

Programme Specification

BACHELOR'S DEGREE IN ARCHITECTURE



CONTENTS

1. PROGRAMME DETAILS	5
1.1. Degree Title	5
1.2. Centre	5
1.3. Level	5
1.4. ECTS	5
1.5. Location	5
1.14. Launch Date	5
2. PROFESSIONAL COMPETENCES	6
2.1. Transversal/general competences of the degree	6
2.2. Specific competences of the degree	7
3. CURRICULUM	9
3.1. Curriculum (by academic year)	9
3.3. Elective Subjects	10
4. CONTENTS	11
4.1. Module 1 – Foundation	11
4.1.1 Mathematical foundations in architecture I	11
4.1.2 Mathematical foundations in architecture II	12
4.1.3 Physical principles in architecture	13
4.1.4 Digital Tools	14
4.1.5 Geometry I	15
4.1.6 Geometry II	16
4.1.7 Analysis of architectural forms I	17
4.1.8 Analysis of architectural forms II	18
4.1.9 Architectural expression I	19
4.1.10 Architectural expression II	20
4.2. Module 2 – Technical	21
4.2.1 Construction I	21
4.2.2 Construction II	22
4.2.3 Construction III	23
4.2.4 Construction IV	24
4.2.5 Construction V	25

4.2.6 Construction VI	26
4.2.7 Structures I	27
4.2.8 Structures II	28
4.2.9 Structures III	29
4.2.10 Structures IV	30
4.2.11 Installations I.....	31
4.2.12 Installations II.....	32
4.2.13 Installations III.....	33
4.2.14 Ethics	34
4.2.15 Professional Organisations	35
4.2.16 Technical practical work.....	36
4.3. Module 3 – Project - based.....	37
4.3.1 Projects I	38
4.3.2 Projects II.....	38
4.3.3 Projects III.....	39
4.3.4 Projects IV	40
4.3.5 Projects V	41
4.3.6 Projects VI	42
4.3.7 Projects VII.....	43
4.3.8 Projects VIII.....	44
4.3.9 Urban development I	45
4.3.10 Urban development II	46
4.3.11 Urban development III	47
4.3.12 Urban development IV	48
4.3.13 Urban development V	49
4.3.14 Urban development VI	50
4.3.15 Architectural culture and theory I	51
4.3.16 Architectural culture and theory II	52
4.3.17 Architectural culture and theory III.....	53
4.3.18 Architectural culture and theory IV	54
4.3.19 Architectural culture and theory V	55
4.3.20 Architectural culture and theory VI	56
4.3.21 Civic humanism	57

4.4.Module 4 – Nuclear	58
4.4.1 Integration I	58
4.4.2 Integration II	59
4.4.3 Integration III	60
4.4.7 Final Degree Project.....	61
4.5. Pathway 1: Architecture design	62
4.5.1 Advanced integration Integrated vertical workshop for achitecture amd urban development	62
4.5.2 Technical English for architects	63
4.5.3 Open Classroom : Multi-disciplinary training in architecture	64
4.5.4 Research unit and knowledge transfer in architecture	65
4.5.5 Soil, geotechnical and foundation mechanics	66
4.5.6 Special structures, large span models and tall buildings	67
4.5.7 Energy and services; efficiency and sustainability in architectural constructions	68
4.5.8 Legal and forensic architecture; measurements, budgets, reports and valuations ...	69
4.6. Pathway 2: Urban Design	70
4.6.1 Advanced integration Integrated vertical workshop for architecture and urban development	70
4.6.2 Technical English for architects	71
4.6.3 Open Classroom : Multi - disciplinary training in architecture	72
4.6.4 Research unit and knowledge transfer in architecture	73
4.6.5 Aesthetics and thought: Theory of ideas applied to design and planning in Urban development and architecture	74
4.6.6 Social action and responsibility in urban development and architecture	75
4.6.7 Territory, city and lanscape. From urban morphologies to contemporay housing	76
4.6.8 Study, plan and intervention in the historic-artistic heritage.....	77

CONTENTS

OVERVIEW

1.1. Degree title

Graduate in Architecture by San Jorge University

1.2. Centre

School of Architecture and Technology (EARTE) at San Jorge University.

Affiliated Centre: CESUGA (Centro de Estudios Superiores Universitarios de Galicia).

1.3. Level:

UNDERGRADUATE

1.4. ECTS Credits

300 ECTS

1.5. Location

Villanueva de Gállego University Campus.

1.6. Launch date

2009 at San Jorge University.

2015 in CESUGA.

2 Professional competences

2.1 Transversal/general competences of the degree

G1: Effectively use language skills to express views and formulate arguments both orally and in writing Ability to express opinions and propose arguments effectively both orally and in writing in student's native language and English.

G2: Ability to resolve problems and make decisions throughout their lifetime and choose professional and educational pathways independently.

G3: Ability for autonomous learning and self-criticism.

G4: Ability to transfer the knowledge acquired in practical work and skills to the field of work.

G5: Demonstrate creativity, independence of thought, autonomy.

G6: Demonstrate critical and analytical ability to conventional approaches of the discipline

G7: Demonstrate capacity for innovation, creativity and initiative.

G8: Incorporate social and humanistic knowledge to an all-encompassing university education.

G9: Capacity of developing values such as solidarity, multiculturalism, equality, social commitment, respect, diversity, integrity, universal accessibility, among other values that are unique to a culture of peace and democratic values.

G10: Formulate proposals for social transformation from a critical and constructive point of view.

G11: Ability to act, make decisions and take initiatives based on their own convictions and ethical behaviour.

G12: Knowledge of culture and society as a pillar of human reality.

G13: Knowledge of ethical commitment that leads to respect for the dignity of persons.

G14: Knowledge of the methods and procedures of democratic societies in the defence of fundamental rights of the person.

2.2 Specific competences of the degree

E1: Ability to: Apply the graphic procedures to the representation of spaces and objects (T); Design and represent the visual attributes of objects and master proportion and drawing techniques, including computer-based techniques (T).

E2: Knowledge adapted and applied to architecture and urbanism of: The spatial representation systems; Analysis and theory of form and laws of visual perception; The metric and projective geometry; Graphic survey techniques in all its phases, from drawing notes to scientific restitution. The principles of general mechanics, statics, the geometry of masses and vector and tensor fields; The principles of thermodynamics, acoustics and optics; The principles of fluid, hydraulics, electricity and electromagnetism mechanics; the basis of topography and mapping and terrain modification techniques.

E3: Knowledge applied to: Numeracy, analytical and differential geometry and algebraic methods.

E4: Ability to conceive, calculate, design, integrate into buildings and urban units and execute: Building structures (T); Interior division systems, carpentry, stairways and other finished work (T); Locking systems, roof and other structural work (T); Foundation Solutions (T); Supply facilities, water treatment and disposal, heating and air conditioning (T)

E5: Ability to: Apply technical and construction standards; Maintain building structures, foundation and civil works; Conserve the finished work; Evaluate the project.

E6: Capacity to Preserve the structural work; Plan building and urban transformation facilities and power supply, audiovisual communication, acoustic conditioning and artificial lighting; Conserve facilities.

E7: Adequate knowledge of: Solid mechanics of continuous media and soil, as well as plastic, elastic and strength of materials of heavy works; Conventional building systems and their pathology; The physical and chemical characteristics, production procedures, pathology and use of building materials; Industrialised building systems.

E8: Knowledge of: Ethics, collegiate organisations, professional structure and civil liability; Administrative and professional management procedures; The organisation of professional offices; Measurement, expert and assessment methods; Health and safety at work; The management and real estate management.

E9: Suitability for design, practice and development of: Basic execution projects, sketches and drafts (T); Urban Projects (T); Construction management (T).

E10: Ability to: Develop functional programmes of buildings and urban spaces; Intervene in and conserve, restore and rehabilitate the built heritage (T); Remove architectural barriers (T); Undertake architectural criticism; Solve the passive environmental conditioning, including thermal and acoustic insulation, climate control, energy efficiency and natural lighting (T); Catalogue built and urban heritage and plan its protection.

E11: Capacity to Perform safety projects, evacuation and protection properties (T); Compose civil engineering projects (T); Design and execute urban layouts and development projects, gardening and landscape (T); Apply standards and building regulations; Develop environmental, landscape and correction of environmental impacts studies(T).

E12: Adequate knowledge of: General theories of form, composition and architectural types; The general history of architecture; The methods of studying the processes of symbolisation, practical functions and ergonomics; The methods to study social needs, quality of life, habitability and basic housing programmes; Ecology, sustainability and the principles of conservation of energy and environmental resources; Architectural, urban and landscape traditions of Western culture, as well as their technical, climatic, economic, social and

ideological foundations; Aesthetics and theory and history of fine arts and applied arts; The relationship between cultural patterns and social responsibilities of the architect; The bases of vernacular architecture; Sociology, theory, economics and urban history; The methodological foundations of urban planning and territorial and metropolitan management; Drafting mechanisms and management of urban plans at any scale.

E13: Knowledge of: Civil, administrative, urban laws of the building industry and the professional performance; Feasibility analysis and supervision and coordination of integrated projects; The real estate appraisal.

E14: Once all the credits of the curriculum are obtained, the presentation and defence of an original project individually, before a university tribunal which will include at least one member suggested by the professional organisations. The assignment will consist of a comprehensive architectural project of a professional nature in which all the skills acquired in the degree are put into practice to the point of demonstrating proficiency to determine the complete execution of the construction project, in compliance with the applicable technical and administrative regulations.

3. Curriculum

Curriculum (by academic year)

Subject	Type (CORE) / OB (COMPULSORY) / OP	Semester	Credits ECTS
FIRST YEAR Introduction USJ 2009-10, CESGUA 2015-16			
Mathematical foundations in architecture I	MB	I	6
Geometry I	MB	I	6
Architectural expression I	MB	I	6
Analysis of architectural forms I	MB	I	6
Physical principles in architecture	MB	Annual	6
Digital tools	MB	Annual	6
Mathematical foundation in architecture II	MB	II	6
Geometry II	MB	II	6
Architectural expression II	MB	II	6
Analysis of architectural forms II	MB	II	6
			60
SECOND YEAR Introduction USJ 2010-11, CESGUA 2016-17			
Construction I	OB	III	3
Structures I	OB	III	3
Installations I	OB	III	6
Architectural culture and theory I	OB	III	6
Projects I	OB	III	6
Urban development I	OB	III	3
Integration I	OB	Annual	6
Construction II	OB	IV	3
Structures II	OB	IV	3
Civic humanism	OB	IV	6
Architectural culture and theory II	OB	IV	6
Project II	OB	IV	6
Urban development II	OB	IV	3
			60
THIRD YEAR Introduction USJ 2011-12, CESGUA 2017-18			
Construction III	OB	V	6
Structures III	OB	V	3
Installations II	OB	V	3
Architectural culture and theory III	OB	V	3
Projects III	OB	V	9
Urban development III	OB	V	3
Integration II	OB	Annual	6
Construction IV	OB	VI	6
Structures IV	OB	VI	3
Installations III	OB	VI	3
Urban development IV	OB	VI	3
Projects IV	OB	VI	9
Architectural culture and theory IV	OB	VI	3
			60
FIFTH YEAR Introduction USJ 2012-13, CESGUA 2018-19			
Construction V	OB	VII	6
Professional organisations	OB	VII	6
Architectural culture and theory V	OB	VII	3
Projects V	OB	VII	9
Urban development V	OB	VII	3
Integration III	OB	Annual	6
Construction VI	OB	VIII	6
Ethics	OB	VIII	6
Urban development VI	OB	VIII	3
Projects VI	OB	VIII	9
Architectural culture and theory VI	OB	VIII	3
			60

FOURTH YEAR Introduction USJ 2013-14, CESGUA 2019-20

Projects VIII	OB	IX	6
Route 1: Architecture design*	OP	IX	24
Route 2: Urban design*	OP	IX	24
Projects VIII	OB	X	12
Technical work experience	OB	X	12
Final degree project	OB	X	6
			60

*Students can choose between pathways 1 and 2

Total 300

2.3 Elective subjects

Modules	Subject	(CORE) / OB (COMPULSORY) / OP	Semester	Credits ECTS
Pathway 1: Architecture design*	Advanced integration: integrated vertical workshop for architecture and urban development	OP	IX	3
	Technical English for architects	OP	IX	3
	Open classroom: Multi-disciplinary training in architecture	OP	IX	3
	Research unit and knowledge transfer in architecture	OP	IX	3
	Soil, geotechnical and foundation mechanics.	OP	IX	3
	Special structures: Large span models and tall buildings	OP	IX	3
	Energy and services: efficiency and sustainability in architectural constructions	OP	IX	3
	Legal and forensic architecture: measurements, budgets, reports and valuations.	OP	IX	3
Pathway 2: Urban design*	Advanced integration: integrated vertical workshop for architecture and urban development	OP	IX	3
	Technical English for architects	OP	IX	3
	Open classroom: Multi-disciplinary training in architecture	OP	IX	3
	Research unit and knowledge transfer in architecture	OP	IX	3
	Theory of ideas applied to design and planning in urban development and architecture	OP	IX	3
	Social action and responsibility in urban development and architecture	OP	IX	3
	Territory, city and landscape: From urban morphologies to contemporary housing	OP	IX	3
	Study, plan and intervention in the historic-artistic heritage	OP	IX	3

*Students can choose between pathways 1 and 2

The student must choose one of the two pathways.

The student will not be able to enrol in the subject(s) of subsequent years until they have passed the previous years.

SPECIAL SUBJECTS

The student cannot enrol in the SPECIAL subject(s) if they have not enrolled in the PREREQUISITE in previous years or in the same year.

4 CONTENTS

4.1 Module 1 - Foundation

Name of module: MODULE 1: FOUNDATION	ECTS Credits: 60
--	----------------------------

Subject 1: Mathematical foundations in architecture I

ECTS Credits: 6

Character: Core

Description: This subject serves as an introduction to the instruments that will be used later in other subjects, for example physics, installations and structures. The subject covers the foundations of differential and integral calculus in one and several variables which are necessary to work in the profession.

Mathematical foundations in architecture: applied calculus and algebra
Algebra.

Numerical calculation. Differential equations. Finite element method. Statistics.

Learning outcomes:

After completing this subject, students will be able to:

- Calculate limits of a function of a variable
- Interpret the concept of the derivative of a function at a point, the lateral derivative and the derivative function and calculate, using derivation rules, derivatives of functions of a real variable, both first-order and higher-order, using the chain rule to derive composite functions.
- Determine the approximate graph of a function of one variable by applying the results of domain analysis, intercepts, asymptotes, monotony, extremes, concavity and inflection points.
- Calculate indefinite and definite integrals using tables with the basic integration formulas and methods of substitution, integration by parts and rational fractions.
- Interpret the properties of the definite integral and the corresponding theorems: fundamental theorem of calculus, the mean value theorem and the change of variables
- Calculate partial derivatives of the first order and higher-order functions of several variables and their total differential, the derivatives of composite functions through the chain rule and the derivatives of functions defined implicitly by one or several equations.
- Formulate and solve optimisation problems using free or conditional ends as appropriate, using the Lagrange multiplier for the latter.
- Calculate double, triple, line and surface integrals. Use the coordinate transformation to simplify the calculation of double and triple integrals.
- Interpret the theorems of Green, Stokes and divergence and their consequences and use in the calculation of line and surface integrals.

Use the concepts, theorems and properties of integral calculus for modelling and solving geometric, physical and/or problems related to the speciality.

Subject 2: Mathematical foundation in architecture II

ECTS Credits: 6

Character: Core

Description: This subject serves as an introduction to the instruments that will be used later in other subjects, for example physics, installations and structures. The subject covers the foundations of differential and integral calculus in one and several variables which are necessary to work in the profession.

Mathematical foundations in architecture: applied calculus and algebra
Algebra.

Algebra. Analytical, metric and differential geometry

Learning outcomes:

After completing this subject, students will be able to:

- Apply the concepts of space and finite dimensional subspace, their bases, linear mappings between vector spaces and their matricial representation. Mathematics Foundations for Architecture: applied calculation and algebra
- Know how to interpret the linear equations in the context of linear mappings between vector spaces.
- Understand the concept of vector and self-value, geometric interpretation and determination.
- Know how to manage a symbolic calculation computer program and apply the theoretical knowledge acquired in linear algebra
- Identify and classify an ordinary differential equation by their type in first order and first degree. Use analytical methods to obtain the general solution of a differential equation of the above types and particular solutions from given initial conditions.
- Get the general solution of a linear differential equation of order "n" with constant homogeneous coefficients. Obtain a particular solution from given initial conditions.
- Integrate and collaborate actively in achieving common goals in a group environment

Subject 3: Physical principles in architecture

ECTS Credits: 6

Character: Core

Description: The physical principles make up the basic pillars for understanding phenomena of a mechanical, thermal and electromagnetic nature. On the other hand, they enhance the development of a trained, deep and coherent thought that has a real educational value for students as future professionals. For all these reasons, they are important in their own right and also they also lay foundations for further study of scientific and technical fields such as Mechanics, Materials Science, Structures, Construction, etc.

Constructive work requires the study of multiple objects, generically called "structures"; on one hand the equilibrium conditions are applied to them and on the other their deformations are analysed as well as possible failures. The statics of rigid bodies and the strength of materials will therefore be the key themes of the course. In addition, mechanical oscillations will provide the response of such objects to the action of forces that deviate from the equilibrium conditions.

The static and dynamic of fluids will be applied to the behaviour of channelling in installations. With Thermodynamics, the thermal expansion can be analysed and it lead to the design of more energy efficient buildings. The basic principles of sound waves and light are related to the levels of soundproofing and lighting in buildings. Finally, the principles of electricity will allow students to understand and optimise the electrical installations of buildings.

Learning outcomes:

After completing this subject, students will be able to:

- Calculate the forces and moments acting on a system or calculate magnitudes-distances, angles-related with your situation of balance. Calculate the support reactions of a structural element.
- Solve simple plane trusses using the method of joints and method of sections. Distinguish and predict tensile and understanding efforts in its entirety.
- Draw diagrams of shear forces and bending moments of loaded structural elements
- Calculate maximum permissible load situations in response to the resistance of the materials used. Predict the distortions that loaded elements have.
- Know and understand the fundamentals of Fluid Mechanics. Calculate the pressures generated forces by balanced fluids. Solve simple Fluid Dynamics problems.
- Know and understand the fundamentals of Thermodynamics, especially in areas related to heat transfer. Perform simple Calorimetric calculations.

Subject 4: Digital tools

ECTS Credits: 6

Character: Core

Description: Assuming that the use of IT tools is a necessity and a reality in the work of an architectural firm, this subject is a contextualisation of the use of digital tools in the context of architecture. It aims to provide students with the knowledge and understanding of the basic concepts and tools that allow an optimal response to the work of the architect in its broadest term (covering concepts such as writing, calculating, thinking, managing, drawing, planning the layout and building) and the development of their own criteria in terms of the relationship with these tools.

Learning outcomes:

After completing this subject, students will be able to:

- Contextualise using digital tools in architecture
- Develop own judgement in terms of the choice of digital tools to use
- Develop a responsible attitude towards the use and acquisition of digital tools
- Use with ease digital tools necessary for the development of the profession
- Work in a group

Subject 5: Geometry I

ECTS Credits: 6

Character: Core

Description: The rules determined by the Metric and Projective Geometry are the cornerstones of initial apprehension of the architectural space. This is why Geometry I uses the content of these universal sciences as a reference for learning, so that from the direct application to problems of an architectural nature, the student understands the space as well as the attitudes and skills necessary for handling and transforming the space.

Preparation is based on manual techniques of graphic erection, where the classic tools of Descriptive Geometry define the principles of theoretical development that will solve the specific problems.

Geometry I will be the foundation for Geometry II, and also will support other basic vocational training for any architect, such as is the case of Analysis of architectural forms I, Analysis of architectural forms II, Architectural expression I, Architectural expression II, and subsequently the different subjects related to the architectural project.

Learning outcomes:

After completing this subject, students will be able to:

- Have the skills to apply graphics to the representation of spaces and objects.
- Design and represent the visual attributes of objects and master proportion and drawing techniques.
- Sufficient knowledge applied to architecture spatial representation systems, metric and projective geometry.
- Master languages aimed at understanding and manipulation of geometric space applied to Three-dimensional understanding of the architectural objects.
- Understand and use geometric primitives (quadrics polyhedra and surfaces) as essential for the construction of space and objects used in architecture.
- Develop possible manipulations of space and objects from formal resemblance to the basic geometric primitives

Subject 6: Geometry II

ECTS Credits: 6

Character: Core

Description: The fundamental task of the architect is to design spaces. To physically construct the imaginary, accurate scale drawings are required with a clear metric definition. In Geometry I students learn that by representation rules, they can draw three-dimensional objects in two-dimensional mediums, although the process is laborious and the physical limitations of paper and pencil affect the accuracy. In Geometry II, the traditional medium is substituted with digital tools. The aim is to draw directly on two-dimensional projection from digital constructions, that is, from planned models from the computer. The computer is a tool that makes it possible to manufacture a virtual object as if we were executing it in full-scale space. The design takes second term as we it will be inherently provided through the use of digital tools.

Learning outcomes:

After completing this subject, students will be able to:

- Construct simple geometric shapes using computer methods.
- Construct complex geometric shapes using computer methods.
- Make your parallel and conical projections.
- Program them directly into virtual reality for use on the web.
- Make simple lisp programs to make complex shapes in CAD and virtual reality studying their generation rules.

Subject 7: Analysis of architectural forms I

ECTS Credits: 6

Character: Core

Description: Analysis of architectural forms I is part of the block of subjects that are an introduction to the architectural project, which is a specific skill of a professional architect and a characteristic attribute of this professional group. The practical nature of the subject is based mainly on the development of graphic and expository skills of the trainee. Along with the subjects Analysis of architectural forms II, Architectural expression I, Architectural expression II, Geometry I and Geometry II, all in the first year, it complements and provides an introduction to the successive courses of Projects and urban development in subsequent years. Analysis of forms I is a graphical and intellectual training course scheduled in the first half of the Degree of Architecture. Its aim is for the student to begin to manage ideas and forms of Architecture considering that the subject is the student's first contact with these issues. Thus, the course aims to achieve an introductory, growing and gradual insight into basic questions of architecture that will expand in terms of complexity to be continued in the course of Analysis of forms II and successive courses in the Degree. Paradigmatic objects and architectures of the History of art and Architecture are used as a study focus from which the core values of architectural production such as are the shape, matter, space, scale or geometry can be analysed. This allows students to understand the processes that have led to their construction to extract from them the lessons that have been useful for their own production, in other words, the student begins to "read and write" architecture.

Learning outcomes:

After completing this subject, students will be able to:

- Apply its synthetic-analytical ability to solve problems
- Teamwork
- Understand the languages inherent in architecture
- Master graphic and plastic expression techniques intended for the analysis and understanding of the architectural.
- Explore understanding strategies, control and management of architectural spaces
- Apply communication strategies through architecture
- Understand perception strategies and sensory transmission of objects and architectural spaces
- Perform simple tasks related to the development of architectural projects

Subject 8: Analysis of architectural forms II

ECTS Credits: 6

Character: Core

Description: Analysis of architectural forms II is part of the block of subjects that are an introduction to the architectural project, which is a specific skill of a professional architect and a characteristic attribute of this professional group.

The practical nature of the subject is based mainly on the development of graphic and expository skills of the trainee. Along with the subjects Analysis of architectural forms II, Architectural expression I, Architectural expression II, Geometry I and Geometry II, all in the first year, it complements and provides an introduction to the successive courses of Projects and urban development in subsequent years. The subject of Analysis of Forms II is a graphical and intellectual training course scheduled in the first half of the Degree of Architecture. Its aim is for the student to begin to manage ideas and forms of Architecture considering that the subject is the student's first contact with these issues. Thus, the subject aims to achieve an introductory, growing and gradual insight into basic questions of architecture that will expand in terms of complexity to be continued in subsequent courses of the Degree. Paradigmatic objects and architectures of the History of Art and Architecture are used as a study focus from which the core values of architectural production such as are the shape, matter, space, scale or geometry can be analysed. This allow students to understand the processes that have led to their construction to extract from them the lessons that have been useful for their own production, in other words, the student begins to "read and write" architecture.

Learning outcomes:

After completing this subject, students will be able to:

- Apply its synthetic-analytical ability to solve problems
- Teamwork
- Understand the languages inherent in architecture
- Use graphic and plastic expression techniques intended for the analysis and understanding of the architecture and the public space.
- Explore understanding strategies, control and management of architectural spaces
- Apply communication strategies through architecture
- Understand perception strategies and sensory transmission of objects and architectural spaces
- Perform simple tasks related to the development of architectural projects
- Use mechanisms and intellectual/procedural tools to train the students in the field of ideation and architectural proposition

Subject 9: Architectural expression I

ECTS Credits: 6

Character: Core

Description: Drawing is having to express three or more dimensions in a support that only has two. The subject Architectural expression I is presented as a first approximation, both theoretical and practical, to the overall design and architectural events in particular, through systems, procedures and graphical techniques. The subject is within the block of subjects that are an introduction to the architectural project, which is a specific skill of a professional architect and a characteristic attribute of this professional group. Its study and learning cannot be separated from the rest of the first year courses, in particular Architectural expression II, Analysis of architectural forms I, Analysis of architectural forms II, Geometry I and Geometry II.

Architectural expression I, which is continued in the second semester with Architectural expression II, is an eminently practical subject. Its main purpose is for students to acquire the skills to express graphically the architectural idea, from observation and critical analysis. This subject is not just a "drawing class", but its application as a material expression of thought.

Arguably the drawing will be taken as a thread of the subject, using it as communication and expression of a particular architectural graphic language. Each era and style has its own language. Architectural expression II is also a communicational subject. Through signs, signals and symbols the relationship between the sender and receiver of the graphic message will be explained to configure communication in architectural terms. Using models with a high architectural or formal value will present the student with different ways of understanding the relationship between architectural design and graphics, always establishing consistency between idea and graphical method, including graphic expression and content.

Learning outcomes:

After completing this subject, students will be able to:

- Understand the graphic language of two and three dimensions. Graphic sign and scale. Introduction to the criticism of architecture.
- Interpret the graphic signs, scales and architectural processes. Introduction to the criticism of architecture.
- Understand formal perception. Point, line, plane and volume. Representations of forms. Textures. Knowledge and expression of formal relationship.
- Master the spatial description. Graphic expression and communication. Representation systems. Axonometric and conical perspective. Knowledge of the historical value of the model and its cultural impact. Expression of exterior space.
- Understand the relationship between context and architecture. Communication and landscape. Representation of the landscape. Concepts of here and there.

Subject 10: Architectural expression II

ECTS Credits: 6

Character: Core

Description: Architectural expression II is within the block of subjects that are an introduction to the architectural project, which is a specific competence of a professional architect and a characteristic attribute of this professional group. Its study and learning cannot be separated from the rest of first year courses, especially Architectural expression I, Analysis of architectural forms I, Analysis of architectural forms II, Geometry I and Geometry II. Architectural expression II is designed as a continuation of Architectural expression I, following the sequential evolution began in the first semester. In this sense, it is a subject that works with several mediums that can express an architectural idea. It is fundamentally an instrumental subject but which expresses its willingness to associate graphic expression with intellectual process. Drawing and other forms of expression are used in its different dimensions. On the one hand the analytical aspect and critical thinking is developed, and secondly special emphasis is placed on the direct connection that drawing has with thought, that is, the hand that thinks.

Learning outcomes:

After completing this subject, students will be able to:

- Understand the graphic language of two and three dimensions.
- Know, assimilate and differentiate various systems and graphical methods of expression. Have critical capacity.
- Understand the laws of light. Acquisition of shading techniques.
- Understand the colour theory. Colour acquisition techniques.
- Understand various narrative graphic processes.
- Complement graphics systems with digital techniques.
- Perform work with coherence and rigour.

4.2 Module 2 – Technical

Name of module: MODULE 2: TECHNICAL	ECTS Credits: 78
---	----------------------------

Subject 1: Construction I

ECTS Credits: 3

Character: Compulsory

Description: Recognise and Understand.

Knowledge of construction as a physical support of architecture taking always the design as a reference. By providing students with a framework for understanding and managing the knowledge of subsequent courses on Construction.

Architectural principles of building. Adjusting space. Gravitational force. Adapting to the environment: water, heat and cold, light, contamination and noise Integrity: safety, fire, transition of time.

Learning outcomes:

After completing this subject, students will be able to:

- Manage the general concepts of architectural building.
- Understand the basic terms related to construction materials.
- Read the construction details and know their foundation and utility.
- Understand and interpret the concepts of constructive habitability and conditioning: water, cold, heat, pollution, noise, sunshine, fire and air.
- Understand and interpret the concept of time in architectural constructions.
- Manage production techniques, constructive practical reason and aesthetic development models.

Subject 2: Construction II

ECTS Credits: 3

Character: Compulsory

Description: Recognise and Understand.

Continuation of Construction I in terms of objectives and teaching methodology.

Exterior elements. Structure as a unit: vertical, horizontal elements. Interior partitioning.

Interior cladding. Stairs. Building's shell. Elements of the façade. Roofs.

Learning outcomes:

After completing this subject, students will be able to:

- Manage the general concepts of architectural building.
- Understand the basic terms related to construction materials.
- Read the construction details and know their foundation and utility.
- Understand, interpret and manage vertical building elements: Containment, fences, screens, woodlands, fences, walls, partitions and horizontal continuous and discontinuous coatings.
- Understand, interpret and manage horizontal construction elements: beams, slabs, roofs, floors, ceilings, horizontal continuous and discontinuous coatings, urbanisation and landscaping.
- Understand, interpret and handle the concepts of structural safety. Dimensioning and construction models both global and detailed.
- Understand, interpret and handle the concepts relating to the resolution of flat, sloped or mixed roofs. Both global and detailed building models.

Subject 3: Construction III

ECTS Credits: 6

Character: Compulsory

Description: Learn and Design/Propose.

Materials as generators of form: Materials I

Construction Materials: their historical evolution. Properties and behaviour of these materials. Compressive load bearing systems: walls, arches, vaults and domes. Basic materials of structural systems: natural, stone, artificial stone and binders. Structural systems of walls. Floors and foundations. Stone factories. Brick factories. Lightened slab factories: concrete and ceramic. Pathologies of the factory buildings. Other techniques and materials: sustainable architecture.

Learning outcomes:

After completing this subject, students will be able to:

- Manage the general concepts of architectural building.
- Understand the basic terms related to construction materials.
- Read the construction details and know their foundation and utility.
- Skilfully handle the tools necessary for the comprehensive definition of the execution project.
- Understand, interpret and handle the concepts of compressive load bearing systems; their foundations and historical development.
- Understand, interpret and handle the concepts of basic materials for the construction of structural works
- Understand, interpret and handle the concepts of active mass, actively and active vector structural systems.
- Understand, interpret and handle the concepts of foundations and their relationship to the soil and subsoil.
- Understand, interpret and handle the concepts of sustainable construction, energy efficiency and building processes
- Understand, interpret and handle the concepts of intervention in buildings affected by pathologies

Subject 4: Construction IV

ECTS Credits: 6

Character: Compulsory

Description: Learn and Design/Propose.

Materials as generators of form: Materials II

Construction Materials: their historical evolution. Properties and behaviour of these materials.

Concrete construction. Steel construction. Wood construction. Other materials.

Learning outcomes:

After completing this subject, students will be able to:

- Manage the general concepts of architectural building.
- Understand the basic terms related to construction materials.
- Read the construction details and know their foundation and utility.
- Skilfully handle the tools necessary for the comprehensive definition of the execution project.
- Understand, interpret and handle the concepts of related to building with reinforced concrete.
- Develop and handle details and solutions resolved with construction systems using reinforced concrete.
- Understand, interpret and handle the concepts of related to building with steel.
- Develop and handle details and construction systems solutions using steel.
- Understand, interpret and handle the concepts of related to building with wood.
- Develop and handle details and solutions resolved with construction systems using wood.
- Understand, interpret and handle the concepts of construction with plastics, alloys, ceramics, stone and concrete reinforced with fiberglass.
- Develop and manipulate details and building systems solutions using plastics, alloys, ceramics, stone and concrete reinforced with fiberglass.

Subject 5: Construction V

ECTS Credits: 6

Character: Compulsory

Description: Design and Build.

Structuring the thinking from the architectural objectives of the project to the Design details, providing students with the technological knowledge necessary to build the architectural spaces designed. Roofs and their features. Façades. Roofs. Interior partitions. Interior cladding. Walls, ceilings and flooring. Exterior finishes. The execution project, construction documents.

Learning outcomes:

After completing this subject, students will be able to:

- Manage the general concepts of architectural building.
- Understand the basic terms related to construction materials.
- Read the construction details and know their foundation and utility.
- Skilfully handle the tools necessary for the comprehensive definition of the execution project.
- To be able to choose construction systems and materials to properly resolve an entire building or complex, integrating them with the rest of the material support thereof, and to develop the construction details and Scythian project documentation to the level required for the implementation phase.
- Understand, interpret, manage and manipulate the concepts related to the complex construction of walls and partitions: horizontal and vertical, continuous and discontinuous, outer or inner environment; and critically determine the evaluation of their performance.
- Understand, interpret, manage and manipulate the concepts related to the complex construction of building roofs: flat, sloped or mixed; and critically determine the evaluation of their performance.
- Understand, interpret, manage and manipulate complex concepts related to building façades; and critically determine the evaluation of their performance.
- Understand, interpret, manage and manipulate the concepts related to the complex construction of finishes and coatings: horizontal and vertical, continuous and discontinuous, outer or inner environment; and critically determine the evaluation of their performance.

Subject 6: Construction VI

ECTS Credits: 6

Character: Compulsory

Description: Design and Build.

This subject is structured to complement the teaching taught in Construction V, with a special emphasis on pathology tests systems (façades, roofs) and materials (concrete, brick, wood, steel, etc.) already taught in previous courses and their constructive solutions. Rehabilitation. Industrial production processes.

It will serve as a final learning block, with emphasis on educational aspects taught in Construction V, from complementary perspectives, but with an explicit purpose in the pretence of getting the transmission of knowledge and concerns about students to help them in future practice.

Learning outcomes:

After completing this subject, students will be able to:

- Manage the general concepts of architectural building.
- Understand the basic terms related to construction materials.
- Read the construction details and know their foundation and utility.
- Skilfully handle the tools necessary for the comprehensive definition of the execution project.
- Skilfully handle the concepts of protocols and procedures of architectural restoration, both historical and artistic heritage and buildings affected by pathologies.
- Understand, interpret, manage and manipulate the concepts relating to the compatibility of materials in the implementation process.
- Understand, interpret, manage and manipulate the concepts of pathologies and their possible constructive solutions in brick and stone.
- Understand, interpret, manage and manipulate the concepts of pathologies and possible solutions in reinforced concrete construction.
- Understand, interpret, manage and manipulate the concepts of pathologies and possible constructive steel solutions.
- Understand, interpret, manage and manipulate the concepts of pathologies and possible solutions constructive resolution systems façades.
- Understand, interpret, manage and manipulate the concepts of pathologies and possible solutions constructive resolution systems covered.
- Understand, interpret, manage and manipulate the concepts of pathologies and their possible constructive solutions in structural systems and terrain.
- Understand, interpret, handle and manipulate the concepts related to the energy efficiency of buildings.
- Understand, interpret, handle and manipulate the concepts related to processes of prefabrication and industrialised construction.

Subject 7: Structures I

ECTS Credits: 3

Character: Compulsory

Description: This subject provides students with a basic knowledge of the mechanics of solids and the resistance, plastic and elastic behaviour of the elements of a structure.

It covers the Theory of Elasticity and Resistance of Materials. The main objective of the subject is to enable students to calculate and understand the laws of stress to which a structure is subjected depending on the stresses, as well as the deformity of its elements. Likewise, students will be able to design simple, structural elements.

The subject will enable the student to understand how the various structural elements work, allowing them to analyse the different types of structures. It is the student's first contact with Continuum Mechanics and related technological disciplines. Therefore, it constitutes a fundamental step to understand the subjects related to the study of structures that follow in subsequent courses.

Learning outcomes:

After completing this subject, students will be able to:

- Resolve structural problems applying fundamentals of statics and strength of materials.
- Understand the concept of tension, compression and bending, as well as the effect on structural systems used in buildings.
- Understand the concept of shear and axial bending and torque, as well as the effect on structural systems used in buildings.
- Resolve structural problems relating to the static degree of the structure and understand how to use knots systems and structural links between the different elements that make up a structure.
- Predict and analyse qualitative and quantitative diagrams of shear and bending moments.
- Calculate deformations of structural elements subjected to simple loads using different methods.

Subject 8: Structures II

ECTS Credits: 3

Character: Compulsory

Description: As a continuation to the Resistance of Materials studied in Structures I, this will be complemented by the calculation of deformations by Energy Methods, the topic of instability by buckling will also be addressed.

The study of lattice structures of articulated knots will also be developed.

Rigid knots structures will be studied, by introducing the concept of rigidity and flexibility. The efforts in Translational and intra-translational porticos are determined by iterative methods, Cross method as well as Matrix Methods.

With regard to computer tools, the management of a computer program is explained that allows students to check the efforts obtained manually in the practical activities carried out, and interpret the results of the mechanical calculation.

Learning outcomes:

After completing this subject, students will be able to:

- Understand and know how to apply the principles that define the energy functional conception of architectural structures.
- Resolve structural problems in statically indeterminate models.
- Understand and properly use the fundamental principles of balance against axial compression stresses generated by buckling.
- Use, design and calculate lattice planes of articulated knots systems.
- Use, design and calculate rigid knot structural systems.
- Use fluidly in matrix method used for calculating bars

Subject 9: Structures III

ECTS Credits: 3

Character: Compulsory

Description: This subject provides the student the capacity to implement the project of a reinforced concrete building structure.

Acquisition of knowledge on, structural design, actions of the building, components of reinforced concrete, sizing of sections for service and ultimate limit states and calculation and arrangement of reinforcements.

Exercises related to the theory, preparing reinforcement drawings and the ability to handle calculation and representation software are taught.

Learning outcomes:

After completing this subject, students will be able to:

- Prepare the draft of a Concrete building structure.
- Understand and solve structural issues relating to the stability of architectural constructions with reference to the ultimate and the serviceability limit state.
- Carry out a detailed study of structural and constructive resolution setting different types of forgings used in construction.
- Design, pre-size, calculate and perform the assembly of a reinforced concrete building structure, analysing the results and taking into account compliance with current regulations.
- Apply the necessary knowledge of software for calculating reinforced concrete structures, to contrast with the use of the same the results obtained manually.
- Analyse, understand and solve problems related to shallow foundation systems.
- Analyse, understand and solve problems related to deep foundation systems.

Subject 10: Structures IV

ECTS Credits: 3

Character: Compulsory

Description: Geotechnical properties of foundation soils and the procedures of the field survey will be studied. The different foundation systems and their sizing will be analysed. First of all, the student will learn about the mechanical properties of steel, as well as current legislation on this material. Elastic-plastic analysis will be performed for sizing of sections in beams and buckling supports. The different types of joints will be calculated and studied. The different types and classes of wood are analysed as well as the sizing of sections. Using a computer program, the student will check the efforts obtained manually in practical activities carried out, the results will be interpreted in the mechanical calculation.

Learning outcomes:

After completing this subject, students will be able to:

- Analytically understand the specific features of the main types of existing land in nature.
- Structure procedures and methods for prospecting and recognition of the foundation land.
- Command the fundamental calculation of footings and foundation slabs.
- Manage the fundamental calculation of piles, micro-piles, wells and foundations screens.
- Necessary capacity to carry out the project implementation of a steel building structure.
- Design, pre-size and calculate a steel building structure, analysing the results and taking into account compliance with current regulations.
- Apply the necessary knowledge of software for calculating steel structures, to contrast with the use of the same the results obtained manually.
- Necessary capacity to carry out the project implementation of a wood building structure.
- Design, pre-size and calculate a wood building structure, analysing the results and taking into account compliance with current regulations.
- Apply the necessary knowledge of software for calculating wood structures, to contrast with the use of the same the results obtained manually.

Subject 11: Installations I

ECTS credits: 6

Mandatory character

Description: Once the basic knowledge of physics is acquired, we will proceed to apply them in the different facilities within the buildings to be designed.

Water supply. In this second year course, we will begin by treating the fundamentals of hydraulics, developing urban water supply networks, from their morphology, layout, elements that compose and dimensioning according to current regulations to the distribution of water inside. An approach to domestic hot water facilities will also be carried out.

Sanitation. We will continue with the water evacuation facilities, where the elements that compose them will be defined as well as their calculation. We will finish this second block with an overview of the elements that make up the wastewater treatment stations.

Protection against the fire. An overview of the Fire Protection Regulations will be given, as well as fire protection facilities in terms of extinction, detection, alarm, signaling and lighting.

Combustible gases. Once the Regulations regarding combustible gases have been exposed and the uses of combustible gases in buildings are known, we will carry out a description of urban networks of combustible gases, both for GN and LPG. We will study its morphology and layout, the elements that compose it as well as natural gas or LPG installations in buildings.

Learning outcomes:

At the end of the subject, the student will be able to:

- Work and research autonomously.
- Work and research in groups.
- Know and interpret the current regulations applicable to plumbing installations in the building.
- Know the foundation of mandatory and / or necessary plumbing installations in architectural projects.
- Pre-dimension the mandatory and / or necessary plumbing installations in the architectural projects.
- Know and interpret the current regulations applicable to sanitation facilities in buildings.
- Know the foundation of mandatory and / or necessary sanitation facilities in architectural projects.
- Pre-dimension the mandatory and / or necessary sanitation facilities in architectural projects.
- Know and interpret the current regulations applicable to fire protection facilities in buildings.
- Know the foundation of mandatory and / or necessary fire protection facilities in architectural projects.
- Pre-dimension the mandatory and / or necessary fire protection facilities in architectural projects.
- Know and interpret the current regulations applicable to gas installations in the building.

Subject 12: Installations II

ECTS Credits: 3

Character: Compulsory

Description: Conditioning in buildings. In this third year subject, we will continue the development of installations within buildings.

We will begin by studying the calculation of transmittances and condensations, learning about the catalogue of building elements as well as data sheets to be completed according to the Current Regulations.

Then, we will study the calculation of the thermal load of the building with all that this entails in terms of compliance with health and safety conditions defined by the Regulation in question. To end the subject of Installations II, we will introduce solar thermal and photovoltaic energy in buildings as well as the aim of the basic document of protection against noise, which is to establish rules and procedures to fulfil the basic requirements of protection against noise.

Learning outcomes:

After completing this subject, students will be able to:

- Understand and interpret the applicable Current Regulations to calculate transmittances and condensations.
- Understand and interpret the current regulations applicable to energy efficiency in buildings.
- Understand and interpret the current regulations applicable to the protection against noise in the building.
- Know the basis of mandatory and/or necessary thermal and photovoltaic solar energy in building installations.
- Pre-size mandatory and/or necessary thermal and photovoltaic solar energy in architectural projects.
- Know the foundations of calculating the thermal load of a building.
- Pre-size thermal loads in architectural projects.

Subject 13: Installations III

ECTS Credits: 3

Character: Compulsory

Description: Thermal energy in buildings. This subject will continue covering active conditioning installations, learning about the Regulations relating to such facilities.

We will classify the heating installations, differentiating urban heating networks, centralised networks of buildings and individual installations.

We will study the different heat distribution by hot water and air. Heat generation elements, heat emitters in hot water installations and regulations in heating.

We will conduct an overview of the fundamental concepts of air conditioning systems, differentiating between centralised systems and individual equipment.

There will be a general overview of Geothermal and their applications.

Electric energy in buildings There will be an overview of the elements that make up electrical installations in buildings, starting from the transformation Centres, processes, the interior electrical installations. As well as connection installations and earth installations.

Towards the end of the course we will look at the possibilities of intelligent homes, regarding automation in buildings.

Learning outcomes:

After completing this subject, students will be able to:

- Understand and interpret the current regulations applicable to thermal efficiency in buildings.
- Understand the basis of mandatory and/or necessary thermal energy in building installations.
- Pre-size mandatory and/or necessary Thermal Energy installations in architectural projects.
- Understand the basis of geothermal energy in building installations.
- Understand and interpret the current regulations applicable to electrical energy in buildings.
- Understand the basis of mandatory and/or necessary electrical energy in building installations.
- Pre-size mandatory and/or necessary Electrical Energy installations in architectural projects.
- Understand the basics of home automation energy in building installations.

Subject 14: Ethics

ECTS Credits: 6

Character: Compulsory

Description: Modern architecture is developed around the world on the basis of some general principles: the priority of urban planning on the architectural design; maximum economy in the use of land and construction, in order to solve, if only at a "subsistence level", the housing problem; rigorous rationality of architectural forms, understood as logical deductions (effect) of objective requirements (causes); the systematic use of industrial technology in standardisation, mass prefabrication, i.e., the progressive industrialisation of the production of goods related to everyday life (industrial design), the conception of architecture and the qualified industrial production as determinants of social progress and the democratic education of the community. Within these principles that we can consider as the basic ethics of modern architecture, appear different problems and different directions as a result of the varied objective, social and cultural situations."

From this definition, we will unveil the basics points of architectural ethics and deontology. To do this, we will deal with its similarities with contemporary themes: iconic architecture, sustainability: paradigm shift, new urban growths, architecture of the modern movement and its connection with society and other professional contributions of the new urbanism.

In parallel, directly related, the classical and philosophical concepts are developed that fall within ethics, morality and the individual.

It is intended thereby that the student understands their personal and professional development with complementary study and they occur at the same time and the same level.

Learning outcomes:

After completing this subject, students will be able to:

- Identify, understand and use the basic principles to practice the profession according to the ethical and moral values that are inherent in the activity of the architect.
- Develop their own critical thinking as an architect for use in later professional life
- Have the necessary tools to take consistent decisions in the development of professional activity tools.
- Identify and understand the importance of the social and educational dimension of the actions developed by architects.
- Defend the social and material dignity of individuals and society from the possibilities of discipline.

Subject 15: Professional organisations

ECTS Credits: 6

Character: Compulsory

Description: Professional Organisations is divided into three units, organisation of the profession, planning legislation and practice of the profession, which aim to provide students with the necessary knowledge concerning the professional practice of architecture.

It is devised for students to acquire skills that will help them understand the organisation of the profession and how the various bodies operate, to become familiar with planning legislation and its semiotic and to recognise the various stages of implementation planning, to know how to easily use the basic rules that an architect should take into account and enforce projects as a manager and, finally, be aware of the different paths of professional practice.

Learning outcomes:

After completing this subject, students will be able to:

- Have knowledge of the profession throughout history.
- Understand the professional organisation of exercise of the activity of the architect.
- Acquire the ability to deal with the drafting and processing of an architectural project and subsequent project management.
- Understand the general regulatory framework and basic knowledge of responsibility and safety and health.
- Know about the ways of professional practice and public procurement and valuations.
- Understand the organisation of an architecture studio, professional societies and the participation of the architect in real estate management.

Subject 16: Technical practical work

ECTS Credits: 12

Character: Compulsory

Description: Practical Integration workshop of the technical subjects associated with the study and development of individual cases, as well as field work.

Learning outcomes:

After completing this subject, students will be able to:

- Apply its synthetic-analytical ability to solve problems
- Teamwork
- Solve multidisciplinary tasks.
- Interpret languages inherent in the architecture.
- Manage interrelation procedures of several professional activities.
- Encourage the incorporation in the professional world.

4.1 Module 3 - Project-based

Name of module: MODULE 3: PROJECT-BASED	ECTS Credits: 114
---	-----------------------------

Subject 1: Projects I

ECTS Credits: 6

Character: Compulsory

Description: The subjects Projects I and II start with students carrying out exercises that invite them to trigger their thought process and search for their own way of doing and understanding. In the form of questions and answers to a problem that arises. It is a cumulative learning process of variables that influence the Project's development.

The student's analytical, research and proposal capacity is tested. To do this, thorough analytical work and data collection of all kinds of basic conditions is conducted. Being able to abstract in the quest of a generating idea of the project, developing their own strategies allowing them to understand and manage a process of formalisation, that finally summarises the idea and form of the project as an instrument and final expression of the purposeful proposal.

In Projects I, the exercises focus on the ability to learn through the senses and the perception of each student. Everything around us influences us through light, shadow, colour, dimension etc. Our condition depends on our circumstances of living in a particular space and time. And our attitude of these conditions is unconscious. The starting point is to transfer these reactions to our own conscience, by training our ability to see and perceive everything around us. Working for ourselves, using our hands and entire body. Experiencing and practising with masses, colour, light, shadow, composition, rhythms etc.

Understand the essence and quality of the materials from their inner essence and nature. Understand the concepts and what the vital and natural actions of man mean: walking, sitting, lying, being ... water, earth, sky, sounds, silence etc.

Finally, having a healthy outlook on life to be able to translate it into an architectural language, to their individual human and diverse architecture.

Learning outcomes:

After completing this subject, students will be able to:

- Ask and acquire critical judgement. Acquisition of the habit of understanding what is already known from the perspective of the architect.
- Understand the basic problems of architecture: utility, firmness and beauty.
- Propose an idea of clear and attractive project, and materialising it with logic and emotion. Understanding architecture as a constructed idea.
- Manage the control of intuition, obtaining a proper method of proceeding.
- Perform the preliminary analysis from the immediate reality. Analytical, research and proposal capacity.
- Architecture experience with the five senses. Management of materiality, texture, colour, tectonics.
- Work with the representation of the project.

Subject 2: Projects II

ECTS Credits: 6

Character: Compulsory

Description: The subjects Projects I and II start with students carrying out exercises that invite them to trigger their thought process and search for their own way of doing and understanding. In the form of questions and answers to a problem that arises. It is a cumulative learning process of variables that influence the Project's development.

The student's analytical, research and proposal capacity is tested. To do this, thorough analytical work and data collection of all kinds of basic conditions is conducted. Being able to abstract in the quest of a generating idea of the project, developing their own strategies allowing them to understand and manage a process of formalisation, that finally summarises the idea and form of the project as an instrument and final expression of the purposeful proposal.

In Projects II exercises focus on the dream (abstract and concrete concepts) and the ability and willingness of discovering and way of doing by the student. Their personal expression and creativity. In all projects there is a stage where dreaming new architectural proposals is a must and there is another to meet the most demanding reality.

The user, the programme, the place...are conditions that determine our ways of doing and planning. Concepts such as Learning / Educating and Living / Coexisting / Working

They are conducive to actions of man in his environment and require effective and significant architectural spaces where man is developed in happiness.

Learning outcomes:

After completing this subject, students will be able to:

- Learn to request and acquire critical judgement. Acquisition of the habit of understanding what is already known from the perspective of the architect.
- Understand the basic problems of architecture: utility, firmness and beauty.
- Propose an idea of clear and attractive project, and materialising it with logic and emotion. Understanding architecture as a constructed idea.
- Intuitive control for a proper method of proceeding.
- Perform the preliminary analysis from the immediate reality. Analytical, research and proposal capacity.
- Architecture experience with the five senses. Management of materiality, texture, colour, tectonics.
- Work with the representation of the project.
- Understand the basics of architecture: scale, light, form, function, composition, space, full, empty, structure, proportion, order, program.
- Understand the architectural space from the part that belongs to the earth and the part that is released from it.
- Understand light as an element of space, from constructed physical matter and its gravity.

Subject 3: Projects III

ECTS Credits: 9

Character: Compulsory

Description: Description of Projects I and II.

Make our preferences, our desires and our ideas a reality. Emphasise the need for analysis, reflection and rigour of our proposals through an architectural language and self-criticism, with our decisions towards a certain skill and consistency. Address the realities and constraints of the Location and the Programme as referential values of the creative process. Experiences and accumulative process of knowledge, that allow to reinforce our own way of doing and our strategies, enhancing our skills, resources and project expertise. As well as its expression and visualisation, that must be suggestive because they must be able to explain, show and convince, to be able to make the containing idea of the project visible and convey its emotion. And so the careful completion of work is highly valued.

In Projects III the necessary relationship of architecture with the land is explored, in a natural or rural context, where the dominance of the natural landscape over the artificial landscape of man becomes apparent. Projects III covers small-scale projects and programmes to be addressed by the student in the exercises with some element of suggestion. The location is the starting point of the generation of architectural space.

Learning outcomes:

After completing this subject, students will be able to:

- Formulate critical judgements and self-criticism and its application in the design process.
- Work on the realisation of the very idea of a building, through the knowledge of functional subprogram and its relation to a given space, urban and social environment.
- Develop the different phases of architectural project, adapting to the program scales, man and city.
- Express the architectural project.
- Plan not only based on conceptual, spatial and tectonic factors but also phenomenological, social and urban factors.
- Apply the knowledge derived from the works of great masters of architecture and critics.

Subject 4: Projects IV

ECTS Credits: 9

Character: Compulsory

Description: Description of Projects I and II.

Make our preferences, our desires and our ideas a reality. Emphasise the need for analysis, reflection and rigour of our proposals through an architectural language and self-criticism, with our decisions towards a certain skill and consistency. Address the realities and constraints of the Location and the Programme as referential values of the creative process. Experiences and accumulative process of knowledge, that allow to reinforce our own way of doing and our strategies, enhancing our skills, resources and project expertise. As well as its expression and visualisation, that must be suggestive because they must be able to explain, show and convince, to be able to make the containing idea of the project visible and convey its emotion. Thus, making the careful completion of work highly valued.

In Projects IV, the Programme and the urban context and its relationship with the City are the triggers of the design process and they allow students to create their own process of questions and answers, ranking priorities, demanding what is essential from what is not. Accuracy and decision making, concrete and own, through our own sensibility and our own way of understanding and doing.

Learning outcomes:

After completing this subject, students will be able to:

- Formulate critical judgements and self-criticism and its application in the design process.
- Work on the realisation of the very idea of a building, through the knowledge of functional program and its relation to a given space, urban and social environment.
- Develop the different phases of architectural project, adapting to different scale.
- Express the architectural project.
- Plan not only based on conceptual, spatial and tectonic factors but also phenomenological, social and urban.
- Apply the knowledge derived from the works of great masters of architecture and critics.
- Employ a specific methodology applicable to each of the phases of the project.
- Understand the expression and relationship building, structure and facilities.

Subject 5: Projects V

ECTS Credits: 9

Character: Compulsory

Description: Description of Projects I, II, III and IV.

Attention focuses on the need to show that projects should be achievable dreams, with emphasis on seeking a tangible reality and which can be constructed and embedded within coordinates of a particular space and time that we are experiencing and without choice. Capable of assuming the complexity involved in the architectural project from the initial dream to the most demanding reality, from the trade that will address the creation of spaces and forms, from the integration in the structural design process, construction and facilities with the necessary control systems, dimension, size and scale.

In Projects V, the student confronts complex programmes, beyond a mere superficial relationship of spaces, it responds to spatial needs for the city, the land and man, where their vital action is carried out. The Physical activity related to the body and mind, that our society demands, as well as the most primitive actions in their quest for a place to live, a better space, continue activating sports and domestic projects.

Learning outcomes:

After completing this subject, students will be able to:

- Formulate critical judgements and self-criticism and its application in the design process.
- Finalise the project idea, through the knowledge of its functional and constructive program to meet the most demanding reality.
- Develop the different phases of architectural project, adapting to the scale of the program, the man and his space and time.
- Understand the expression and significance of Architectural Design
- Integrate into the project, knowledge of other complementary materials: Structures, Construction and Facilities.
- Apply the knowledge derived from the works of great masters of architecture
- Dominate the average scale.
- Understand the design process from the values of dimensional control.
- Apply the basic functional rules of discipline.

Subject 6: Projects VI

ECTS Credits: 9

Character: Compulsory

Description: Description of Projects I, II, III and IV.

Attention focuses on the need to show that projects should be achievable dreams, with emphasis on seeking a tangible reality and which can be constructed and embedded within coordinates of a particular space and time that we are experiencing and without choice. Capable of assuming the complexity involved in the architectural project from the initial dream to the most demanding reality, from the trade that will address the creation of spaces and forms, from the integration in the structural design process, construction and facilities with the necessary control systems, dimension, size and scale.

In Projects VI, the museum space, a basis of our history and culture, authentic forums of our time, as well as already built spaces to accommodate and meet potential new ways of being, allow us to reuse them in new vital actions of man, and are fields of experimentation and possible future practice.

Learning outcomes:

After completing this subject, students will be able to:

- Formulate critical judgements and self-criticism and its application in the design process.
- Finalise the project idea, through the knowledge of its functional and constructive program to meet the most demanding reality
- Develop the different phases of architectural project, adapting to the scale of the program, the man and his space and time.
- Understand the expression and significance of Architectural Design
- Integrate into the project, knowledge of other complementary materials: Structures, Construction and Facilities.
- Apply the knowledge derived from the works of great masters of architecture
- Dominate the average scale.
- Understand the design process from the values of dimensional control.
- Apply the basic functional rules of discipline.
- Associate scale changes, strategies and processes in a unique architectural proposal.
- Alter logical processes that lead to the development of new strategies of invention and/or proposition.
- Solve hybrid problems or demands that may be imposed or determined by other disciplines.

Subject 7: Projects VIII

ECTS Credits: 6

Character: Compulsory

Description: Description of Projects I, II, III, IV, V and VI.

Accumulative process of acquired experiences and knowledge and skills that empower students to face the full creative process (program-idea / design -development / construction-result) from their own working method and from their strategies for the challenge of Designing. In this last block, it is necessary to focus on the three questions that the Projects Subject express: What is Architecture? What is Designing? What is the Architectural Fact? and fundamentally in the architectural fact, container of the unit of the generating idea of the plurality of the techniques, the arts and disciplines involved in any integrated and complex process that Architecture represents. The student must assume, from the beginning of development, an integrated view of the process and the overall conformation of the project that is created and that should already be in its genesis. The concepts of Unity such as formal will and Plurality such as multiple partial factors, are not details added to the end. The structure, building, facilities, comfort systems and climate conditioning etc. are part of the process, which is not linear, but recursive, which is fed from the knowledge and lateral or divergent thinking acquired in other degree subjects, are directed towards Integrity and varied architecture.

In Projects VII, requirements, skills and accumulated transverse knowledge are incorporated naturally in the creative process, not just at the suggestion of the idea and they move towards a latent reality and definition of its construction. The proposed exercises contain these requirements and skills that are close to the future professional design work.

Learning outcomes:

After completing this subject, students will be able to:

- Integrate into the project, knowledge of other complementary materials: Structures, Construction and Facilities.
- Dominate at large scale.
- Understand the design process from the values of dimensional control.
- Apply the basic functional rules of discipline.
- Associate scale changes, strategies and processes in a unique architectural proposal.
- Alter logical processes that lead to the development of new strategies of invention and/or proposition.
- Solve hybrid problems or demands that may be imposed or determined by other disciplines.
- Formulate appropriate strategies to relate the concepts of idea/process/ development
- Devise the appropriate strategies to relate the concepts of program/design/build.

Subject 8: Projects VIII

ECTS Credits: 12

Character: Compulsory

Description: Description of Projects I, II, III, IV, V and VI.

Accumulative process of acquired experiences and knowledge and skills that empower students to face the full creative process (program-idea / design -development / construction-result) from their own working method and from their strategies for the challenge of Designing. In this last block, it is necessary to focus on the three questions that the Projects Subject express: What is Architecture? What is Designing? What is the Architectural Fact? and fundamentally in the architectural fact, container of the unit of the generating idea of the plurality of the techniques, the arts and disciplines involved in any integrated and complex process that Architecture represents. The student must assume, from the beginning of development, an integrated view of the process and the overall conformation of the project that is created and that should already be in its genesis. The concepts of Unity such as formal will and Plurality such as multiple partial factors, are not details added to the end. The structure, building, facilities, comfort systems and climate conditioning etc. are part of the process, which is not linear, but recursive, which is fed from the knowledge and lateral or divergent thinking acquired in other degree subjects, are directed towards Integrity and varied architecture.

Projects VIII focuses on transmitting to the student that the project is a yet another stage within what Architecture entails. The student should know that the project is not an end in itself, the end goal is the constructed project. This should not be confused, and students should show that the effort of the drawn project is not the end in this hard, complex task which makes Architecture possible. The projects are born to be constructed, and not as mere exercises, representation games or formal and/or conceptual expression etc. Not even as mere basic projects that the structures, the facilities are incorporated afterwards ... and if possible other techniques. This confuses the sole work of the Architect as distributing spaces and formalising aspects or mere images, and it is others who contribute and incorporate technical data, towards the disintegration of Architecture. The student must understand that designs are made to provide an honest and complete document capable of realising the work under their authority and unequivocal condition, pursuing with absolute clarity that its purpose is none other than the constructed project, perfectly executed as a whole integrated architectural cultural event.

Learning outcomes:

After completing this subject, students will be able to:

- Integrate into the project, knowledge of other complementary materials: Structures, Construction and Facilities.
- Dominate at large scale.
- Understand the design process from the values of dimensional control.
- Apply the basic functional rules of discipline.
- Associate scale changes, strategies and processes in a unique architectural proposal.
- Alter logical processes that lead to the development of new strategies of invention and/or proposition.
- Solve hybrid problems or demands that may be imposed or determined by other disciplines.
- Formulate appropriate strategies to relate the concepts of idea/process/ development
- Devise the appropriate strategies to relate the concepts of program/design/build.
- Direct the processes of creation and execution tasks inherent to the architectural project development.
- Articulate complex processes related to contemporary requests: efficiency, sustainability, heritage, city, territory and landscape.
- Investigate the proposition of new space, functional and business models.
- Reply from the possibilities of architecture to the demands that are demanded from the markets.
- Show leadership/entrepreneurship for the development of effective proposals on the changing needs of individuals and society.

Subject 9: Urban development I

ECTS Credits: 3

Character: Compulsory

Description: The subject Urban development I is an introduction to urban studies of the Degree. It is proposed in order to introduce students to the knowledge of the basic elements of the form of the city through studying their relationships and purposeful analysis: The street, the square, the subdivision and building typology, will be the focus of this analysis, as key elements of fabric configuration and cityscapes. Finally, through the study of the interrelationships generated between these elements and of the most relevant urban processes, it is intended that the student gets to synthesise from a personal vision - the form of the city. Throughout the course of the subject, and in each case and scale of intervention, students should identify opportunities for intervention, critique and make proposals. Practical exercises, aimed at achieving the stated objectives will focus on specific urban realities. The documentary expression of the work will primarily be visual in nature, addressing the issue of architectural drawing to scales of town planning and urban design.

Learning outcomes:

After completing this subject, students will be able to:

- Properly understand the role of the architect in urban planning as a professional potentially required to act on the problems of the city and its territory.
- Understand urban planning and its complex, transversal and multifaceted character.
- A better understanding of the history and theories of urban development and arts, technologies and human sciences, as introductory training for subsequent courses.
- Have the aptitude for analysis of urban space and the shape of the city in order to identify opportunities for intervention, based on knowledge of urban reality. Have the ability to know and convey concepts and fundamental theories of urban development, establish relations between them and the cases under study, and know relevant questions and hypotheses from an urban development point of view
- Be able to cope with complex urban problems from creativity, demonstrating adequate levels of aesthetic and environmental sensitivity, analysis and synthesis resources, oral and written expression, ability to work individually and as a team, self-commitment, reasoning and self-criticism ability, order and rigour.
- Have knowledge -at an introductory level- urban planning level, legislation applicable to urban development, the different types of plans and spatial planning instruments.

Subject 10: Urban development II

ECTS Credits: 3

Character: Compulsory

Description: Urban Development II is an introduction to the practice of the architect in urban planning at a territorial scale. First, it is suggested as a process of approximation to the physical reality of the terrain and the conditions that determine its form, function and dynamics. All this in order to, at a later stage, understand the logic of the processes of occupation and land use by the human being and how these processes of occupation are conditioned by the environment and in turn, reconfigure and constitute it. Ultimately, it is intended that students come to understand the dialectic relationship of the natural environment -man - urban environment- infrastructure. Simultaneously with the communication of theoretical knowledge, students will carry out through group and individual practical work, the analysis of the various elements that shape the land, as well as relations between it and the form and configuration of the city, detecting its characteristic elements and their interrelationships and from that analysis, outline a proposal for intervention. The documentary expression of the work will be mainly graphical, but must be based on a theoretical reflection that will be discussed verbally and in writing. The works will be exhibited publicly, encouraging participation and discussion.

Learning outcomes:

After completing this subject, students will be able to:

- Distinguish keys territory as support and determinants of various human activities, especially as regards the construction of infrastructure and the creation and growth of cities.
- Analyse the interrelationships between land and city, both from the functional point of view and the influence of topography, hydrography, parcelling and infrastructure in city building and urban settings.
- Know the different theories and models of modern urban development over the city and its territory.
- Formulate, at an initial level corresponding to the subject in the curriculum development, urban development proposals at a territorial scope and scale.
- Formulate, at an initial level corresponding to the subject in the curriculum development, urban development at a territorial scope.

Subject 11: Urban development III

ECTS Credits: 3

Character: Compulsory

Description: The aim of this subject is the projective aspect of planning by students through the development of proposals for growth of different urban settlements based on the identification and development of residential structures. This requires the student to acquire skills that enable them to simultaneously use different scales of action that connect the analysis and territorial proposals with consequent proposed residential structures and, finally, the subdivision and designed building.

Further emphasis will be placed on formal and typological aspects of historic residential developments, in order to equip students with the necessary tools to make growth proposals for urban settlements which have a continuous and harmonious relationship with their urban historical heritage.

Finally, the study of the major theories and formal diagrammatic urban project will commence and will prepare and promote originality and creativity of students in terms of the representation and use of graphical tools that empower them in the exhibition of their projects.

Learning outcomes:

After completing this subject, students will be able to:

- Know how to analyse the formation and morphology of the built urban environment and differentiate types of urban tissues.
- Provide students an urban planning method of reading, analysis and proposal to a scale (territorial to local) in order to apply it in a proposed residential growth.
- Analyse, criticise and apply concepts, basic dimensions and international models in the design of the proposed residential growth reference.
- Be able to cope with complex urban problems from creativity, demonstrating adequate levels of aesthetic and environmental sensitivity, analysis and synthesis resources, oral and written expression, ability to work individually and as a team.

Subject 12: Urban development IV

ECTS Credits: 3

Character: Compulsory

Description: This subject is aimed at developing the residential design aspect begun in the previous course by incorporating the urban design of public and community spaces resulting from the subdivision of land practised in the previous course. The projects developed by students should take a step further in the definition of public space putting everything studied in the 3 previous subjects into practice. Thus, the territorial analysis of Urban development II used for the start of the first stages of the project will continue with the growth processes and fabric continuation and the subdivision of land practised in Urban Development III to, finally implement the concepts acquired in Urban Development I through the final design of small-scale urban spaces such squares and streets.

Moreover, once formally exercised in all the multiple scales involved in a development project, it will lead to an introduction to the administrative procedures and tools that democratic societies required to carry out the various development projects to their physical reality.

Learning outcomes:

After completing this subject, students will be able to:

- Control and dominate spatially different scales of project in a harmonious, coherent and integrated manner.
- Identify the different objectives and aims pursued in each legislative tool of urban planning.
- Use urban development while academic discipline and political tools as a means of integration, sustainability, and social ergonomics.
- Perform spatial and formally partial residential expansion plans.

Subject 13: Urban development V

ECTS Credits: 3

Character: Compulsory

Description: Once the main components, processes, and formal tools of urban development in the creation of primarily residential growth projects are known and tested by the student, the purpose of Urban development V is to make students aware of the practice of the city as a complex organism through projects of urban restructuring that do not necessarily result in the growth of the city through new fabrics but adapting and optimising it through analysis and projects on the city as a whole. The knowledge of new urban concepts and tools developed over the past 20 years as a network of systems, nodes, and the interconnections to promote synergies will be necessary.

This theoretical orientation is combined with the development of several projects at an urban and territorial scale, aimed at the foundation of spatial planning as a management tool not only for new urban growth but mainly for the existing city. Finally, given the interdisciplinary style that lies in these transformation processes, it is necessary to study and comment from the students of some of the main research and/or texts that address specific problems from multiple disciplinary contextualised platforms.

Learning outcomes:

After completing this subject, students will be able to:

- Know how to analyse the formation and morphology of the urban space built in order to assess their capacity and possibilities of transformation. Develop a method of urban planning through a deliberate reading, an analysis aimed at formulating a proposal and an ability to justify the solution adapted to scale (territorial to local).
- Know how to apply concepts, basic dimensions and reference models of strategic urban transformation and construction of public and group spaces in the restructuring of the city through the urban project.
- Discover and use the design of urban contemporary topics such as the principles of diversity (uses and types), identity (civic axes, unique elements, etc.) and sustainability (pedestrian routes, public transport, services, etc.) to create urban quality conditions.

Subject 14: Urban development VI

ECTS Credits: 3

Character: Compulsory

Description: The subject presents the approach to planning as a complex discipline, where various agents intervene in land management at an urban and territorial level, which is difficult to explain from an approach focused solely on morphological criteria.

The theoretical and practical orientation is essentially embodied in the development of several related projects, so that it addresses the spatial planning of a city project at various scales: territory, landscape and urban design. Its urban foundation introduces an analytical and knowledge component of reality that re-directs the necessary capacity to propose the project to the critical understanding of the transformation processes of the territory, of its political-economic context and spatial planning as a management tool.

In general, the course explores the problems of urban neighbourhoods in relation to the urban-metropolitan system, for both the analysis of the place and the project strategies and planning models proposed by the contemporary urban culture.

Learning outcomes:

After completing this subject, students will be able to:

- Understand and interpret the legal framework applicable to the strategic spatial planning and urban space.
- Be able to use the instruments and planning figures necessary to promote action, planning, management and development of the territory and urban space.
- Know and properly use contemporary strategies for creating the city and intervention on the landscape as well as use the fluency necessary for the planning of urban and territorial mobility tools.
- Understand urbanism as a qualified discipline to promote interdisciplinary research strategies.

Subject 15: Architectural culture and theory I

ECTS Credits: 6

Character: Compulsory

Description: The subject examines the evolution and development of architecture throughout the ancient and medieval periods in their historical and artistic contexts, taking into account the most important and significant historical events and architectural works.

The subject also proposes to optimise the acquisition of theoretical knowledge through the implementation of practical experiences that make the theoretical component transcend the immediate perception of art and architecture, and the application of those in favour of the construction of a reflective and autonomous discourse in which the necessary and demanded transversality can be applied.

Learning outcomes:

After completing this subject, students will be able to:

- Acquire knowledge applied to architectural history of the periods under review.
- Have autonomy in the search and analysis of scientific literature.
- Know how to prepare a discourse and start in the method of analysis and criticism of architecture and the development of a critical apparatus.

Subject 16: Architectural culture and theory II

ECTS Credits: 6

Character: Compulsory

Description: The subject examines the evolution and development of architecture throughout the modern period (Renaissance and Baroque) in their historical and artistic contexts, taking into account the most relevant and significant historical events and architectural works, so that students can acquire basic knowledge to enable its subsequent application in the design and construction of new buildings and in the restoration of old.

The main objective is to introduce students to the field of research and criticism in the history of architecture, putting it into practice in the essential processes of documentation and analysis and resolution of critical exercises. Another objective is the solid education and artistic awareness of future professionals who are able to cope, with rigour and autonomy, to the new demands of the workplace.

Learning outcomes:

After completing this subject, students will be able to:

- Critically analyse the relationship of contemporary culture with the so-called Modern Age.
- Study from the plastic arts, and, above all, from architecture, but also from the other Fine Arts.
- Understand the Fine Arts and Architecture mainly from the construction and formal analysis.
- Focus intervention in the architectural heritage and new architectural design.

Subject 17: Architectural culture and theory III

ECTS Credits: 3

Character: Compulsory

Description: The reference axis of this course is to study, from a culturalist approach, the eighteenth century. A century straddling the Modern and Contemporary age which for years was recognised as a key point to understand our perception of both the arts and architecture and its philosophical and theoretical support. The affinity of subject content with recent historiographical approaches abound in the consideration of eighteenth century as inevitable for the understanding of laboratory tests in which the artistic event becomes Modernity. The birth of history of art and aesthetics, along with the construction of the first national/cultural identities, or the sense of historicity both in terms of artworks and the artists themselves, run in parallel with a progressive professionalism of artistic and technical careers, announcing a new role of the artist and overcoming disciplinary boundaries.

We are interested in introducing both the stylistic chaos experienced in this century, and the resulting crisis and its critical fortune. In fact, both the careful study of this period as some historiographical milestones that during the twentieth century have focused on it, are key to our vision of the Modern age.

Learning outcomes:

After completing this subject, students will be able to:

- Appreciate the culture of knowledge accumulated throughout history as a key factor to develop sensitivity for the inherited property, and be able to reinterpret from two points of view: Know how to see what they saw and how they saw others and know how to see for themselves.
- Develop their creativity in art and architecture, to challenge existing solutions, to improve them or adapt them to the circumstances of each case.
- Understand the architectural profession and its role in society, in particular by developing projects that take social, historical and cultural factors into account.
- Appreciate knowledge of the fine arts as an influence on the quality of architectural design.
- Apply the adequate knowledge of the history and theories of architecture as well as the arts, technology and human sciences.

Subject 18: Architectural culture and theory IV

ECTS Credits: 3

Character: Compulsory

Description: This subject covers art and architecture of the nineteenth century in the view of the interrelation of different cultural issues from which the main argumentative lines of contemporaneity will arise. The Nationalists over the Europe of Romanticism or the political and social mobilisation of society that runs parallel to the process of industrialisation, are the basis for the emergence of new materials or photography, and opening the horizon to the "committed" artist such as with pictorial or literary realism. Not surprisingly the nineteenth century is the century of the cartoons, satire and criticism, of urban culture that in the twentieth century will open the doors of 'great art' to demonstrations such as Graffiti which has been called urban art.

But in turn, they reinforce changes in the last century such as the crisis of the concept of style, the strengthening of modern conceptions in heritage or the specific weight of the public in cultural reality. Thus, the existence of a critical mass or groups must be analysed simultaneously to the profusion of artistic events that may be national/international, Universal Exhibitions, Salons, or typical of separate circuits, as individual Studios (Nadar) or alternative "Salons". These issues have come down to us in the form of galleries, biennials, international fairs, awards and institutional awards, along with alternatives such as art in the network that escapes the institutional control.

Learning outcomes:

After completing this subject, students will be able to:

- Appreciate the culture of knowledge accumulated throughout history as a key factor to develop sensitivity for the inherited property, and be able to reinterpret from two points of view: Know how to form opinions on what they saw and how others saw and know how to form opinions for themselves.
- Develop their creativity in art and architecture, to challenge existing solutions, to improve them or adapt them to the circumstances of each case.
- Understand the architectural profession and its role in society, in particular by developing projects that take social, historical and cultural factors into account.
- Appreciate knowledge of the fine arts as an influence on the quality of architectural design.
- Apply the adequate knowledge of the history and theories of architecture as well as the arts, technology and human sciences.

Subject 19: Architectural culture and theory V

ECTS Credits: 3

Character: Compulsory

Description: The aim of this subject is to study architecture and art of the first half of the twentieth century, a first half marked by the radicalism of the avant-garde and its influence on architecture. The new design principles and manifestos of Cubism, Futurism, Neo-Expressionism, Dadaism, Constructivism and their influence on architecture will be analysed. Moreover, as major lines of Modernity as a long durée period, certain cross-cutting issues of discipline will be introduced that allow to emphasise the continuity and mutations of architectural culture between the fifteenth and twentieth centuries. These topics will be the rationality of architectural tools and methodologies, the use of primitivism in the search for the origin, the symbolic as the basis of humanist architecture and the silence of the form, or the problem of the metropolis and the deepening crisis of the concept of the city.

Finally, students should demonstrate a critical assimilation of the various concepts and formal methodologies studied by, first, the mandatory application to a practical case of composition, alternatives to academicians methodologies of the nineteenth century, and on the other hand, the continued exercise of reviewing images and projects unknown to them through creating links with cross-cutting issues, so that they themselves see the limits and shortcomings of the historiographical - positivist stylistic periodisation, in which the major textbooks on history of art and architecture are structured.

Learning outcomes:

After completing this subject, students will be able to:

- Appreciate the culture of knowledge accumulated throughout history as a key factor to develop sensitivity for the inherited property, and be able to reinterpret from two points of view: Know how to form opinions on what they saw and how others saw and know how to form opinions for themselves.
- Develop their creativity in art and architecture, to challenge existing solutions, to improve them or adapt them to the circumstances of each case.
- Understand the architectural profession and its role in society, in particular by developing projects that take social, historical and cultural factors into account.
- Appreciate knowledge of the fine arts as an influence on the quality of architectural design.
- Apply the adequate knowledge of the history and theories of architecture as well as the arts, technology and human sciences.

Subject 20: Architectural culture and theory VI

ECTS Credits: 3

Character: Compulsory

Description: The aim of this subject is to study the art and architecture made in the second half of the twentieth century and early twenty-first century considering that after the Second World War, the most radical experiences of avant-garde and Bauhaus are institutionalised internationally in the various official Schools of Architecture. Furthermore, the development of mass production and rapid reconstruction of Europe drives the development and rise of the new functionalism architecture, which will enter into crisis with the advent of post-modernism and the subsequent deconstruction: both movements of large interdisciplinary scale, and incomprehensible without recourse to certain problems arising in philosophy, sociology, economics, politics, art and literature among others.

Moreover, due to the academisation of avant-garde experiences, a critical study of architectural historiography motivated for different interests of the first historians of the Modern Movement is unavoidable, who built this concept with purely operational purposes and will be explicitly criticised by the new generation of historians of the 70s and 80s.

Finally, given the large increase in critical-theoretical texts by architects in times of reduced building activity (crisis of '73, '79, '93, 2000, 2007), the study of and commentary from students of the main texts that often have marked the development of architecture in a much more consistent way than the architectural projects carried out.

Learning outcomes:

After completing this subject, students will be able to:

- Apply historical knowledge to project decisions and be aware of the originality or not of their own projective proposals.
- Understand the historical, cultural, economic and political environment in which architecture is embedded and to successfully conclude the proposed architectural projects.
- Maintain a critical attitude to the huge amount of isotropic information provided by the mass media that will serve to sift through and discard non-significant information, all based on knowledge and reflective theoretical and practical concepts.
- Apply reasoning based on consistent consequence relations at the level of theoretical research and practical projection of architecture.
- Autonomously judge the current situation of architecture and propose new roles, functions, capabilities and responsibilities of the architect in the information age.
- Undertake architectural projects that go beyond the purely aesthetic or constructive consideration of architecture, understanding the latter as a fundamental technique of human habitat, both in the physical and the virtual world.
- Maintain a critical attitude towards the already constructed historical speeches, being able to dispense with certain historiographical practices ideologically oriented, and complete those points of reductionist view through a comprehensive understanding of architectural practice as a social technique of human habitation.

Subject 21: Civic humanism

ECTS Credits: 6

Character: Compulsory

Description: The subject Civic humanism is devised as a space for learning and reflection on key issues of the contemporary world from a humanistic approach. In the contents of the subject, a central role is given to reflection and argument of the defence of human dignity and respect for their freedom contextualised in a pluralistic, democratic and multicultural society. From an interdisciplinary perspective three key themes are tackled, or if you prefer, three strands of reflection (the human project, the world in which we live, the active global citizenship) around which we try to link some permanent questions that humanism has asked throughout history and others that become the thread of social, economic, political and cultural reality from our everyday lives. This will allow us to delve deeper into the essential elements that a conception of global citizenship must take into account: the social dimension of the person, multiculturalism, social justice and commitment.

Learning outcomes:

After completing this subject, students will be able to:

- Place humanism in its historical dimension reviewing the time path of successive modes of human life that have led to various forms of human thinking and different categories that timeless questions have asked and that different humans has tried to answer.
- Know and understand the elements that define the specifically human and constitutive dimensions of the person.
- Understand the main challenges facing global citizenship in a multicultural world: understanding cultural fractures, social, economic ... and become familiar with some of its main explanatory keys (demographic, geopolitical, technological, consumption, environment, poverty etc.).
- Understand the main concepts related to human rights, social justice and sustainability and its practical implications.
- Identify alternatives and possibilities of transforming action of then analysed reality.



4.2 Module 4 - Nuclear

Name of module: MODULE 4: NUCLEAR	ECTS Credits: 48
---	----------------------------

Subject 1: Integration I

ECTS Credits: 6

Character: Compulsory

Description: This is devised within a programme based on layers of knowledge, which starts with the second year up to the final year, an annual, transversal subject, which connects the different subjects and make them transcend the latest professional virtue. Its aim is not only to educate on current professional capacity, but beyond that, the ability to promote new professional times.

Thus, following the guidelines provided by the ministry, it is proposed that all knowledge leading to architectural education (expression, construction, idea and technique) will start from the second year, enabling innovative, theoretical and material proposals.

Its general structure consists of three parts:

- Week 0: short duration group work organised vertically at the start of the course.
- Vertical workshop: long-term group work covering all degree courses organised vertically.
- Horizontal/experimental workshop: individual work on the background of the architectural project.
-

Learning outcomes:

After completing this subject, students will be able to:

- Work in a group.
- Interrelate skills between different subjects and areas of knowledge.
- Know the processes of approach and solving the problems of the architectural project.
- Knowledge of the management tools in architecture and urban development.
- Delve into the perception and management of scales and urban development processes of the architectural project.
- Examine the perception and management of scales and urban development processes of the architectural project.
- Perceive and develop critical mechanisms for the assimilation of the background of the architectural project, referring to formal and sensitive procedures ideation.
- Perceive and develop critical mechanisms for the assimilation of the background of the architectural project, referred to contacts with the individual and society.

Subject 2: Integration II

ECTS Credits: 6

Character: Compulsory

Description: It covers the same skills of Integration I from the previous year.

This is devised within a programme based on layers of knowledge, which starts with the second year up to the final year, an annual, transversal subject, which connects the different subjects and make them transcend the latest professional virtue. Its aim is not only to educate on current professional capacity, but beyond that, the ability to promote new professional times.

Thus, following the guidelines provided by the ministry, it is proposed that all knowledge leading to architectural education (expression, construction, idea and technique) will start from the second year, enabling innovative, theoretical and material proposals.

Its general structure consists of three parts:

- Week 0: short duration group work organised vertically at the start of the course.
- Vertical workshop: long-term group work covering all degree courses organised vertically.
- Horizontal/experimental workshop: individual work on technique and the subject as an introduction to the architectural project.
-

Learning outcomes:

After completing this subject, students will be able to:

- Ability to work in a group.
- Interrelate skills between different subjects and areas of knowledge.
- Know the processes of approach and solving the problems of the architectural project.
- Knowledge of the management tools in architecture and urban development.
- Delve into the perception and management of scales and urban development processes of the architectural project.
- Examine the perception and management of scales and urban development processes of the architectural project.
- Examine the control of the material as a necessity for proposals resolved from the development.
- Examine the control of the processes to ensure the effectiveness of the strategies proposed from development.

Subject 3: Integration III

ECTS Credits: 6

Character: Compulsory

Description: It covers the same skills of Integration I and Integration II from the previous years.

This is devised within a programme based on layers of knowledge, which starts with the second year up to the final year, an annual, transversal subject, which connects the different subjects and make them transcend the latest professional virtue. Its aim is not only to educate on current professional capacity, but beyond that, the ability to promote new professional times.

Thus, following the guidelines provided by the ministry, it is proposed that all knowledge leading to architectural education (expression, construction, idea and technique) will start from the second year, enabling innovative, theoretical and material proposals.

Its general structure consists of three parts:

- Week 0: short duration group work organised vertically at the start of the course.
- Vertical workshop: long-term group work covering all degree courses organised vertically.
- Horizontal/experimental workshop: individual work on urban problems and professional organisation as an introduction to the architectural project.
-

Learning outcomes:

After completing this subject, students will be able to:

- Work in a group.
- Interrelate skills between different subjects and areas of knowledge.
- Know the processes of approach and solving the problems of the architectural project.
- Knowledge of the management tools in architecture and urban development.
- Delve into the perception and management of scales and urban development processes of the architectural project.
- Examine the perception and management of scales and urban development processes of the architectural project.
- Discover the transversal understanding of urban space as a place of interconnected and recurring events.
- Discover the abstract view of the city, the urban edge, territory and the landscape as a mechanism for solving contemporary problems.

Subject 7: Final Degree Project

ECTS Credits: 6

Character: Compulsory

Description: Sufficiently defined Architectural proposal of an original idea that demonstrates mastery, management and integration of the skills of the degree.

Learning outcomes:

After completing this subject, students will be able to:

- Join the contemporary labour market.
- Solve problems inherent to professional practice as an architect.
- Understand and identify urban, territorial needs of the building and its business processes.
- Build effective problem solving scenarios demanded by individuals and society.
- Devise proactive solutions composed from research and development strategies.

Name of module: PATHWAY 1: ARCHITECTURE DESIGN	ECTS Credits: 24
--	----------------------------

Subject 1: Advanced integration Integrated vertical workshop for architecture and urban development

ECTS Credits: 3

Character: Elective

Description: It covers the same skills of Integration I, Integration II and Integration III from the previous years.

This is devised within a programme based on layers of knowledge, which starts with the second year up to the final year, an annual, transversal subject, which connects the different subjects and make them transcend the latest professional virtue. Its aim is not only to educate on current professional capacity, but beyond that, the ability to promote new professional times.

Thus, following the guidelines provided by the ministry, it is proposed that all knowledge leading to architectural education (expression, construction, idea and technique) will start from the second year, enabling innovative, theoretical and material proposals.

Its general structure consists of two parts:

- Week 0: short duration group work organised vertically at the start of the course.
- Vertical workshop: long-term group work covering all degree courses organised vertically.
-

Learning outcomes:

After completing this subject, students will be able to:

- Work in a group.
- Show leadership and entrepreneurship.
- Propose management strategies and ability to structure organisation systems for specialised processes in specific professional groups.
- Interrelate skills between different subjects and areas of knowledge.
- Know the processes of approach and solving the problems of the architectural project.
- Knowledge of the management tools in architecture and urban development.
- Delve into the perception and management of scales and urban development processes of the architectural project.
- Examine the perception and management of scales and urban development processes of the architectural project.
- Innovate and reinterpret solutions and models used in the history of architecture and urbanism.
- Master with ease and skill relevant graphic-plastic expression languages to promote the emergence of research processes in architectural space, urban space, in the territory and the landscape.

Subject 2: Technical English for architects

ECTS Credits: 3

Character: Elective

Description: This attempts to create an environment conducive to study, enabling the students to have sufficient knowledge of English to be able to access the professional information recorded in this language, to clearly express in English thoughts and ideas necessary for the professional activity as an architect and to be able to exchange data and information on the international work framework.

Learning outcomes:

After completing this subject, students will be able to:

- Be proficient in the technical vocabulary used in English for the development of professional activity as an architect.
- Have sufficient knowledge of the English language to access professional information in this language.
- Express clearly in English, the thought and ideas necessary for the exercise of professional activity as an architect.
- Be able to exchange data and information on international labour framework.
- Attend job or project offerings in English.

Subject 3: Open classroom: Multi-disciplinary training in architecture

ECTS Credits: 3

Character: Elective

Description: This is a programme designed to promote the exchange of experiences with other professional disciplines to enrich the daily development of the profession, access other profiles of interest or additional training, meet different performance frameworks and develop collaborative links to promote the employment of professional skills of the architect, intervene in labour sectors unrelated to the profession promoting a universal professional enrichment aimed at developing skills for decision making, conflict resolution and leadership in students and awaken the critical and non-conformist spirit aimed at an initiation into the world of research.

Learning outcomes:

After completing this subject, students will be able to:

- Access other additional training or interesting profiles.
- Foster the exchange of professional experiences with other disciplines to enrich the daily development of professional activity.
- Understand different professional performance frameworks and develop collaborative links under employment promotion of professional skills of the architect.
- Become involved in labour sectors unrelated to the profession by promoting the universal professional enrichment aimed at the development of decision-making, conflict resolution and leadership.
- Encourage a critical and nonconformist spirit for initiation into the world of research.

Subject 4: Research unit and knowledge transfer in architecture

ECTS Credits: 3

Character: Elective

Description: This subject intends to manage the necessary procedures and techniques to access information and documentation records, meet scientific procedures for the development of research in general, and its subsequent application to the development of research in applied fields of architecture and urban development, namely detecting problems, ability to assess potential issues that may be of interest to the scientific community, seek innovation and development, structure initiation systems to make the proposed research feasible according to the definition of some intended objectives and be able to apply scientific procedures for the universal transmission of knowledge objectives.

Learning outcomes:

After completing this subject, students will be able to:

- Handle procedures and techniques required for access to information and documentation.
- Understand scientific procedures for the development of research activity in general.
- Apply scientific procedures for the development of research activity applied to architecture and urban planning.
- Know how to detect problems and ability to assess potential issues that may be of interest to the scientific community.
- Seek innovation and development. Structure initiation systems to make research in architecture and urban planning viable in accordance with the definition of purported goals.
- Apply scientific methods for the universal transmission of knowledge.

Subject 5: Soil, geotechnical and foundation mechanics

ECTS Credits: 3

Character: Elective

Description: This subject proposes how to analyse, understand and solve complex problems related to shallow and deep foundation systems, understand analytically and know how to act in front of the specific characteristics of the main types of land existing in nature, structure procedures and methods for the exploration and recognition of foundation soils, become more fluent in the calculation of footings and foundation slabs, as well as centering and/or bracing beams, basement walls, retaining walls, foundations of development works, become more fluent in the calculation of piles, micropiles, pits, trenches and foundation screens, solve structural problems arising from the geotechnical characteristics of the land develop underpinning or strengthening works on the foundation of any structure and be able to design and calculate foundations for development works and plotting paths, roads and motorways.

Learning outcomes:

After completing this subject, students will be able to:

- Analyse, understand and solve complex problems related to shallow foundation systems.
- Analyse, understand and solve complex problems related to deep foundation systems.
- Analytically understand and know how to act in view of the specific features of the main types of existing land in nature.
- Structure procedures and methods for prospecting and recognition of the foundation land.
- Be proficient in calculating footings and foundation slabs and centering and/or bracing beams, basement walls, retaining walls, foundations of development works under compliance with the regulations in force.
- Dominate the calculation of piles, micropiles, pits, trenches and foundations screens under compliance with the regulations in force.
- Resolve structural problems resulting from the geotechnical characteristics of the terrain.
- Develop underpinning or consolidation works on the foundation of any structure.
- Know how to design and calculate firm for development works and road paths, roads and highways

Subject 6: Special structures: Large span models and tall buildings
ECTS Credits: 3

Character: Elective

Description: This subject attempts to design and calculate complex structures by three-dimensional meshes composed of articulated rods, large span models and prefabricated structures such as "in situ" systems, to know how to compute special solutions used in buildings for long flights, surveys, limitations and arrow crumple, make, use and calculate pre-stressed and post-tensioned structural elements, become fluent in transition systems and meeting between independent structures or structural elements, structural self-protection systems of any material from the risk of fire, know, calculate and be aware of using systems and models for tall building structures, models of structures for buildings with resolved double-curved geometries and work on the design, dimensioning and calculation of civil works.

Learning outcomes:

After completing this subject, students will be able to:

- Know how to design and calculate complex three-dimensional structures composed of meshes of articulated bars.
- Know how to design and calculate large structures resolved lights both prefabricated systems and "in situ" systems.
- Know how to calculate special solutions used in construction for large flights, propping, limitations arrow and controlled deformation.
- Know, use and calculate pre-stressed and post-tensioned structural elements.
- Be fluent in transition systems and meeting between independent structures or structural elements.
- Be fluent in structural self-protection systems of any material against the risk of fire.
- Understand, calculate and know how to use models of systems and structures for building at heights.
- Understand, calculate and know how to use systems and models solved structures for buildings with double-curved geometries.
- Work with the design, dimensioning and calculation of civil works; bridges and dams.

Subject 7: Energy and services: efficiency and sustainability in architectural constructions

ECTS Credits: 3

Character: Elective

Description: Control material execution processes in order to ensure adequate levels of efficiency and sustainability in architectural construction, know how to use contemporary tools aimed at developing constructive solutions with low energy demand, as well as knowing the technical and administrative procedures for issuing energy certificates. Plan, develop and control the design and implementation of basic urban service paths. Plan waste control processes from architectural construction and know how to plan and structure reversibility strategies in contemporary buildings. Have sufficient solvency to open lines of research relating to the study of energy use in architectural construction.

Learning outcomes:

After completing this subject, students will be able to:

- Control the material execution processes in order to ensure adequate levels of efficiency and sustainability in architectural construction.
- Use contemporary tools aimed at developing low energy demand construction solutions. Control forms of energy certification.
- Plan, develop and control the design and implementation of basic urban service paths.
- Plan waste control processes from architectural construction and know how to plan and structure reversibility strategies in contemporary buildings.
- Have sufficient solvency to open lines of research relating to the study of energy use in architectural construction.

Subject 8: Legal and forensic architecture: measurements, budgets, reports and valuations.

ECTS Credits: 3

Character: Elective

Description: Learn to measure and budget a construction according to its actual execution phases, control developmental processes of architectural constructions. Project management. Meet the applicable legislation to deal with legal conditions in architectural construction, assess liability attributable to each participating agent in the construction process in court processes and knowing how to assess and evaluate land and buildings of urban nature, according to current legislation and enforcement.

Learning outcomes:

After completing this subject, students will be able to:

- Ability to measure and budget a construction according to its material execution phase.
- Control the development processes of architectural constructions. Project management.
- Understand applicable legislation to deal judicially with pathologies in architectural constructions.
- Assess the responsibility attributable to each participant in the construction process in the processing of a judicial expert opinion.
- Know how to assess and evaluate soil and buildings of urban nature, in accordance with current regulations and enforcement.

Name of module: PATHWAY 2: URBAN DESIGN	ECTS Credits: 24
---	----------------------------

Subject 1: Advanced integration Integrated vertical workshop for architecture and urban development

ECTS Credits: 3

Character: Elective

Description: It covers the same skills of Integration I, Integration II and Integration III from the previous years.

This is devised within a programme based on layers of knowledge, which starts with the second year up to the final year, an annual, transversal subject, which connects the different subjects and make them transcend the latest professional virtue. Its aim is not only to educate on current professional capacity, but beyond that, the ability to promote new professional times.

Thus, following the guidelines provided by the ministry, it is proposed that all knowledge leading to architectural education (expression, construction, idea and technique) will start from the second year, enabling innovative, theoretical and material proposals.

Its general structure consists of two parts:

- Week 0: short duration group work organised vertically at the start of the course.
- Vertical workshop: long-term group work covering all degree courses organised vertically.
-

Learning outcomes:

After completing this subject, students will be able to:

- Work in a group.
- Show leadership and entrepreneurship.
- Propose management strategies and ability to structure organisation systems for specialised processes in specific professional groups.
- Interrelate skills between different subjects and areas of knowledge.
- Know the processes of approach and solving the problems of the architectural project.
- Knowledge of the management tools in architecture and urban development.
- Delve into the perception and management of scales and urban development processes of the architectural project.
- Examine the perception and management of scales and urban development processes of the architectural project.
- Innovate and reinterpret solutions and models used in the history of architecture and urbanism.
- Master with ease and skill relevant graphic-plastic expression languages to promote the emergence of research processes in architectural space, urban space, in the territory and the landscape.

Subject 2: Technical English for architects

ECTS Credits: 3

Character: Elective

Description: This attempts to create an environment conducive to study, enabling the students to have sufficient knowledge of English to be able to access the professional information recorded in this language, to clearly express in English thoughts and ideas necessary for the professional activity as an architect and to be able to exchange data and information on the international work framework.

Learning outcomes:

After completing this subject, students will be able to:

- Be proficient in the technical vocabulary used in English for the development of professional activity as an architect.
- Have sufficient knowledge of the English language to access professional information in this language.
- Express clearly in English, the thought and ideas necessary for the exercise of professional activity as an architect.
- Be able to exchange data and information on international labour framework.
- Attend job or project offerings in English.

Subject 3: Open classroom: Multi-disciplinary training in architecture

ECTS Credits: 3

Character: Elective

Description: This is a programme designed to promote the exchange of experiences with other professional disciplines to enrich the daily development of the profession, access other profiles of interest or additional training, meet different performance frameworks and develop collaborative links to promote the employment of professional skills of the architect, intervene in labour sectors unrelated to the profession promoting a universal professional enrichment aimed at developing skills for decision making, conflict resolution and leadership in students and awaken the critical and non-conformist spirit aimed at an initiation into the world of research.

Learning outcomes:

After completing this subject, students will be able to:

- Access other additional training or interesting profiles.
- Foster the exchange of professional experiences with other disciplines to enrich the daily development of professional activity.
- Understand different professional performance frameworks and develop collaborative links under employment promotion of professional skills of the architect.
- Become involved in labour sectors unrelated to the profession by promoting the universal professional enrichment aimed at the development of decision-making, conflict resolution and leadership.
- Encourage a critical and nonconformist spirit for initiation into the world of research.

Subject 4: Research unit and knowledge transfer in architecture

ECTS Credits: 3

Character: Elective

Description: This subject intends to manage the necessary procedures and techniques to access information and documentation records, meet scientific procedures for the development of research in general, and its subsequent application to the development of research in applied fields of architecture and urban development, namely detecting problems, ability to assess potential issues that may be of interest to the scientific community, seek innovation and development, structure initiation systems to make the proposed research feasible according to the definition of some intended objectives and be able to apply scientific procedures for the universal transmission of knowledge objectives.

Learning outcomes:

After completing this subject, students will be able to:

- Handle procedures and techniques required for access to information and documentation.
- Understand scientific procedures for the development of research activity in general.
- Apply scientific procedures for the development of research activity applied to architecture and urban planning.
- Know how to detect problems and ability to assess potential issues that may be of interest to the scientific community.
- Seek innovation and development. Structure initiation systems to make research in architecture and urban planning viable in accordance with the definition of purported goals.
- Apply scientific methods for the universal transmission of knowledge.

Subject 5: Aesthetics and thought: Theory of ideas applied to design and planning in Urban development and architecture

ECTS Credits: 3

Character: Elective

Description: This aim of this subject is to have autonomy of criteria and judgement as regards the panorama of current thinking, to have explored the currents of thought, theory, and more recently influential architectural composition, handle abstract thinking as a tool for proposing solutions to current urban and architectural issues, know and properly use various scientific theories on architectural criticism, build consensus to use the planning and architecture as the engine for the activation of individuals and societies.

Learning outcomes:

After completing this subject, students will be able to:

- Have autonomy of judgement and capacity to judge in relation to the current thinking scenario.
- Delve into the currents of thought, theory and most influential of late architectural composition.
- Handle abstract thinking as a tool for proposing solutions to current urban and architectural issues.
- Understand and properly use various scientific theories concerning architectural criticism.
- Build consensus and to use urban planning and architecture as a driver for activation of individuals and societies.

Subject 6: Social action and responsibility in urban development and architecture

ECTS Credits: 3

Character: Elective

Description: Meet, plan and control the processes of social management for the use of public spaces and knowing implement collaborative actions and processes of citizen participation in the design, planning and development of public space. Know about and use contemporary strategies for the regeneration of the consolidated urban fabric, how to interpret the intrinsic possibilities of urban regulations to encourage the development of new opportunities for sustainable urban development and know how to use data-oriented multidisciplinary building strategic lines research and innovation in the use of urban spaces.

Learning outcomes:

After completing this subject, students will be able to:

- Understand, plan and control processes of social management measures applicable to the use of public spaces.
- Understand implement collaborative actions and processes of citizen participation in the design, planning and development of public space.
- Understand and use contemporary for the regeneration of urban fabric consolidated strategies.
- Know how to interpret the inherent possibilities of the current planning regulations to encourage the development of new possibilities for sustainable urban development.
- Know how to use data-oriented multidisciplinary creating strategic research and innovation in the use of urban spaces.

Subject 7: Territory, city and landscape: From urban morphologies to contemporary housing

ECTS Credits: 3

Character: Elective

Description: The development of this area aims to build strategic programmes that enable multi-propositional complex reading of the contemporary city, assimilate the needs of contemporary urban demands that enable consistent, efficient and sustainable interventions. Suggest referred urban attractions: memory / tradition / customs, reversibility / condition / investment / mutation and rhythm / cycle / time. Adequately resolve the transition between the urban-architectural scale and finally implanted functional programs and develop critical-propositional models "housing" contemporaries like structures to build the city visions.

Learning outcomes:

After completing this subject, students will be able to:

- Build multi-proposal strategic programs that enable complex readings of the contemporary city.
- Assimilate the needs of contemporary urban demands that enable consistent, effective and sustainable interventions.
- Suggest referred urban attractions: memory / tradition / customs, reversibility / condition / investment / mutation and rhythm / cycle / time.
- Solve the traffic between the urban-architectural scale and finally implanted functional programs.
- Develop critical-propositional models "housing" contemporary and structures for the construction of the city visions.

Subject 8: Study, plan and intervention in the historic-artistic heritage

ECTS Credits: 3

Character: Elective

Description: This subject aims to present the main historical theories about the forms of intervention in the historical and artistic heritage, develop adequate sensitivity to discern the historical and artistic worth of buildings or parts thereof, knowing and mastering the fundamental constructive strategies and constructive strategies advanced for intervention in the art-historical research and implement solutions and innovation in the field of rehabilitation of historic and artistic heritage buildings.

Learning outcomes:

After completing this subject, students will be able to:

- Know about the main historical theories on ways of intervention in the historical and artistic heritage.
- Develop adequate sensitivity to discern the historical and artistic value of the buildings or its parts.
- Learn and master fundamental constructive intervention strategies in historical-artistic heritage.
- Learn and master advanced constructive intervention strategies in historical-artistic heritage.
- Implement research and innovation solutions in the field of rehabilitation of historical and artistic buildings.