework to enable them to read, investigate, and understand the complexities of the city with its components and realize how-through a set of case of studies- Urban and City Planning as a practice (both through physical interventions and policies) is affecting positively or negatively the life of its citizens.
Starting from the genesis of cities passing through the main normative and descriptive theories of city form and its analysis through a certain number of case studies, at the end of the course the students will have the capacity to: read and understand the urban form through different theoretical lenses, know of different forms of transportation systems and their positive and negative impact on the urban life and city form, appreciate the impact of the citizens involvement in the urban choices.

Elective Courses

ARCH 338 Forms in Architecture (3 cr.)

Prerequisites (ARCH 318)
This course treats architecture as an end in itself- to serve neither as a history nor as a theory but as a pragmatic “theory of the project,”- a comprehensive guide and reflection upon a generic

repertoire of ideas in architecture found both in practice and academia. Students are expected to gain an understanding of a range of phenomenon that have been encountered in our building/design culture over a wide span of time. The study of form in Architecture shall be grounded in the philosophical thought of Rudolph Arnheim, Ernst Cassirer, Husserl, Heidegger, Gaston Bachelard, Michel Serres and Merleau Ponty. Space, spatial concepts and their interpretation (depth, density, interpenetration, assembly and composition, along with Loos' Raumplan and Le Corbusier's plan libre), tectonic expressive character of building materials (stone, concrete, brick, wood, glass, and steel), light and shadow, and the conditions of "re-vetment" shall form the material of this theory of the project under investigation. Students are expected to submit a term paper undertaking a project for analysis and presentation at the end of the semester.

ARCH 508 Principles of sustainable Urban Development (3 cr.)

Prerequisites: senior standing

The course main objective is to impart upon students a profound understanding of urban development from a perspective of sustainability, simultaneously developing their knowledge set of principles and judgment in the field of sustainable urban design, transportation, infrastructure, and smart systems. Students are expected to develop a detailed understanding of how the opportunities and constraints offered by different contexts result in the adaptation and redefinition of sustainability as a continually developing and contested concept. Through case studies, students shall learn to critically assess the possibilities and challenges of sustainability that face the world's cities today as they relate to environmental/ecological, economic, technological, institutional, legal, and social behavioral parameters. Questions of urbanism vs sprawl, urban policies vs master planning, linear vs cyclical systems, ubiquitous vs conventional computation, dedicated vs on-demand service, collective vs individual service, amongst other contemporary issues that couple sustainable urban development shall be addressed in the context of analysis of the case studies.

ARCH 517 Landscape Architecture (3 cr.)

Prerequisites: senior standing

This course explores the basic knowledge about landscape design with its general philosophical and specific functional concepts. It tackles the historical development of landscape architecture, the geometric and naturalistic forms of design, and the principles of organization that lead to harmony, unity, and interest etc. The students utilize different techniques in addition to computer programs to execute selected projects in the private as well as in the public domains.

ARCH 518 Cities, Planning and Urban Life (3 cr.)

Prerequisites (ARCH 507)

This course is a study of the actual planning processes, issues and problems, urban and regional zoning, and demographical projections, with comparative studies of regional, or international, and planning building on case studies. Accordingly, it provides a broad introduction to social science theories and analysis methods and uses case studies along the semester to examine how people, communities, and governments plan a city. Comparative analysis helps bring a broader assessment to the issues in question. This course focuses on describing, explaining, and ultimately understanding cities and regions using cities. The city is unique, yet exemplifies many of the qualities and conflicts that make urban areas interesting. To analyze the structure and development of the city and its region the course draws upon theories and methods of several social science disciplines including

economics, geography, political science, anthropology, and sociology. Specific topics presented and discussed in this course are drawn from urban history; urban sociology; economics of urban and regional growth; urban and regional structure; urban form and function; urban government and politics; and the planning profession.
The overall objective of the course is to stimulate thinking about the complexity, role, values, and problems of urban and regional systems, and to raise awareness about the importance of planning and designing for quality urban environments.

ARCH 528 Architecture Heritage of Tripoli (3 cr.)

Prerequisites (ARCH 317)
Focusing on the city of Tripoli, the course shall approach the city in parallel to Arab cities as well as to cities sited on the Mediterranean. It shall cover the following themes:

1- The city and the urban fabric through history: Tripoli through historical eras (architecture, planning, social and economic transformations).
2- Contemporary realities: urban growth and its impact on the heritage and historical fabric.
3- Architectural landmarks in the city
4- Management of heritage preservation and the difficulties faced
5- Visions and prospects of exploring its future: Development of urban policy and the role of the city between globalization and local assets

ARCH 537 Architecture of the Islamic World (3 cr.)

Prerequisites (ARCH 317)
The course approach is similar to courses ARCH 306 & ARCH 307 with a main focus on the architectural production over the periods from the Prophet Mohamad’s hijra to Madinah reaching the Ottoman period.

ARCH 617 Theories of Urban Design (3 cr.)

Prerequisites (ARCH 507)
This course examines the 20th century built environment from individual buildings to large-scale urban designs. Taking the Modern Movement as the century's central architectural and urban design event, the course considers how the theory and practice of modernism both evolved and departed from 19th century movements, created new building techniques and technologies, radically reorganized urban forms and functions, dramatically redefined the role of architect and planner, and was subsequently rejected and resurrected. The forms, functions, and meanings of architecture and urban design are examined within their artistic, social, political, and economic contexts.

ARCH 618 Urban Ecology and Cities of the Islamic World (3 cr.)

Prerequisites (ARCH 507)
This course examines Islamic architecture and urban planning coped with environmental constraints in various areas and different climates and how to turn them into constructive design tools. It examines the environmental strategies behind the design of selected examples ranging in scale from the region, to the city, the house, the garden, and the single architectural element. It explores the social, cultural, symbolic, and psychological dimensions of environmental design as they developed over time to enrich, modify, or even obscure their functional origins.

ENGINEERING

The aim of this track is to equip our graduates with the following capabilities:

- Identify, formulate, and solve problems applying scientific and engineering principles and concepts.
- Use the techniques, skills, and modern engineering tools necessary for engineering practice.
- Demonstrate strong architectural, scientific and technical knowledge, coupled with a solid background in project methodology, building construction techniques and architectural design.
- Understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- Bridge theory and practice and integrate scientific and technological considerations into the design process
- Integrate design and construction process creatively: Study and design a project to meet desired needs within realistic constraints such as economic, environmental, social, ethical, health and safety, manufacturability, and sustainability.
- Lead and collaborate with the team of engineers and project managers involved in the design and construction activities.
- Ready for post-graduate studies.

Required Courses

ARCH 205 Statics and Mechanics of Materials (3 cr.)

Required for first year, fall term
Prerequisites (MATH 110)
This course seeks to develop informed intuition for structures by emphasizing underlying concepts and synergy of form and structure and encourage creative design integration. The course also aims to convey engineering concepts for analyzing of basic structures and for an effective communication with engineers. Students will conduct also various design experiments related to the topics that they have learned before in lectures.

ARCH 225 Structural Mechanics and Analysis (4 cr.)

Required for first year, spring term
Prerequisites (ARCH 205, PHYS 101)
The course is a continuation and intensification of Statics and Mechanics of Materials course (ARCH 205). The course introduces students to the tools used to analyze structures. The overarching goal of the course is to advance the understanding of structural behavior and to enhance the ability to apply structural analysis methods to structural systems. It tackles the fundamentals of structural analysis including types of loads, the internal loadings in structural elements and deflection of structures. Students will conduct also various structural design experiments related to the topics that they have learned before in lectures.

ARCH 315 Concrete & Steel Structures (3 cr.)

Required for second year, fall term
Prerequisites (ARCH 225)

This course addresses the review of concrete and steel structural systems, and the selection of specific applications for structural design projects applicable to a real life situation. This course also tackles the fundamentals of reinforced concrete and steel design methods used in current engineering practice. The comparison between theoretical design and code compliance (Concrete/ACI, Steel/AISC) for detailed design is covered as well.

ARCH 306 Building Structures and Seismic Design (3 cr.)

Required for second year, spring term
Prerequisites (ARCH 315)
This course seeks to develop students' understanding of building structures and selection criteria for appropriate systems; in addition to integration of structures with architectural objectives; conceptual design of structures for gravity and lateral wind and seismic loads.

ARCH 405 Mechanical Design of Buildings (3 cr.)

Required for third year, fall term
This course represents an introduction to the mechanical installations in various building types. On the first hand, it deals with the Heating, Ventilation and Air-Conditioning (HVAC) systems, energy management systems and solar collectors. On the other hand, sanitary engineering issues such as water distribution, sanitary systems and rainwater drainage will be tackled.

ARCH 406 Electrical Design of Buildings (3 cr.)

Required for third year, spring term
This course addresses the fundamentals of electricity, voltage, generation and distribution of power HT and LT. It tackles also the preliminary analysis, estimation and design consideration of building electrical systems. It also highlights on the electrical requirements and distribution in buildings and the related execution problems.

Elective Courses

ARCH 515 Structural Technology I (3 cr.)

Prerequisites (ARCH 306)
This course tackles the basic principles of statics, strength, and stiffness. Students will study the basis behavior of beams and columns. The course seeks to develop a qualitative as well as quantitative understanding of structural analysis and serves as an introduction to Structural Technology II.

ARCH 516 Structural Technology II (3 cr.)

Prerequisites (ARCH 515)
This course tackles the study of gravity and lateral structural systems through case studies in steel, wood and concrete construction, and helps understand how the structures withstand forces. Students will develop the structure to support their own studio work, calculate loads, and design simple elements like beams and columns.

ARCH 525 Advanced Structures (3 cr.)

Prerequisites (ARCH 515)

This course seeks to develop students' understanding of building structures and selection criteria for appropriate systems. Different systems, such as steel structures, wood structures and composite materials will be addressed.

ARCH 615 Acoustics (3 cr.)

Prerequisites Senior standing

This course is a survey of basic acoustical systems, theories, acoustic properties of different materials used in buildings and their consequences on noise reduction, as well as a study of the properties of acoustical spaces, such as theaters or concert halls.

ARCH 616 Environmental Engineering (3 cr.)

Prerequisites Senior standing

This course seeks to teach students the fundamental concepts in environmental engineering dealing with water, air, and land pollution, and other areas such as ecology, global warming, environmental regulations, renewable and nonrenewable energy resources, and sustainability. The course also includes how an engineer should be environmentally responsible. Students will learn about architecture, passive design, environmental physics, environmental systems in buildings and the effective use of energy and materials.

ARCH 625 Lighting Design (3 cr.)

Prerequisites (ARCH 406)

This course addresses the analysis of the basic electric concepts, with emphasis on energy management, electric ratings and capacity, and lighting systems and different lighting equipment, and methods for building electrical systems.

MATERIAL SCIENCE AND TECHNOLOGY

Civilization in general and architecture in particular advance through cycles of perpetual change in material and technologies. If Architecture is integration between art and science, there is nothing more intimately related to science in architecture than the science of material.

It is within such a frame of reference that our program approaches the education of our graduates in this study area: materials are the foundation of Architecture. If innovation in architecture is driven by responding to social and environmental challenges, an in-depth understanding of material and its related technologies as well as the capacity to reform these materials is key to this innovative response.

Accordingly, this study area is expected to prepare our graduating architects and interior designers to pursue material innovation in their post-graduate studies on one hand and/or to meet the expectations of the construction industry both in Lebanon and the region.

In accordance with the above-mentioned directive, the purpose of this study area is to ensure that after completion of this track, the student has:

- deep knowledge of traditional and contemporary intelligent materials that are green and energy efficient through their properties & characteristics, potential defects and way to detect them, processes of fabrication, use and limitations of the technologies behind their production, manipulations as well as processes and detailing for assembly.

- ability to create architectural designs informed by an understanding of the technical requirements and aesthetic potential of the selected material and a sensitivity towards cost
- adequate knowledge of physical problems, technologies and of the function of buildings so as to provide them with internal conditions of comfort and protection against the climate
- ability to argue scientifically about the selection option of materials and methods of assembly and detailing
- understanding of the behavior of the material within its environment
- understanding of the scientific methods of investigation towards material innovation

An understanding of the field of innovation in material science and technologies that are associated with the profession is also part of the general skill outcomes of this study area. This develops the student's working life skills and promotes a career path with options to either work as an employee in the private or public sector or as an entrepreneur.

Required Courses

ARCH 219 Introduction to Materials (3 cr.)

Required for first year, fall term

This course offers an introductory overview of the principle materials used in the construction industry of today. More specifically, the course gives a basic introduction to the properties of the five main classes of materials: metals, ceramics, glass, polymers, composites and natural materials with special focus on steel, concrete, brick, wood and plastic materials. Fundamental characteristics of these materials are explained along their structural, mechanical, and physical properties as well as along their behavior and long-term performance. During this course, students will learn about material and product manufacturing techniques and how they relate to their mechanical and non-mechanical properties. At the end of this course, students will gain a comparative knowledge of material properties and possible applications in architectural design and construction, will be able to describe the relationship between material properties and building form, evaluate the effect of the environment on service life performance, properties and failure modes of these materials, and finally make sensible and well-founded choice of materials to meet prescriptive and performance-based requirements.

ARCH 230 Design in Construction I (3 cr.)

Required for first year, spring term

Prerequisites (ARCH 219)

This course deals with the response of building envelopes to surrounding environmental factors; covering in detail the components of the envelope: floors, walls, doors, windows, and roofs of all types. This course is also an introduction to construction detailing. The aims of the course are for students to carry a basic knowledge of building construction and conventional structural systems, and to make informed decision on material choices and energy transfer mechanisms. At the end of the semester, students should be able to demonstrate a synthesis of their understanding through a design project with relevant analytic details.

ARCH 319 Design in Construction II (3 cr.)

Required for second year, fall term

Prerequisites (ARCH 230)

A combined lecture and studio course consisting of: recent building technologies, materials, finishing work and materials, and the methods, contents, and presentation of professional construction documents including execution drawings, details and schedules. Building components such as floors,

roofs, walls, doors, windows, and stairs will be addressed. The course equips students with an adequate level of knowledge and applications in the processes and procedures for building component and the multiplicity of ways that they impact architectural design. Students will get an exposure to the general construction practices by undertaking site visits. After completing this course, students will be able to: describe the relationship between drawing and construction, identify the different types of construction drawings, and use traditional and by building a synergy with the concurrent CAD I use computer aided drafting techniques to produce basic construction drawings.

ARCH 320 Design for Execution (3 cr.)

Required for second year, spring term

Prerequisites (ARCH 319)

A combined Lecture and Studio course consisting of: implementation of architectural design project in construction and detail plans considering technical requirements. The course covers overview plan, site plan, sections and elevations, wall sections, staircase details, different (doors, windows, finishing) schedules, and other project related details.

Elective Courses

ARCH 409 Building Systems Technology (3 cr.)

Prerequisites (ARCH 319)

This subject introduces students to the properties, behavior and testing of construction materials and the principles of heat, light and sound as they apply to building design. Students explore the important link between ecologically sustainable design and construction material choice during the design process. This includes an examination of the durability and life-cycle of construction materials and the embodied energy and energy efficiency of various design options and construction methods.

ARCH 509 Technological processes and fabrication

Prerequisites (ARCH 304)

This course builds on the convergence of architecture design with science and technology. It investigates the key role computation plays within complex design synthesis. Students are introduced to highly advanced coding, fabrication and robotic skills, aimed at computational and technological fluency. Simultaneously, students are exposed to larger theoretical underpinnings specifically tailored to their inquiries. This course will also introduce students to digital design and fabrication techniques within the context of contemporary art and design. Through a series of technical demonstrations, students will make connections between computer-aided-design / computer-aided-manufacturing (CAD/CAM) software, digital fabrication technologies and the physical world. Students will complete a series of projects exploring 3D modeling, CAD applications, 3D scanning technologies, and experimental approaches to digital model generation. Simultaneously, digital models will be made physical through additive and subtractive fabrication technologies including 3D printing, CNC milling, and laser cutting.

ARCH 510 Material Science and Application in Architecture (3 cr.)

Prerequisites (ARCH 409)

This course looks into architectural innovation within a context where design, composition and modes of production for scales from wearables to buildings have radically changed due to an increasing sophistication and pervasiveness of computationally driven design and fabrication

technologies. During the semester, material systems are examined for the ability to act in a responsive manner, by instrumentalizing their native material composition as well as introducing technologies for sensing and geometric transformation. Students are expected to research in the way materials can be responsive to degrees of morphabality and in how their extra-systemic qualities are transformational when placed in different contexts or experienced in different manners. Collaborative project-based research prioritizes design through examination, ongoing iteration and calibration of experiments, both virtual and real.

ARCH 519 Building Envelope (3 cr.)

Prerequisites (ARCH 409)

This course provides a practical introduction and application of building science fundamentals for the evaluation, design, and construction of durable and energy efficient buildings. The role of climate and the theory of heat flow, vapor flow, air flow, and the application of each principle to the evaluation of building envelope assemblies will be discussed. Best-practice assembly design and detailing fundamentals for above and below grade wall assemblies, roofs, and windows will be covered with examples and case studies. International energy code requirements for the building enclosure will also be introduced.

ARCH 520 Experimentation with Materials (3 cr.)

Prerequisites (ARCH 510)

This course provides a culminating experience for students approaching completion of the materials science and Technology track. Review and study of experiments are undertaken in a variety of areas from the investigations on building materials to corrosion science and elucidate the relationships among structure, processing, properties, and performance. The principles of materials selection in design are reviewed.

ARCH 619 Architectural Conservation (3 cr.)

Prerequisites (ARCH 319)

The course provides students with the required understanding of processes and tools to deal with the conservation of Architectural buildings. The development of materials and building techniques will be presented. The problems of contemporary building methods will also be addressed as case studies.

ARCH 620 Theories in Material Systems (3 cr.)

Prerequisites (ARCH 510)

A material system is an assembly where interactions of matter and energies compute form, driven by complex constraints and feedbacks from manufacturing, environment and human interaction. The course covers constitutive relations for electro-magneto-mechanical materials. Fiber-optic sensor technology. Micro/macro analysis, including classical lamination theory, shear lag theory, concentric cylinder analysis, hexagonal models, and homogenization techniques as they apply to active materials. Active systems design, inch-worm, and bimorph.

PROJECT MANAGEMENT

Elective Courses

ARCH 511 Professional Practice (3 cr.)

This course will introduce the business aspects of the design practice, through the exploration of the financial, legal, and managerial aspects, contract negotiations, marketing design services, and managing of the client and contractor relationships, with an introduction to the economic and management principles of design projects, financing, cost-estimate and budgeting.

ARCH 611 Project Management (3 cr.)

This course develops a foundation of concepts and solutions that supports the planning, scheduling, controlling, resource allocation, and performance measurement activities required for successful completion of a project.

ARCH 621 Design Management in Real Estate Development (3 cr.)

This course provides a basic understanding of the importance of design in real estate development. Design is discussed at different scales of the built environment from industrial products and objects, to interiors, architecture, landscape architecture, and urban design. A special emphasis is placed on the role of the design process, as opposed to design products, in real estate project development, from initial needs assessment through project implementation.

LEGAL

Required Courses

LEGL 411 Building Codes and Laws (3 cr.)

Required for third year, fall term

This course is a study of the local and regional building codes, with an introduction to other codes (USA, Europe, the Arab World) as comparative tools and an introduction to the local laws governing the building industry.

OTHER

Elective Courses

ARCH 312 Intermediate Architectural Photography (3 cr.)

The course provides students with understanding related to black & white and color photography. The course consists of a series of lectures explaining the technical aspects of cameras such as using light meters, apertures, different lenses, etc. Practical experience will ensure that students learn how to apply and manipulate these aspects during field trips. The students will be familiarized with the work of masters and will understand their different approaches through discussions in class.

ARCH 512 Surveying (3 cr.)

The course provides students with knowledge and some experience about measurement methods, surveying instruments, leveling, topographic surveying, triangulation, etc.

Internship Courses

Required Courses

ARCH 001 Internship I: Material Workshops

This course offers an in depth knowledge of local materials production and uses through a direct students' involvement in related workshops. Organized by group of 4 or 5, students will visit at least 5 manufactures/workshops dealing with different material. An instructor will supervise the students throughout the internship period. Students will need to submit a detailed and individual report concerning all discovered materials and their manufacturing process as well as companies' profile and organization. The faculty will assist students in their search for appropriate internship experiences; however, it is the students' responsibility to secure employment.

ARCH 002 Internship II: Construction Sites Visits

This is a 2 months' full time internship where students are exposed to site work. The aim is to provide students the opportunity to acquire a hands-on experience in contemporary construction practice and site management. Students will be exposed to modern construction tools, professional and ethical responsibility. This internship will allow students to understand the impact of architectural design and solutions in a global, economic, environmental, and societal context. This experience will also enhance their ability to work in multi-disciplinary teams. Students must document this experience by submitting a report to the instructor of record. The faculty will assist students in their search for appropriate internship experiences; however, it is the students' responsibility to secure employment.

ARCH 003 Internship III: Local Design Office/ Execution Drawings

This internship is a 2 months, full-time summer work experience under the direct supervision of a registered architect. The aim is to provide students the opportunity to experience a working environment in an architecture firm in order to observe and apply their knowledge and skills. Students have the option to be involved in the variety of design stages from the preliminary conceptual design stage all through execution drawings and detailing. Students must document this experience by submitting a report and a portfolio with letters of recommendation from the supervising architect to the instructor of record. The faculty will assist students in their search for appropriate internship experiences; however, it is the students' responsibility to secure employment. The faculty approval on the host company is mandatory.

ARCH 004 Internship IV: Regional Design Office

The regional internship is an opportunity for students to gain practical experience in a new environment and expand their knowledge and skills as well as their professional networks. This allows them to advance their pursuit of a career by offering them new perspectives and possibilities. By the end of this course students will be able to:

- Integrate work experience with professional development and personal growth
- Reflect critically on their contributions to their internship organization
- Work effectively and collegially as a part of a team
- Analyze the transnational and intercultural dimensions of their host agency work

During this internship, it is recommended that students be involved in all design stages as well as site visits, documentation, client presentation, meetings, clerical work and administration tasks in order to gain insight into the day-to-day functioning of a firm.

This internship program is an important aspect of students' professional development and leadership skills. The practical experience gained is expected to complement and enhance the academic program.

Students must document this experience by submitting a weekly report and a portfolio as well as a

pre-defined list on approved executed task from the supervising architect to the instructor of record. The faculty will assist students in their search for appropriate internship experiences; however, it is the students' responsibility to secure employment. The dean's approval on the host company is mandatory.

General Education Elective (GEE) Courses Outline

ASST 208 Art Appreciation (3 cr.)

Color plays an important role in our lives, and everyone interacts with it on a daily basis. Color conveys visual information, and can affect us physically as well as psychologically. Understand more about color, color theory, composition, and how you can use it, experiment and explore in an informal studio environment with students from a variety of disciplines. Also, this course aims to extend students painting skills, idea generation and cultivating originality, painting movements, develop their art and critical practices, broaden their understanding and abilities to make and discuss art. By the end of this course, students will present their painting portfolio.

ASST 209 Introduction to Sculpture (3 cr.)

This class introduces fundamental issues in sculpture such as site, context, process, psychology and aesthetics of the object, and the object's relation to the body. During the semester Introduction to Sculpture will explore issues of interpretation and audience interaction. As a significant component to this class introductions to a variety of materials and techniques both traditional (wood, metal, plaster) as well as non-traditional (fabric, latex, found objects, rubber, etc.) will be emphasized.

ASST 211 Ceramics (3 cr.)

This course is a creative and technical introduction to ceramics, with emphasis on the potter's wheel, coil building, slab building, glaze application & firing. The class covers the characteristics of the materials used in ceramics as well as the various processes involved. More importantly, the course aims at nurturing student creativity by exploring the possibilities of artistic expression within this particular medium.

ASST 212 Installation Art (3 cr.)

This course explores, with students, the art of installation in various media –including, but not limited to, photography, painting, drawing, audiovisual media and sculpture. The course encourages experimentation beyond the traditional understanding of high art and of art as a tangible outcome. Students learn to critique installation arts and to document their work.

ASST 213 Photography (3 cr.)

This course is designed for students who may have very little or no experience with photography. The course will provide students with a basic understanding of the essential principles and practices of photography. Students will focus on digital imaging techniques and the use of photography as a fine art and visual language. Students will be informed in the basic principles of photography to ensure a confident foundation for further development and experimentation within the practice of photography as it relates to their own area of study. Field trips may be required.

ENGL 501 Creative Writing (3 cr.)

This course is a journey into self-discovery and self-expression. The course introduces a variety of topics and creative writings in the different genres of fiction, non-fiction, poetry, drama, and short film screenplays. It is a workshop- based course in which students get to experiment with a variety of creative forms and eventually submit their portfolio of original work. Students will be able to get into close contact with themselves as they experience writing memoirs, reflection essays, poetry, and cultural expressions and will also get in contact with the other as they explore biographies, create characters in stories and short screenplays, and so on. With continuous and intensive free-writing, self-expression and creative writing in the different genres, this course will surely facilitate students' emotional awareness and enrich their writing styles. *Prerequisite: ENGL202.*

ENVI 205 Sustainable Development (3 cr.)

Our world continues to face difficult and confronting issues relating to our past and present development pathways. This course thus provides foundational knowledge of the principles of sustainable development as a possible way to balance social equity, environmental sustainability and economic needs. This course draws on numerous case studies from around the world to illustrate the complexity of sustainable development issues and their implicit trade-offs. *Prerequisite: ENGH102.*

ENVI 206 Resource Management & Environmental Planning (3 cr.)

Introduction to resources & management systems; sustainable development - history, concepts & applications; framework & process of planning with a focus on local & regional levels; integrated landscape conservation; protected area planning and management; land tenure & property rights; communicating conservation; discussion forums, analytical studies, applications & project work. *Prerequisite: ENGH102.*

ENVI 207 Geographic Information Systems (3 cr.)

This course provides students with a foundation in the science and technology of geographical information systems (GIS). GIS science focuses on ways to describe and represent geographical phenomena and explain geographical patterns and processes. GIS technology focuses on data modelling, databases, spatial analysis, and map visualization. The course provides GIS skills that can be applied in a wide range of areas, including ecology, conservation science, environmental management, planning, geography, and the earth sciences and provides laboratory sessions and a field trip for students to apply GIS to solve practical real-world problems.

ENVI 208 Tools for Environmental Assessment and Analysis (3 cr.)

Many tools are available to governments, industry and citizens to help them make and implement good environmental management decisions. These include, for example, EIA, environmental risk management, environmental auditing and corporate reporting. This course focuses on the essential techniques and methods and outlines their application to resolving problems of sustainable development. The course involves an investigation of how these tools fit within legislative and institutional frameworks, and trends in the use of particular tools at project, local, regional, national and international scales. *Prerequisite: ENGH102.*

MATH 316 Probability and Statistics (3 cr.)

Axiomatic probability theory, independence, conditional probability. Discrete and continuous random variables, conditional expectation, simulation of random variables and Monte Carlo methods. Central

limit theorem. Basic statistical inference, parameter estimation, hypothesis testing, and linear regression. *Pre-requisite: Math 110.*

MDIA 209 Introduction to Music (3 cr.)

This course is design for students with little or no background in music who would like to develop a theoretical and practical understanding of how music works. Students will be introduced to different kinds of musical notation, melodic systems, harmonies, meters, and rhythmic techniques with the goal of attaining basic competence in the performance and creation of music. Students will also learn to approach music as both an intellectual and an emotional activity; they will learn about music's historical, sociological, cultural, and biographical contexts; and they will gain knowledge of the many traditions of music.

PHIL 201 Introductory Philosophy (3 cr.)

This course offers an intensive introduction to philosophical problems and methodologies as developed by major figures in the history of philosophy. This course includes: the major philosophical areas of inquiry; how philosophy and culture interact in the development of thought; the principal issues of epistemology; the principal issues of metaphysics; the key contributors to the fields of moral, social, and political philosophy; how global integration of cultures has affected contemporary philosophical thinking. The course also discusses the application of philosophical methods to problem solving, decision-making, ethical thought, and strategic thinking. *Prerequisite: ENGL201.*

SOCI 202 Scientific Revolutions, Technology, and Society **(3 cr.)**

Study of the different episodes in the history of science will explore the boundaries between the sciences as autonomous disciplines and the historical circumstances in which they have developed. Topics covered include: the history of science revolution; the nature of scientific research and the application of sciences, big science vs. little science; the limits of scientific and technical knowledge; the political and economic power of science and technology; effects on individual and social ways of life; the rise of technical industry and mass media; the relations between science; technology; and religion; and ethics in science and technology. *Prerequisite: ENGH102.*