BACHELOR OF ENGINEERING IN ARCHITECTURE

Main Language of Instruction:
French ☑ English ○ Arabic ○

Campus Where the Program Is Offered: CST

OBJECTIVES

The architecture program is designed to train architects through an education that is both hands-on and innovative, centered on architectural studios and teamwork in a multilingual and multicultural framework. These students should be able to:

- Pursue specialized practical or theoretical graduate studies in internationally renowned universities
- Become designers, creators and decision-makers in the construction field
- Collaborate with major local or international architectural firms

PROGRAM LEARNING OUTCOMES (COMPETENCIES)

- Identify and understand complex issues related to architecture and its rural and urban context
- Identify and compare the different architectural theories and trends throughout history
- Acquire, handle, manage and apply new knowledge using advanced digital tools, and use relevant learning methods
- Analyze and address different contexts, including rural, urban, environmental, social, cultural, identity-related factors.
- Effectively communicate with diverse audiences
- Conceptualize and envision adequate design solutions
- Collaborate with a team whose members jointly provide leadership, foster a collaborative and inclusive environment, plan tasks, and achieve objectives
- Apply technical and legal regulations
- Recognize ethical and professional responsibilities in architectural situations and formulate critical opinions that must take into account the impact of architectural solutions in global, economic, environmental, and societal contexts
- Develop and conduct relevant experiments, analyze and interpret data, and use architectural judgment to draw conclusions
- Effectively monitor and manage construction sites
- Produce clear and updated execution documents, including detailed plans related to: architecture, structure, electromechanics, environment, and a detailed description of technical specifications
- Design, create and innovate several complex architectural projects, addressing analytical, conceptual, architectonic, legal, financial, and technical aspects while maintaining overall project coherence

PROGRAM REQUIREMENTS

300 credits: Required courses (258 credits), Institution's elective courses (2 credits), Open elective courses (4 credits).
USJ General Education Program (36 credits - may be part of the above categories).

USJ General Education Program (36 Cr.)
English (4 Cr.)
English Level A (4 Cr.)
Arabic (6 Cr.)
الفلسفة و العمارة (2 Cr.)
Real Estate and Construction Law (4 Cr.)
Humanities (8 Cr.)
Ethics and Architecture (4 Cr.)
USJ Values (2 Cr.)
Architecture and Religion (2 Cr.)

Social Sciences (8 Cr.)
Urban Sociology (2 Cr.)
Professional Practice and Ethics (2 Cr.)
Project Management (4 Cr.)
Quantitative Research Techniques (8 Cr.)
Architecture Applied Mathematics 1 (4 Cr.)
Structural Design: Structural Systems and Frameworks (4 Cr.)
Communication Techniques (4 Cr.)
Communication Techniques (2 Cr.)
End of Studies Project 3: Detailed Preliminary Draft and Final Defense (2 of 14 Cr.)

Fundamental Courses (260 Cr.)

Required Courses (258 Cr.)
Architecture Studio I: Introduction to Design (10 Cr.). Architecture Studio II: Introduction to Architectural Project (10 Cr.). Architecture Studio II (continued). (6 Cr.). Architecture Studio III: Housing and Structure (10 Cr.). Architecture Studio IV: Equipping the City (10 Cr.). Advanced Studio I (10 Cr.). Advanced Studio II (10 Cr.). Advanced Studio III (10 Cr.). Advanced Studio IV (10 Cr.). Introduction to Research (4 Cr.). End of Studies Project I: Project Choice and Thesis (6 Cr.). End of Studies Project II: Preliminary Draft (10 Cr.). End of Studies Project III: Detailed Preliminary Draft and Final Thesis (14 Cr.). Studio - Developed Project I (4 Cr.). Studio - Developed Project II: (4 Cr.). Introduction to Design and Digital Manufacturing (4 Cr.). Representing Architecture I: Introduction (3 Cr.). Representing Architecture II: Deepening (3 Cr.). Representing Architecture III: Development of a Particular Style (3 Cr.). Geometry and Architecture I (4 Cr.). Geometry and Architecture II (3 Cr.). Digital Tools I: Introduction (3 Cr.). Digital Tools II: Deepening (3 Cr.). Digital Tools III: Advanced (3 Cr.). "In-situ": Introduction (3 Cr.). Architecture Elements (3 Cr.). History of Architecture: from the 19th to the 20th Century (4 Cr.). Societies, Culture and Way of Life (2 Cr.). History of Architecture: from the Origin to Antiquity (4 Cr.). Philosophy and Reality of Living (2 Cr.). History of Architecture: from the Middle Ages to the Renaissance (4 Cr.). Lebanese Architectural Heritage and Surveys (4 Cr.). History of Contemporary Architecture (4 Cr.). Facing the Existing Building: Preservation, Restoration and Transformation (2 Cr.). Art and Architecture (2 Cr.). Landscape and Architecture (2 Cr.). Architecture, City and Territory: Contemporary Issues and Strategies (4 Cr.). Analysis and Critical Thinking in Architecture (3 Cr.). Architecture and Urban Planning (4 Cr.). Theory of Architecture (2 Cr.). Building Technology I: Notions (3 Cr.). Building Technology II: Structural Work and Circulation (4 Cr.). Building Technology III: Envelopes and Facades (4 Cr.). Building Technology IV: Interior and Finishes (4 Cr.). Art of Structures (3 Cr.). Static (2 Cr.). Material Resistance (4 Cr.). Structural Design: Bases and Reinforced Concrete (4 Cr.). Building Physics (2 Cr.). Equipment and Comfort (4 Cr.). Equipment and Flows (4 Cr.). Climate, Ecology and Architecture (4 Cr.). Environmental Certification (2 Cr.). Architecture Applied Mathematics II (3 Cr.), Professional Internship (2 Cr.). Photographing Space (3 Cr.).

Institution's Elective Courses (2 Cr.)
Urban Planning Workshop (2 Cr.). Developed Digital Tools (2 Cr.).

Open Elective Courses (4 Cr.)
General knowledge courses chosen from the open elective courses offered by the University.

SUGGESTED STUDY PLAN

Semester 1

Code	Course Name	Credits
538PA1AS1	Architecture Studio I: Introduction to Design	10
538RGAAS1	Geometry and Architecture 1	4
538RA1AS1	Representing Architecture I: Introduction	3
538CISAS1	"In-situ": Introduction	3
538SPBAS2	Building Physics	2
538ST1AS1	Building Technology I: Notions	3
538SELAS1	Architecture Elements	3
	Total	**28**

Semester 2

Code	Course Name	Credits
538PA2AS2	Architecture Studio II: Introduction to Architectural Project	10
538RA2AS2	Representing Architecture II: Deepening	3
538RD1AS2	Digital Tools I: Introduction	3
538CH1AS2	History of Architecture: from the 19th to the 20th Century	4
538SS1AS2	Art of Structures	3
538SMAAS1	Architecture Applied Mathematics I	4
538CSMAS2	Societies, Culture and Way of Life	2
538RGAAS2	Geometry and Architecture II	3
	Total	**32**

Summer Trimester

Code	Course Name	Credits
538PAAAS2	Architecture Studio II (continued)	6
	Total	**6**

Semester 3

Code	Course Name	Credits
538PA3AS3	Architecture Studio III: Housing and Structure	10
538RPEAS3	Photographing Space	3
538CH2AS3	History of Architecture: from the Origin to Antiquity	4
538CPHAS3	Philosophy and Reality of Living	2
538SMAAS3	Architecture Applied Mathematics	3
538ST2AS3	Building Technology II: Structural Work and Circulation	4
538CAAAS3	Art and Architecture	2
538SSTAS3	Static	2
538RD2AS3	Digital Tools II: Deepening	3
	Total	**33**

Semester 4

Code	Course Name	Credits
538PA4AS4	Architecture Studio IV: Equipping the City	10
538CPLAS4	Lebanese Architectural Heritage and Surveys	4
538CH3AS4	History of Architecture: from the Middle Ages to the Renaissance	4
538ST3AS4	Building Technology 3: Envelopes and Facades	4
538SECAS4	Equipment and Comfort	4
538SRMAS4	Material Resistance	4
538CTAAS4	Theory of Architecture	2
	Open Electives	2
	Total	**34**

Summer Trimester

Code	Course Name	Credits
538PPDAS5	Studio - Developed Project I	4
	Total	**4**

Semester 5

Code	Course Name	Credits
538PA1AS5	Advanced Studio I	10
538RA3AS5	Representing Architecture III: Development of a Particular Style	3
538CH4AS5	History of Contemporary Architecture	4
538CBEAS5	Facing the Existing Building: Preservation, Restoration and Transformation	2
538SS3AS5	Structural Design: Bases and Reinforced Concrete	4
538ETAAS5	Ethics and Architecture	4
538CAUAS5	Architecture and Urban Planning	4
538RD3AS8	Digital Tools III: Advanced	3
	Total	**34**

Semester 6

Code	Course Name	Credits
538PA2AS6	Advanced Studio II	10
538CPAAS6	Landscape and Architecture	2
538ST4AS6	Building Technology IV: Interior and Finishes	4
538SE1AS6	Climate, Ecology and Architecture	4
538GDCAS6	Real Estate and Construction Law	4
538CSUAS6	Urban Sociology	2
538PHAAS5	Arabic open elective - الفلسفة و العمارة	2
	Open electives	2
	Total	**30**

Summer Trimester

Code	Course Name	Credits
538PD2AS7	Studio - Developed Project II	4
	Total	**4**

Semester 7

Code	Course Name	Credits
538PA3AS7	Advanced Studio III	10
538CTVAS7	Architecture, City and Territory: Contemporary Issues and Strategies	4
538SS4AS7	Structural Design: Structural Systems and Frameworks	4
538GSPAS7	Professional Internship	2
538CPCAS7	Analysis and Critical Thinking in Architecture	3
538CARAS6	Architecture and Religion	2
538PFDAS7	Introduction to Design and Digital Manufacturing	4
	Total	**29**

Semester 8

Code	Course Name	Credits
538PA4AS8	Advanced Studio IV	10
538PIRAS8	Introduction to Research	4
538SEFAS8	Equipment and Flows	4
538GPRAS8	Professional Practice and Ethics	2
538ANGAS8	English	4
	USJ Values	2
	Total	**26**

Summer Trimester

Code	Course Name	Credits
538PP1AS8	End of Studies Project I: Project Choice and Thesis	6
	Total	**6**

Semester 9

Code	Course Name	Credits
538PP2AS9	End of Studies Project II: Summery Preliminary Draft	10
538SE2AS9	Environmental Certification	2
538GMPAS9	Project Management	4
	Institution's elective course	2
	Total	**18**

Semester 10

Code	Course Name	Credits
538PP3AS10	End of Studies Project III: Detailed Preliminary Draft and Final Defense	14
	Total	**14**

COURSE DESCRIPTION

Project, Research and Thesis:

538PA1AS1 Architecture Studio I: Introduction to Design 10 Cr.

The objective of this studio is the acquisition of the basic principles of design. Through a series of thematically varied projects with specific objectives, students acquire key concepts, learn about experimentation, and practice drawing and modeling.
Number of projects carried out: 5
Learning outcomes: Formal and volumetric research, design and development of architectural elements, structural integrity, experimentation with various materials, material-form-structure-function relationship, composition process (transformation, iteration, assemblies, etc.), explore the concepts of movement and performance in space, proportions and scale, experimentation with light/shadow relationships, organization and presentation of boards, documentation of the artistic process.
Rendering elements: Handcrafted models and boards, to be specified by the instructors.

538PA2AS2 Architecture Studio II: Introduction to Architectural Project 10 Cr.

This studio is an introduction to the architectural project. Its objective is to introduce and provide the means to address fundamental architectural notions linked to the form, use and experience of space. Modeling and drawing are explored as tools for the design and empirical investigation of notions of composition, proportion, scale, light, place and time.
Number of projects carried out: 4
Learning outcomes: Spatialization of a situation/scenario through a spatial experience, sequence and architectural journey, body/space relationship (scales, proportions), arrangement of spaces (static/dynamic), impact of natural light on the space, analysis and integration into an urban site (adjoining walls, alignments, etc.), experimentation with structural systems, structural hierarchy (pillars, beams, etc.) and form-structure-materials relationship, design of a simple architectural program (small dwelling, neighborhood equipment) and development of its functional organization chart, conceptualization of an abstract idea or an architectural intention, representation by geometric drawing and model, structuring an oral presentation.
Rendering elements: Handcrafted models and boards. The model is mandatory for all projects (study models and final model). The rendering elements will be specified in the instructions (conceptual research and organization chart, plans, sections, facades). Axonometry and/or perspective will be requested for at least one project.
Prerequisite: Architecture Studio I: Introduction to Design (538PA1AS1)

538PAAAS2 Architecture Studio II (continued) 6 Cr.

This studio is a continuation of Architecture Studio II. Its objective is to give the student time to assimilate, master and develop in more depth the concepts discussed in the previous studio.
Prerequisite: Architecture Studio II: Introduction to Architectural Project (538PA2AS2)

538PA3AS3 Architecture Studio III: Housing and Structure 10 Cr.

This studio addresses themes specific to a program (housing), logic (structure) and context (the natural environment). Creative investigation covers contextual features such as topography, orientation, climate and vegetation as well as structural logics through observation, research and manufacturing. An individual or collective housing program addresses the notion of inhabiting a natural site and tests the relationship conceived between the site, the material and its structural and environmental potentialities and the creation of architectural space.
Number of projects carried out: 4 projects (site analysis, concept, project), including an individual housing project with application of the structure.
Concepts acquired: Individual housing program, collective housing, integration into sloping land, structure and layout, parking, introduction to regulations/surface calculation (FAR, BCR, setbacks, maximum height, etc.). Introduction to small-scale housing with increasing complexity allowing for the approach of mounting, module processing, housing design tools, structure and organization of space, housing typologies (simplex, duplex), adjoining and opposite, interior and exterior development, composition of rendering elements and organization of boards, drawing techniques (scales, mass plan, plans, sections, rendering facades), materiality and structure, intentional model and conceptual model.

Rendering elements: Boards including plans, sections, facades and perspective (scales and format to be defined by the instructors), intention models and conceptual model.
Topics related to the "Philosophy and Reality of Living" course and the "Representing Architecture III" course.
Prerequisite: Architecture Studio II: Introduction to Architectural Project (538PA2AS2)

538PA4AS4 Architecture Studio IV: Equipping the City 10 Cr.

The studio explores the multiple facets of architectural intervention in an urban context. It approaches the analysis and representation of the city as a means of reflection on public space and the dialectical relationship between buildings and the society that inhabits them. The notions of program, accessibility and materiality are developed through a series of public equipment projects of different scales.
Number of projects carried out: 3 projects
Urban analysis (group work), urban intervention (individual work)
2 public equipment projects
Learning outcomes: Master urban analysis and suggest an architectural program in response to the identified issues, develop a public equipment program (e.g. cultural, health, leisure, mixed, etc.), integrate into an urban site. Manage constraints related to accessibility, flows, interior-exterior spatial continuities, structure, parking, and regulations. Experiment with form-materials-structure relationships.
Urban analysis and urban intervention:
- Site visit, urban discovery, investigation, meeting users and analyzing their practices, taking photos, sketches, etc.
- The history of the site, introduction to the search for resources
- Analysis of urban elements: road systems and traffic, building morphology, open spaces, urban atmospheres (sunshine, lighting, sound, activity, etc.), flows and permeabilities, etc.
- The cartographic representation of urban morphology: full and empty spaces, the age of the building, heights, functions, etc.
- Develop a problematic drawn from the various findings in order to initiate the project guidelines
- Proposal of a program and development of an individual project following the analysis carried out within the group

Prerequisite: Architecture Studio III: Housing and Structure (538PA3AS3)

538PPDAS5 / 538PD2AS7 Studio - Developed Project 1 and 2 4 Cr.

The developed project is an introduction to the final preliminary project and the execution file. At the end of studio IV, students will choose one of the projects covered during studios III and IV and develop it in detail for 2 months. The practical and technical aspects linked to the realization of the project are addressed here in more depth.
Learning outcomes: Structure, developed plans (axes, double walls, ducts, technical premises, etc.), developed sections and facades, wall sections and details (sealing, joints, aluminum, etc.), stairs, catalog of openings.
Prerequisite: Architecture Studio III: Housing and Structure (538PA3AS3)

538PA1AS5 Advanced Studio I W-10 Cr.

Advanced studios I, II, III and IV are multidisciplinary and thematic studios, offered to 3rd and 4th year architecture students. They explore a multitude of approaches, subjects and scales. They allow opening up to various fields and disciplines with the aim of enriching architectural exploration and formulating new approaches.
These studios are structured around different areas of reflection:

A- Urban/rural and social architecture and manufacturing:
The main objective is to educate students to analyze various aspects of urban space, develop diagnoses and suggest programs likely to solve various urban problems.

B- Architecture and heritage:
In this context, the issue of heritage/conservation is addressed. Students are asked to design within the framework of a heritage fabric and/or with ancient architecture (integration, renovation)

C- Architecture, landscape and sustainable development:
In this context, students are encouraged to design a space while taking into account natural hazards (e.g. nuisance sites, coastal areas, steep slopes, etc.). They are also prompted to apply environmental prevention strategies (sustainable architecture).

D- Architecture and territory:
In this context, students are required to intervene in a site where relations with the territory are vague or disrupted (urban or administrative rupture, old demarcation line, regional interface, wasteland in the area bordering an existing urban area, etc.) in order to revitalize it. The issues of territorial identity, population, and territorial challenges are addressed within this framework.

Number of projects carried out: 3 or 4 projects
Learning outcomes:
- Urban and territorial issues in the targeted context
- Integration of the project in the natural context, in the built environment, the constructed environment, the social environment and the cultural environment
- Crossing and management of multiple programs
- Typology and repeatability/Adaptability and modularity
- Mastery and proposal of structural, formal and constructive systems in accordance with the required architectural expression.

Prerequisite: Architecture Studio IV: Equipping the City (538PA4AS4)

538PA2AS6 Advanced Studio I 10 Cr.

Cf. content of 538PA1AS5
Number of projects carried out: 3 or 4 projects
Prerequisite: Advanced Studio I (538PA1AS5)

538PA3AS7 Advanced Studio III 10 Cr.

Cf. content of 538PA1AS5
Number of projects carried out: 3 or 4 projects
Prerequisite: Advanced Studio II (538PA2AS6)

538PA3AS8 Advanced Studio IV 10 Cr.

Cf. content of 538PA1AS5
Number of projects carried out: 2 projects
Prerequisite: Advanced Studio III (538PA3AS7)

538PIRAS8 Introduction to Research 4 Cr.

The objective of this course is to introduce students to the research project and the central role it plays in the creation of an architectural project. The course explores key architectural issues and supports the construction of personal hypotheses based on a critical reading of various theoretical texts. Moreover, this course is an introduction to end-of-studies thesis work, ranging from the basics of writing a methodical text to the articulation of a singular problem.

538PFDAS7 Introduction to Design and Digital Manufacturing 4 Cr.

The objective of this studio is the introduction to digital manufacturing tools and new design technologies (CNC fabrication, laser and 3D printing, etc.). Experimentation, manufacturing and installations on a 1:1 scale are also covered. The course includes visits/work in the workshop of professionals to produce prototypes of the designed objects.
Prerequisite: Architecture Studio IV: Equipping the City (538PA4AS4)

538PP1AS8 End of Studies Project I: Project Choice and Dissertation 6 Cr.

During this studio, students define and methodologically explore a personal topic. They deepen a research project related to a theme developed within the critical research seminar, evaluate it, and produce an end of studies thesis accompanied by an exploration of the end of studies project to be pursued.
Critical research seminars address specific topics – heritage, theory, ecology, community, form and others – and are linked to the End of Studies Project II course. The theoretical and referential contributions of the seminars serve to question a topic and to situate the students' personal research in a broader intellectual and historical context.
Prerequisite: 4 advanced studio courses

538PP2AS9 End of Studies Project II: Summary Preliminary Draft 10 Cr.

The Final Year Project II represents a global synthesis of the academic curriculum. It will be the basis of a test of the level of theoretical and practical knowledge acquired by the student, throughout the four academic years spent at the University, and will result in a summary preliminary project dealing with the architectural concept arising from the problematic of the location, the theme and the chosen program. This is only possible following an in-depth analysis, allowing the student to have a synthetic vision at different levels: architectural, urban, heritage and environmental in depth and well thought out.
Prerequisite: End of Studies Project I: Project Choice and Dissertation (538PP1AS8)

538PP3AS10 End of Studies Project III: Detailed Preliminary Draft and Final Defense 14 Cr.

In order to finalize their diploma project, students will have to develop their summary preliminary project processed during the previous semester using their advanced knowledge of architecture and engineering (materials, structure, electricity, mechanics, security, ecology, etc.). They will present a final project covering all architectural, technical and environmental aspects.
Prerequisite: End of Studies Project II: Summary Preliminary Draft (538PP2AS9)

Performing Arts and Techniques

538RA1AS1 Representing Architecture I: Introduction 3 Cr.

The objective of this course is to introduce students to the representation of simple shapes. It aims to introduce freehand analog observation drawing. It also allows students to design and express themselves plastically by translating the sensations of observation of the eye through different representation tools and media. It is an elementary and accelerated basic education, which introduces students to the notions of proportion, composition, the use of horizontal and vertical references as well as perspective. Moreover, the course offers a condensed lecture of the history of presentation in architecture through image analysis and visualization. At the end of the course, students are encouraged to begin designing a portfolio of their work to introduce them to computer image manipulation tools.

538RA2AS2 Representing Architecture II: Deepening 3 Cr.

The objective of this second course in the "Representing Architecture" sequence is to deepen the tools of representation. The course evolves from workshop teaching towards site reading where urban and landscape sketching increases the ability to represent rhythms, movements and lights. The student will be introduced to the process of iteration and narration in contemporary figuration in architecture through collage, infographics, and other types of composed multimedia drawing. The design of a portfolio publication bringing together all the works in the course deepens the use of graphic tools introduced in the first semester.
Prerequisite: Representing Architecture 1: Introduction (538RA1AS1)

538RA3AS5 Representing Architecture III: Development of a Particular Style 3 Cr.

The objective of this third and final course in the "Representing Architecture" sequence is to help students develop their own style and encourage them to take a critical look at this aspect of the discipline. This is an advanced course on representation, which focuses on the production of complex drawings. In addition, the course invites open reflection on graphic activity in architecture by questioning the evolution of contemporary representation methods. It also develops written and verbal presentation tools, which complement graphic representation work. Students are introduced to the web design process by designing a professional identity digitally bringing together a selection of their best drawings and projects created in the studio.
Prerequisite: Representing Architecture 2: Deepening (538RA2AS2)

538RGAAS1-S2 Geometry and Architecture I and II 4+3 Cr.

The objective of these two complementary courses is to allow students to acquire the techniques of guided geometric hand drawings using architectural tools, combining the development of both spatial and technical thinking. The teaching deals with geometry as an essential tool for other sciences and techniques of architecture,

to see in space and understand geometric conventions, the representation of three-dimensional objects and the mastery of the operations of projections, axonometry, shadows and perspectives.
Content: Descriptive geometry – Axonometry – Perspective – Cast shadows
Prerequisite: Geometry and Architecture I (538RGAAS1) and a prerequisite of Geometry and Architecture II (538RGAAS2)

538RD1AS2 Digital Tools I: Introduction 3 Cr.

The objective of this course is to introduce students to digital representation and design tools as well as geometric conventions. The techniques of freehand and guided hand during the prerequisite courses will be developed first by hand, using drawing tools, then digitally through different types of software to cover the computer representation codes of the space in two dimensions (2D), then in 3 dimensions (3D) using Autocad software. Exploration through observation and representation using orthogonal projections, conventional drawing (plan, sections, elevations, perspectives) of complex surfaces will also be treated.
Prerequisite: Geometry and Architecture 1 (538RGAAS1)

538RD2AS3 Digital Tools II: Deepening 3 Cr.

The objective of this course is to deepen the notions of digital representation and design. An introduction to the geometry of Boolean operations, necessary for understanding parametric representation and graphic modeling of complex shape and volume, will be offered using software such as 3D Max, Rhinoceros and Grasshoper, which will evolve according to the advancement of technologies.
Prerequisite: Digital Tools I: Introduction (538RD1AS2)

538RD3AS8 Digital Tools III: Advanced 3 Cr.

The objective of this course is to conclude the sequence of 3 digital tools courses with a summary course which remains at the cutting edge of developments in digital design and representation software. This course summarizes the design and construction tools as well as the production of final renderings of the architectural project. Students will be introduced to software such as BIM, Revit or their equivalent depending on the evolution of technologies.
Prerequisite: Digital Tools II: Deepening (538RD2AS3)

538RR1SAS6 Performing Arts and Techniques: Specialized I 3 Cr.

This is an elective course, specialized in the family of "Performing Arts and Techniques", which will be the subject of a future detailed definition.

538RR2SAS6 Performing Arts and Techniques: Specialized II 3 Cr.

This is an elective course, specialized in the family of "Performing Arts and Techniques", which will be the subject of a future detailed definition.

History, Context and Culture

538CISAS1 "In-situ": Introduction 3 Cr.

The objective of this course is to introduce the notion of "site" or context during which students will have to insert their future architectural interventions, as well as the elements that will influence this notion and undoubtedly mold it and allow it to take shape.
Multi-level observation and exploration of sites will be conducted throughout the semester. Careful reading of a site is the sine qua non condition to consciously design and enrich our future; it allows us to use creativity and scientific intelligence to shape the environment in the best long-term interests of all living things.
Starting with what the Romans called the "Genius loci" or the spirit of the place, the course is structured around three main themes:

1- Natural sites: a look at the topography, trees, rivers, hills but also the human intervention on the natural site.
2- Urban context: an examination of the cultural and building context and the heritage.
3- Ecology and activism: observing the environmental and cultural value of an ecological site but also the rules and their application as well as the essential factors for a respectful practice of the environment.

While tackling multiple problematics at once, each theme will focus on one aspect of the site at a time through maps, models, readings, films, research and presentations.
Content: Geology – Geography – Movement of the Earth and the sun – Natural regions – Polarized regions: rural and urban – Ecological and environmental approach.

538CH1AS2 History of Architecture: from the 19th to the 20th Century 4 Cr.

The objective of this course is to introduce students to the time from the 19th to the 20th century, which constitute a fascinating period thanks to the development of new, increasingly efficient materials, the diffusion of plural inspirations as well as profound and rapid social changes. Architecture will thus experience an acceleration and multiplication of trends to respond to new techniques and ideologies.
Content: Historicism – Art Nouveau – International style – Organic architecture, heir to Art Nouveau – Deconstructivist architecture.

538CSMAS2 Societies, Culture and Way of Life 2 Cr.

The objective of this course is to introduce students to culture, norms, social rhythms, environment, and housing, taking into account that culture is a human creation that men constantly redefine and reinvent. At the articulation of the private-family sphere and the public sphere, this course addresses extremely diverse practices, attitudes and lifestyles in different societies; a diversification which simultaneously affects practices of consumption of material and cultural goods, morals, uses of space and time, domestic organization, and modalities of integration into society. The latter vary according to climate, value orientations, forms of culture, habitus. "A culture is the way of life of a society." Ralph Linton.
Content: Primitive societies and organization – Traditional societies – Contemporary societies – From way of life to habitat.

538CH2AS3 History of Architecture: from the Origin to Antiquity 4 Cr.

The objective of this course is to introduce students to the theological, ideological and theoretical aspects that accompany the works of Antiquity as well as the beginnings of architecture. This course aims to understand and use the vocabulary of art, architecture, and urban planning, and to identify and name the main (typical) stylistic characteristics of an artistic, architectural and urban production from the period studied. Students will thus be able to situate, in an argumentative manner, in time and space, architectural and urban planning achievements representative of the periods studied and explain the meaning of a work by restoring it in its context, that is to say by understanding the ins and outs of its development. However, above all, students will understand the relationship between the history of art and the political, economic and social organization of societies.
Content: Pharaonic Egypt – Hellenic Antiquity – Roman world – Early Christian conversion.

538CPHAS3 Philosophy and Reality of Living 2 Cr.

The objective of this course is to study the dimensions and the architectural and philosophical semantics that reveal the concept of *living*. That concept is the mirror of the occupant's thought, representing his way of life and his relationship with the environment and with the society. This course analyzes Heidegger's philosophy on the concept of *living* and the different manifestations and dimensions of this concept (the human being, the world, space and place) which for him is inherent to the human condition. The course will also expose the poetic vision of Bachelard, the more functional vision of Le Corbusier as well as the housing crisis of today's world, a symptom of deeper crises such as the architectural crisis (standardization) and the crisis of the meaning of *living*, a concept reduced to housing.
Prerequisite: Societies, Culture and Way of Life (538CSMAS2)

538CTAAS4 Theory of Architecture 2 Cr.

The objective of this course is to present a global view of architectural and urban theories. The course invites the analysis of buildings in relation, on the one hand, with the interior (the furniture, the space), and on the other hand, with the exterior (the block, the street and the city). In particular, it exhibits a series of emblematic projects from each era. The aim is to reveal the contributions of different eras to the theory of architecture, as well as to present the impact of the latter on architectural styles. The course seeks to communicate knowledge in a light way that arouses curiosity and passion in the students, motivating them to build an architectural culture, in order to encourage resorting to reading, research, discovery, and architectural analysis.

538CH3AS4 History of Architecture: from the Middle Ages to the Renaissance 4 Cr.

The objective of this course is to introduce students to the theological, ideological and theoretical aspects that accompany works from the Middle Ages to the Renaissance. This course aims to understand and use the vocabulary of art, architecture, and urban planning, and to identify and name the main (typical) stylistic characteristics of an artistic, architectural and urban production from the period studied. Students will thus be able to situate, in an argumentative manner, in time and space, architectural and urban planning achievements representative of the periods studied and explain the meaning of a work by restoring it in its context, that is to say by understanding the ins and outs of its development. However, above all, students will understand the relationship between the history of art and the political, economic and social organization of societies.
Content: Byzantium – Islam – Roman – Gothic – Renaissance – Baroque and Rococo.

538CPLAS4 Lebanese Architectural Heritage and Surveys 4 Cr.

The objective of this course is to provide an overview of Lebanese architectural heritage from the vernacular to the traditional, including domestic architecture, palaces, religious buildings, and other types of buildings. This course includes the analysis of the elements that make up this heritage, their evolution over time and according to the cities and regions, their different sources of inspiration and their terminology, and the city as a place of density and variation over different periods up to the modern movement.
Content: Vernacular architecture – Traditional architecture – The 30s to 40s – The 50s to 60s – Modern movement.

538CH4AS5 History of Contemporary Architecture 4 Cr.

The objective of this course is to develop the students' analytical and critical mind facing the world in which they will build and facing all the new constraints that present themselves to them. Contemporary architecture offers an enormous variety of challenges such as climate, energy, parametric, materials, star system, including the megalomania of cities, private and public actors, and participatory collaborations.
Content: Ecological architecture (or sustainable architecture) – Bioclimatic architecture – High-tech architecture – Blob architecture – Deconstructivism – Postmodernism – Critical regionalism – "Gadget" architecture – Bionic architecture – Metabolist architecture – Emergency architecture – Futurist architecture.

538CBEAS5 Facing the Existing Building: Preservation, Restoration and Transformation 2 Cr.

The objective of this course is to evaluate the different criteria of existing buildings, to discern their value and importance, and therefore, to adopt the best way to act with them. This course includes a presentation on the different possible techniques as well as their instruction manual, and the different trades required, either to preserve them or to reuse them in a notion of comfort adapted to contemporary needs.
Content: Criteria for evaluating buildings – Historic buildings – Listed buildings – Buildings with collective memory value – Buildings to recover – Buildings to transform – Restoration – Preservation – Rehabilitation.

538CAUAS5 Architecture and Urban Planning 4 Cr.

This course consists of introducing the conceptual and historical foundations, methods, and instruments of urban regulation in general and in Lebanon in particular. The objective is to initiate students to understand urban forms through a process of reasoned thinking.
This course comprises two parts:
The theoretical part consists of providing students with the necessary foundations to develop the ability to read an urban space. The course retraces the main strata of urbanization of different cities (medieval, modern, industrial, contemporary, etc.) to understand the logic used in the formation of the contemporary city.
The practical part aims to deal with data sources (quantitative methods: old and current topographical maps, statistics, thematic maps etc. / qualitative methods: direct observation, participant, survey etc.) suitable for the description and analysis of spaces.
This way, the course questions the challenges that arise for the future and development of the city (Lebanese context or others).
Content: Elements of the morphological and functional analysis of the city.

USJ Values **2 Cr.**

This course allows students to better understand USJ values and to apply them in their daily life.

538CAAAS3 Art and Architecture **2 Cr.**

The objective of this course is to analyze the intersections and parallels between art and architecture. This course contains the place of art in architecture but also architecture as an art in itself defining itself at the level of the idea, the form, the symbol and as an expression of the spirit of particular cultures, as well as that of individual artists and of the human spirit in general. Through presentations on various works of art from different approaches and parts of the world, students benefit from an interactive course around an important part of their training.
Content: Primitive art – Antiquity – Middle Ages – Renaissance – Baroque – Classical – 19th century – Contemporary art.

538CPAAS6 Landscape and Architecture **2 Cr.**

The objective of this course is to demonstrate the intimate links between architecture and landscape in the contemporary world. With the expansion of urban territory onto natural landscapes, the concern for integration, protection and planning has become an inherent part of today's architecture. Through the presentation of various projects in different approaches and parts of the world, students benefit from an interactive course about an important part of their training.
Content: Landscape conservation and transformation – Architecture and new urban landscapes – Sensitive landscape projects – Landscape protection and planning – Experimentation through projects.
Prerequisite: History of Contemporary Architecture (538CH4AS5)

538CPCAS7 Analysis and Critical Thinking in Architecture **4 Cr.**

This course introduces students to the field of architectural research and invites them to consider the project with respect to research. Through the study of characteristic projects and having already acquired philosophical rigor, student plan to think about architecture and urban planning in the service of Man and society. The objective of this course is to assimilate design reasoning, as well as to acquire a sensitive vision of architectural production. Subsequently, this course allows students to develop their own approach and position on multiple contemporary expressions.
Content: Architectural approach – Architectural production – Space – Functionality – Form – Structure – Philosophy – Poetic.
Prerequisite: Philosophy and Reality of Living (538CPHAS3) – Theory of Architecture (538CTAAS4)

538CTVAS7 Architecture, City and Territory: Contemporary Issues and Strategies **4 Cr.**

The objective of this course is to consider the architectural project not as a learning goal in itself, but rather as an instrument inviting students to form multidisciplinary urban thinking and to understand the issues that emerge from the study of the contemporary city, regardless of its size. Students explore the methods and tools used, the hybridization of knowledge, the contributions of the project in the different phases of its development, and the advantages and limits of such learning compared to others in the fields of development and urban planning. They are also invited, as future designers, to look at the building from the point of view of the inhabitant and user of the city.
Content: Building as an object – Urban fabric – Networks – Users – Interlocutors – Partners – New data.

538CSUAS6 Urban Sociology **2 Cr.**

The objective of this course is to have an overview of urban sociology, which tends to understand the relationships of interaction and transformation existing between the forms of organization of society and the forms of development of cities. It includes social morphology, which is the study of the forms that a society takes in space, as well as urban morphology, which is the study of the forms of the city with its habitat, its monuments, its decorations, and in general all its arrangements. These two pieces of knowledge make it possible to promote social life in existing cities and to better design new urban or architectural complexes.

538CCAAS6 History, Context and Culture: Advanced 4 Cr.

This is an advanced elective course in the family of "History, Context and Culture", which will be the subject of a future detailed definition.

538CCSAS6 History, Context and Culture: Specialized 4 Cr.

This is a specialized elective course in the family of "History, Context and Culture", which will be the subject of a future detailed definition.

Sciences, Techniques and Environment

538SELAS1 Architecture Elements 3 Cr.

The course provides theoretical support for studio work. Its objective is to introduce the fundamental notions relating to the design of an architectural project, both abstract (concept, route, light, symbolism, scale, etc.) and physical.
Content: Space – Measurements, scale and proportions – Light – Composition – Urban spaces (the fabric/object relationship) – Openings – Circulation elements.

538ST1AS1 Building Technology I: Notions 4 Cr.

The objective of this course is to provide a first general overview of buildings and their construction systems. It allows students, on the one hand, to become familiar with building terminologies and graphic conventions, and on the other hand, to understand common construction elements and their formatting, from the foundations to the roofs including the interior works as well as the envelope. This course also presents a first vision of the environmental issues linked to buildings. The aim of this course and the associated supervised works is to make it clear that these elements are both the product of technical/cultural/regulatory/environmental imperatives and architectural intentions and that they constitute both the support and the product of architectural design.

538ST2AS3 Building Technology II: Structural Work and Circulation 4 Cr.

The objective of this course is to present the usual systems, materials and implementation relating to the structural work (foundations and structure) of the building, mainly masonry, concrete, wood and metal. It also presents staircase systems and vertical circulation, in terms of materials, implementation and sizing: stairs, ramps, elevators, etc. The aim of this course and the associated supervised works is to make it clear that these elements are both the product of technical/cultural/regulatory/environmental imperatives and architectural intentions and that they constitute both the support and the product of architectural design.
Prerequisite: Building Technology I: Notions (538ST1AS1)

538ST3AS4 Building Technology III: Envelopes and Facades 4 Cr.

The objective of this course is to present the usual systems, materials and implementations relating to the building envelope, mainly facade cladding, openings, bays, roofs and roofing. The aim of this course and the associated supervised works is to make it clear that these elements are both the product of technical/cultural/regulatory/environmental imperatives and architectural intentions and that they constitute both the support and the product of architectural design.
Prerequisite: Building Technology I: Notions (538ST1AS1)

538ST4AS6 Building Technology IV: Interior and Finishes 4 Cr.

The objective of this course is to present the usual systems, materials and implementations relating to the interior of the building, mainly partitions, doors as well as wall, floor and ceiling cladding. The aim of this course and the associated supervised works is to make it clear that these elements are both the product of technical/cultural/regulatory/environmental imperatives and architectural intentions and that they constitute both the support and the product of architectural design.
Prerequisite: Building Technology I: Notions (538ST1AS1)

538SS1AS2 Art of Structures 3 Cr.

The objective of this course is to introduce students to understand and analyze the functioning of supporting structures. It presents the main simple architectural structures as well as the bases of the behavior of the structures, the determination of the forces acting on them and the principles of their dimensioning, and the resolution of the forces by graphic statics.

538SSTAS3 - 538SRMAS4 Static and Material Resistance 2+4 Cr.

This course addresses fundamental notions in order to understand the mechanical functioning of supporting structures through the statics and resistance of materials, through the analysis and calculation of simple structures with solicitations, efforts and deformations by applications on wooden and metal structures.
Prerequisites: Art of Structures (538SS1AS2), prerequisite for Static (538SSTAS3)
Static (538SSTAS3), prerequisite for Material Resistance (538SRMAS4)

538SS3AS5 Structural Design: Bases and Reinforced Concrete 4 Cr.

The objective of this course is to continue learning calculation, using Eurocodes including loads, overloads, combinations of actions, solicitations, service states and ultimate limit states. The goal is also to approach reinforced concrete and understand the structural logic of a building in order to carry out a general load reduction.
Prerequisite: Material Resistance (538SRMAS4)

538SS4AS7 Structural Design: Structural Systems and Frames 4 Cr.

The objective of this course is, on the one hand, to continue learning with the basics of soil mechanics, foundations, supports, and seismic forces, and on the other hand, to learn to design complex structures in relation to architecture in order to discover and identify the problematics raised by these structures and therefore know how to make coherent and rational choices that will strengthen the architectural project. This course also exposes students to certain families of structural forms recognized in the history of architecture as a way to explore their physical behavior and the issue of their complexity.
Prerequisite: Structural Design: Bases and Reinforced Concrete (538SS3AS5)

538SPBAS2 Building Physics 2 Cr.

The objective of this course is to enable students to acquire basic knowledge in the field of building physics. It addresses basic thermal concepts including the physics of walls, hygrothermal comfort and air quality to familiarize students with indoor thermal comfort, and the transfer of heat and water vapor through ventilation and within the walls of a building. The course also covers the first basics of building acoustics: nature and measurement of the acoustic field, sound propagation, acoustic requirements of a geometric and wave nature, and finally, the basics of photometry and colorimetry.

538SECAS4 Equipment and Comfort 4 Cr.

The objective of this course is to approach, in a design and integration orientation, the architectural and technological measures linked to the quality of the atmospheres at the level of visual comfort with natural and artificial lighting, of acoustic comfort with acoustic correction and insulation, of thermal comfort with heating and cooling techniques, and of air quality with ventilation techniques. The goal is to integrate them into the project design process in a climatic, regulatory and environmental context, to understand and describe the role and operation of the systems, and to use the usual pre-sizing rules for installations.
Prerequisite: Building Physics (538SPBAS2)

538SEFAS8 Equipment and Flows 4 Cr.

The objective of this course is to approach, in a design and integration orientation, the architectural and technological measures linked to the distribution of flows within the building at the level of water with supply, of evacuation and treatment, of fire protection, of strong currents and tides, and of mechanical circulations. The goal is to integrate them into the project design process in a climatic, regulatory and environmental context, to understand and describe the role and operation of the systems, and to use the usual pre-sizing rules for installations.
Prerequisite: Building Physics (538SPBAS2)

538SE1AS6 Climate, Ecology and Architecture 4 Cr.

The objective of this course is to address the issues and principles of sustainable development and bioclimatic building. It highlights the transversality of the problematic from a perspective of synthesizing knowledge related to the site, climate, equipment, technologies and materials.
It is based on case studies and experimentation to help understand the means of moving from concepts to effective implementation in the architectural project.

538SE2AS9 Environmental Certification 2 Cr.

The objective of this course is to present the different environmental certification systems in use in the region (LEED, Breeam, HQE, Arz) and their application through case studies. It also aims to present the economic and financial advantages of an environmental approach (differentiation in terms of image, special rate loans, consumption savings, construction quality, return on investment, etc.).
Prerequisite: Climate, Ecology and Architecture (538SE1AS6)

538STSAS6 Sciences, Techniques and Environment: Specialized 4 Cr.

This is an elective course, specialized in the family of "Sciences, Techniques and Environment", which will be the subject of a future detailed definition.

Professional Practice

538GDCAS6 Real Estate and Construction Law 4 Cr.

This course has three objectives. Firstly, it provides general notions of public and private law related to the profession (real estate, urban planning, co-ownership, public markets, etc.). Secondly, it explains the principles and details of the Lebanese construction law, which defines the urban planning rules related to the shape and surface of buildings. Thirdly, the objective is to explain the technical standards and regulations applicable to the building (fire, disabilities, safety, Unified Technical Documents, etc.).

538GPRAS8 Professional Practice and Ethics 2 Cr.

The objective of this course is to explain the architect's missions, in particular the framework of project management in its different aspects: the phases of the project from design to delivery of the site, the architect's role and legal responsibilities, the various stakeholders in a project, the project management contracts, the role of the Order and its internal procedures, and the creation of a building permit file. This course also addresses the basics related to the management of an architectural agency from simplified angles covering company forms, customer relationship, the accounting and tax aspect, relationships with employees, etc.
The goal is to display professional conduct and ethics when practicing the profession.

538GMPAS9 Project Management 4 Cr.

The objective of this course is to provide basic project management tools both in the study phase and the construction phase. The goal is to familiarize students with task and resource planning, specifications, measurements, contractual documents as well as budget estimation and cost management.

Internships

538GSPAS7 Professional Internship 2 Cr.

This summer internship, lasting a minimum of 8 weeks, should allow students to have their first work experience in the professional world, such as architecture agencies or design offices. It will be the subject of a report and a presentation.

538ANGAS8 English 4 Cr.

This course allows students to have sufficient linguistic knowledge in scientific English.

538ETAAS5 Ethics and Architecture 4 Cr.

The objective of this course is to teach students the principles of ethics in engineering and the relationship among the engineers and with the Order of Engineers and Architects.
Content: A few benchmarks: ethics, morality, professional conduct, law, human rights, conscience, freedom – One or more ethics? According to cultures? Based on values? ethics and spirituality, ethics and religions – Some current questions regarding the person's ethics within society: bioethics in the 21st century – Some current questions in terms of society's ethics in the service of people: social, political, economic, entrepreneurial ethics, relationships between engineers, relationships with the Order of Engineers and Architects.

538RPEAS3 Photographing Space 3 Cr.

The objective of this course is to introduce students to the concepts of photography and allow them to develop visual sensitivity. The course introduces students to the history of analog photography while delving into simple digital photography techniques in black and white and in colors. Depending on availability, work in a darkroom is offered. The course aims to develop a sensitivity to architectural photography, sites, materials and landscapes. It also covers typical digital photo editing tools as well as an introduction to videography.