



<b>I. GENERAL DATA:</b>			
<b>Acronym:</b>	<b>Subject:</b>	<b>Code:</b>	
TAR	Theory of Architecture	13389	
		<b>Study Plan:</b>	
		178 (2015)	
<b>Course:</b>	<b>Semester:</b>	<b>Status:</b>	<b>Credits:</b>
4º	A	Compulsory	4,5 credits = 2 (TA) + 2,5 (PL)
<b>Director of the Course:</b>		<b>Department:</b>	
Poyatos Sebastian, Javier		Architectonical Composition	
<b>II. GENERAL DESCRIPTION OF THE SUBJECT:</b>			
<p>The agenda includes the study of the Theory of Architecture from classical antiquity to the present day, with special focus on the 20<sup>th</sup> century and the present, seeking a theoretical foundation useful for 21st century architecture based on the multiple perspectives that history provides. The most relevant theoretical texts, in their cultural context, are analysed for a better understanding of the architectural style of each period and to extract concepts for modern consideration purposes.</p>			
<b>III. SELECTION AND STRUCTURING OF THE MAIN UNITS:</b>			
<ol style="list-style-type: none"> <li>1. THE CLASSICAL THEORY               <ol style="list-style-type: none"> <li>1. Vitruvio</li> <li>2. Alberti</li> <li>3. Palladio</li> </ol> </li>   <li>2. THE ILLUSTRATION               <ol style="list-style-type: none"> <li>1. Boullée and Ledoux</li> <li>2. Durand</li> </ol> </li>   <li>3. ROMANTICISM               <ol style="list-style-type: none"> <li>1. Viollet-le-Duc</li> <li>2. Ruskin</li> </ol> </li>   <li>4. THE PIONEERS OF MODERNITY               <ol style="list-style-type: none"> <li>1. Loos</li> <li>2. The Deutscher Werkbund</li> <li>3. Futurism, De Stijl, Constructivism</li> </ol> </li>   <li>5. THE MODERNITY AND THEIR TEACHERS               <ol style="list-style-type: none"> <li>1. Wright</li> <li>2. Gropius and Mies</li> </ol> </li> </ol>			





3. Le Corbusier

4. Aalto

6. CONTEMPORANITY

1. First Crisis of Modernity: Team X and Postwar Italy

2. Kahn, Venturi, Rossi and postmodernity

3. Deconstructivism and Minimalism: Eisenman and Pawson

4. New Sensoriality: Pallasmaa and Zumthor. Balance for today and tomorrow





<b>I. GENERAL DATA:</b>			
<b>Acronym:</b>	<b>Subject:</b>	<b>Code:</b>	
PR4	Architectural Projects 4 (Design Studio)	13383	
		<b>Study Plan:</b> 178 (2015)	
<b>Course:</b>	<b>Semester:</b>	<b>Status:</b>	<b>Credits:</b>
4º	A-B	Compulsory	15 credits = 7,5 (TA) + 7,5 (PL)
<b>Director of the Course:</b>		<b>Department:</b>	
Gallud Martínez, Antonio		Architectural projects	
<b>II. GENERAL DESCRIPTION OF THE SUBJECT:</b>			
<p>It approaches the architectural project from its concept, idea and expression and allows, from premises and definition of objectives, to organise and develop project proposals that satisfy certain functional, technical, cultural, aesthetic and environment related requirements, in the context suggested and from the understanding of the social function of architects and the responsibility of their projects.</p> <p>It will be necessary to determine the tools and procedures for the representation and implementation of such proposals throughout the project, as well as the presentation of the basic criteria on which an architectural project is based.</p> <p>This subject is taught by the Department of Architectural Projects, whose workshops are responsible for ensuring a structured and complete teaching in the area of knowledge.</p>			
<b>III. SELECTION AND STRUCTURING OF THE MAIN UNITS:</b>			
<ol style="list-style-type: none"> <li>1. ARCHITECTURAL PROJECT: CONCEPT. IDEA. EXPRESSION.</li> <li>2. PHYSICAL MEDIUM AND CULTURAL ENVIRONMENT.</li> <li>3. ACTIVITY AND FUNCTION.</li> <li>4. SPACE AND FORM.</li> <li>5. SUBJECT AND TECHNIQUE.</li> <li>6. SYSTEMS. PROCESSES. IDIOMS.</li> </ol>			





<b>I. GENERAL DATA:</b>			
<b>Acronym:</b>	<b>Subject:</b>	<b>Code:</b>	
CT2	Construction 2	13399	
		<b>Study Plan:</b>	
		178 (2015)	
<b>Course:</b>	<b>Semester:</b>	<b>Status:</b>	<b>Credits:</b>
4º	A-B	Compulsory	9 credits = 4,5 (TA) + 4,5 (PL)
<b>Director of the Course:</b>		<b>Department:</b>	
Fran Bretones, José Mª		Architectural constructions	
<b>II. GENERAL DESCRIPTION OF THE SUBJECT:</b>			
<p>Construction II is an annual subject of the fourth year of the Architect Degree. It is the last dedicated subject of architectural construction. Even though in the fifth year they have Construction III, the subject is oriented to the study of concrete structures.</p> <p>The main objective of Construction II is to make the students to achieve the necessary specific theoretical knowledge and skill practice to deal with security resolutions and constructive design of any architectural project. Therefore, the intention is to contribute to the future architects giving them indispensable tools to be competent to build from the most initial phases of the project.</p> <p>According to the department of Architectural Constructions the teaching of Construction II its complemented by Construction I. Both subjects study the elements and the construction systems involved in architecture but, while Construction I gets more focused on the more common processes and techniques, Construction II gives constructive solutions more advance technologically, industrially and more specific.</p>			
<b>III. SELECTION AND STRUCTURING OF THE MAIN UNITS:</b>			
<ol style="list-style-type: none"> <li>1. <b>DIDACTIC UNIT 1.- INDUSTRIALIZED FACADE CLOSURES</b> <ol style="list-style-type: none"> <li>1. 1. LIGHT CLOSURES WITH METAL AND WOOD PANELS.</li> <li>2. 2. CURRENT WALL TECHNOLOGY.</li> <li>3. 3. CURRENT WALL CONSTRUCTION SYSTEMS.</li> <li>4. 4. PREFABRICATED CONCRETE PANELS FOR FACADES.</li> </ol> </li> <li>2. <b>DIDACTIC UNIT 2.- EXTERIOR CARPENTRY</b> <ol style="list-style-type: none"> <li>1. 1. INTRODUCTION AND CLASSIFICATION.</li> <li>2. 2. MATERIALS.</li> <li>3. 3. START-UP.</li> <li>4. 4. GLASS..</li> </ol> </li> <li>3. <b>DIDACTIC UNIT 3.- INDUSTRIALIZED COVERS</b> <ol style="list-style-type: none"> <li>1. 1. INTRODUCTION TO INDUSTRIALIZED COVERS.</li> <li>2. 2. ECOLOGICAL COVERS AND COVERS ALJIBE.</li> <li>3. 3. METAL COVERS, DECK, SANDWICH. LUCERNARIOS.</li> </ol> </li> <li>4. <b>DIDACTIC UNIT 4.- INDUSTRIALIZED CONSTRUCTION OF INTERIORS.</b> <ol style="list-style-type: none"> <li>1. 1. INDUSTRIALIZED INTERIOR COMPARTMENTAL SYSTEMS.</li> <li>2. 2. ADVANCED SYSTEMS OF TECHNICAL FLOORS.</li> </ol> </li> </ol>			





3. 3. ADVANCED SYSTEMS OF FALSE TECHNICAL CEILINGS.
4. 4. INTERIOR FLOOR CONSTRUCTION PAVEMENTS.
5. 5. CONTINUOUS POLYMERIC PAVEMENTS
5. **PRACTICAL BLOCK 1.- THE ACOUSTIC ENVIRONMENT AND APPLICATION OF C.T.E. TO THE INDUSTRIALIZED FACADES.**
6. **PRACTICAL BLOCK 2.- ENERGY EFFICIENCY OF THE THERMAL ENVELOPE.**
7. **PRACTICAL BLOCK 3.- APPLICATION OF C.T.E. TO THE INDUSTRIALIZED COVERS.**

**PRACTICAL BLOCK 4.- SAFETY AND HEALTH IN THE CONSTRUCTION**





<b>I. GENERAL DATA:</b>			
<b>Acronym:</b>	<b>Subject:</b>	<b>Code:</b>	
COM	Architectural Composition	13390	
		<b>Study Plan:</b>	
		178 (2015)	
<b>Year:</b>	<b>Semester:</b>	<b>Status:</b>	<b>Credits:</b>
4 <sup>º</sup>	B	Compulsory	4,5 credits = 2,5 (TA) + 2 (PL)
<b>Course Director:</b>		<b>Department:</b>	
Vegas López-Manzanares, Fernando		ARCHITECTONICAL COMPOSITION	
<b>II. GENERAL DESCRIPTION OF THE SUBJECT:</b>			
<p>Architectural Composition provides students with a methodology to approach the critical analysis and architectural creation. Its objectives are to stimulate critical capacity by deepening the knowledge of the architecture of the 20<sup>th</sup> century, providing the student with transversal analysis tools and the ability to perform a creative synthesis for the project. Therefore it structures its thematic units in two sections: the first section is based on the compositional methods and architectural options and the second one on the different dimensions of architecture: place, function, geometry, structure, shape, space, route, light and materiality.</p> <p>Each of them is analyzed in a chronological and transversal manner, influencing its development. The objective is to train students to delve into the project mechanisms that lie behind the will of the creator. The subject also includes a process of cognitive research that extracts methodologies, theories, forms, techniques and solutions related to history, uses them respecting their original context and inserts them in a specific disciplinary plane typical of the creative act.</p>			
<b>III. SELECTION AND STRUCTURING OF THE MAIN UNITS:</b>			
<ol style="list-style-type: none"> <li>1. Historical composition methods</li> <li>2. Composition as a method</li> <li>3. Cultural context and architectural trends</li> <li>4. The concept of place</li> <li>5. Function</li> <li>6. Geometry</li> <li>7. The structure as a means of formal expression</li> <li>8. Form. Mechanisms of ideation of the form</li> <li>9. Space</li> <li>10. The space-time relationship. The route</li> <li>11. Natural light as a mechanism of creation</li> <li>12. Materiality and perception</li> </ol>			





<b>I. GENERAL DATA:</b>			
<b>Acronym:</b>	<b>Subject:</b>	<b>Code:</b>	
IHI	Hydraulic Installations	13402	
		<b>Study Plan:</b>	
		178 (2015)	
<b>Course:</b>	<b>Semester:</b>	<b>Status:</b>	<b>Credits:</b>
4 <sup>o</sup>	A	Compulsory	4,5 credits = 2,3 (TA) + 2,2 (PL)
<b>Director of the Course:</b>		<b>Department:</b>	
Montero Delgado, Luís Miguel		Architectural Constructions	
<b>II. GENERAL DESCRIPTION OF THE SUBJECT:</b>			
<p>The subject tries to teach the student to: conceive, design, integrate and execute the basic facilities of their buildings.</p> <p>Specifically, it is intended, with the program that is taught, that the student is able, by itself, to insert the facilities in their buildings so that they do not create dysfunctions and achieve the desired comfort. The facilities and regulations that are studied in this subject are: plumbing, hot water, sanitation, ventilation and fire protection.</p> <p>Each installation is analyzed in three areas: first, the generality of the installation and typologies; Secondly an approach to the knowledge of the basic devices of the installation and thirdly it addresses the design and dimensioning.</p>			
<b>III. SELECTION AND STRUCTURING OF THE MAIN UNITS:</b>			
<ol style="list-style-type: none"> <li>1. Introduction to Hydraulic Installations</li> <li>2. Sanitation facilities</li> <li>3. Water Supply Facilities</li> <li>4. Hot Water Installations (ACS)</li> <li>5. Fuel Gas Supply Facilities</li> <li>6. Fire protection facilities</li> <li>7. Ventilation systems.</li> </ol>			





I. GENERAL DATA:			
<b>Acronym:</b>	<b>Subject:</b>	<b>Code:</b>	
ST2	Structural Design II	13406	
		<b>Curriculum:</b>	
		178 (2015)	
<b>Curriculum year:</b>	<b>Semester:</b>	<b>Status:</b>	<b>ECTS:</b>
4º	A+B	Compulsory	9 credits = 5,0 (TA) + 3,0 (PA) + 1,0 (PI)
<b>Coordinator:</b>		<b>Department:</b>	
Luisa Basset Salom		Continuum Mechanics and Theory of Structures	
II. GENERAL DESCRIPTION OF THE COURSE:			
<p>The course of Structures II is part of the second term of the Architect Degree. It has the responsibility of analysing structures in coordination with structural design, quality control and building structures pathologies.</p> <p>The analysis of structures consolidates the knowledge of the Strength of Materials and the Theory of Beams taught in Structures I. It studies the safety of the structure and all its elements against the ultimate and service limit states called, as a consequence, respectively, of the different actions and the possible damages that it may suffer during life.</p> <p>The student has to achieve necessary knowledge to evaluate an alternative design of the structure, estimate their forces and relevant types of load cases, pre-schedule necessary sections, apply different calculation methods depending on the situation, obtain the stress of the structural elements and movements of the structure as a whole, and finalise with minimal notions of constructive details of the structural elements.</p>			
III. ORGANIZATION OF THE COURSE UNITS :			
<p>1. BASES OF STRUCTURAL DESIGN:</p> <ul style="list-style-type: none"> <li>1.1. Characteristics of the project and evaluation of alternatives</li> <li>1.2. Actions. Materials</li> <li>1.3. Structural safety</li> </ul> <p>2. FUNDAMENTALS OF STRUCTURAL ANALYSIS:</p> <ul style="list-style-type: none"> <li>2.1. Elements that define calculations: Geometry, Kinematic and Behaviour. Underlying classifications</li> <li>2.2. Fundamental hypothesis of the work. Real and simplified models. Complex structures</li> </ul> <p>3. STRUCTURAL DIVERSITY:</p> <ul style="list-style-type: none"> <li>3.1. Static and kinematic grades of indeterminacy. Underlying relations</li> <li>3.2. Strength and movement threshold. Appropriate metrology of calculation</li> </ul> <p>4. ISOSTATIC STRUCTURES:</p> <ul style="list-style-type: none"> <li>4.1. Isostatic calculations. Equilibrium of nodes and bars</li> <li>4.2. Evaluation of results and pre-schedule of elements</li> <li>4.3. Kinematic calculations of isostatic structures</li> <li>4.4. Kinematic configuration</li> <li>4.5. Evaluation of results. Re-schedule</li> </ul>			







5. HYPERSTATIC STRUCTURES:

- 5.1. Basic needs for calculations. Equilibrium, compatibility and behaviour
- 5.2. Approximate pre-schedule of elements

6. ENERGY METHODS:

- 6.1. Work and Energy concepts
- 6.2. Work of the external forces, elastic work and additional work
- 6.3. Deformation energy
- 6.4. Principle of Energy Conservation. Structural applications

7. VIRTUAL WORKS:

- 7.1. Virtual work concept
- 7.2. Principle of the virtual forces and the flexibility method
- 7.3. Principle of the virtual movement and the rigid method





<b>I. GENERAL DATA:</b>			
<b>Acronym:</b>	<b>Subject:</b>	<b>Code:</b>	
URB 3	Urbanism	13394	
		<b>Study Plan:</b>	
		178 (2015)	
<b>Year:</b>	<b>Semester:</b>	<b>Status:</b>	<b>Credits:</b>
4	A-B	Compulsory	9 credits = 4,6 (TA) + 4,4 (PL)
<b>Course Director:</b>		<b>Department:</b>	
Insausti Machinandiarena, Pilar		Urban Planning	
<b>II. GENERAL DESCRIPTION OF THE SUBJECT:</b>			
<p>The subject is structured by the following didactic units:</p> <p><b>BLOCK 1: THE TERRITORIAL SCALE.</b>  <b>UD.1 The Territorial Model:</b>            1.1 The identity of the territory and the elements of the landscape.            1.2 Peri-urban and agro-urban areas. Forms of settlement and environmental criteria.            1.3 Territory and landscape recycling. The challenges of sustainability.</p> <p><b>UD.2 Territorial and urban planning:</b>            2.1 The instruments of spatial planning and landscape.            2.2 Strategic planning.            2.3 Environmental regulatory processes.</p> <p><b>BLOCK 2: THE URBAN SCALE.</b>  <b>UD.3 The city model:</b>            3.1 The attributes of the urban form.            3.2 The urban landscape. The public scene and the networks of green spaces.            3.3 Sustainable development and urban environment.</p> <p><b>UD.4 The urban project:</b>            4.1 Proposals for regeneration and urban renewal.            4.2 Partial growth interventions or incomplete urban areas.            4.3 Interventions on public space: urban planning and landscaping projects.</p>			
<b>III. SELECTION AND STRUCTURING OF THE MAIN UNITS:</b>			
<ol style="list-style-type: none"> <li>1. The Territorial Model               <ol style="list-style-type: none"> <li>1. The identity of the territory and the elements of the landscape.</li> <li>2. Peri-urban and agro-urban. Forms of settlement and environmental criteria.</li> <li>3. Territory and landscape recycling. The challenges of sustainability.</li> </ol> </li> <li>2. Territorial and urban planning               <ol style="list-style-type: none"> <li>1. The instruments of spatial planning and landscape.</li> <li>2. Strategic planning.</li> <li>3. Environmental regulatory processes.</li> </ol> </li> </ol>			





3. The city model
  1. The attributes of the urban form.
  2. The urban landscape. The public scene and the networks of green spaces.
  3. Sustainable development and urban environment.
  
4. The urban project
  1. Proposals for regeneration and urban renewal.
  2. Partial growth interventions or incomplete urban areas.
  3. Interventions on public space: urban planning and landscaping projects.





<b>I. GENERAL DATA:</b>			
<b>Acronym:</b>	<b>Subject:</b>	<b>Code:</b>	
IAH	Hygrothermal Conditioning	13403	
		<b>Study Plan:</b>	
		178 (2015)	
<b>Course:</b>	<b>Semester:</b>	<b>Status:</b>	<b>Credits:</b>
4º	B	Compulsory	4,5 credits = 2,3 (TA) + 2,2 (PL)
<b>Director of the Course:</b>		<b>Department:</b>	
Vicente Valiente, Vicente De		Architectural constructions	
<b>II. GENERAL DESCRIPTION OF THE SUBJECT:</b>			
<p>The subject teaches students to: conceive, design, integrate and execute the basic facilities of their buildings.</p> <p>Specifically, it is intended that students are able, by themselves, to insert facilities in their buildings so that they do not create dysfunctions and achieve the desired comfort. The facilities that are studied in this subject are: normative and notions of thermal insulation, calculation of transmittances, thermal balance, design and calculation of heating and air conditioning installations.</p> <p>Each installation is analysed in three areas: first, it delves into the general aspects of the installation and typologies; secondly, it provides an approach to the knowledge of the basic devices of the installation and, thirdly, it addresses the design and sizing</p>			
<b>III. SELECTION AND STRUCTURING OF THE MAIN UNITS:</b>			
<ol style="list-style-type: none"> <li>1. ENVIRONMENTAL PREEXISTENCES. PHYSICS OF THE ENVIRONMENT. THE HYDROTHERMAL COMFORT.</li> <li>2. PSYCHOMETRY.</li> <li>3. THERMAL TRANSMISSION. CALCULATION OF THE THERMAL TRANSMISSION COEFFICIENT. APPLICATION REGULATIONS.</li> <li>4. HYGROTHIC CONDITIONING FACILITIES IN BUILDINGS. APPLICATION REGULATIONS. HEATING SYATEMS.</li> <li>5. DESIGN AND CALCULATION OF HEATING INSTALLATIONS FOR HOT WATER. RADIANT FLOOR AND OTHER HEATING SYSTEMS. EXECUTION AND MAINTENANCE.</li> <li>6. THE THERMODYNAMIC MACHINE. TYPES OF AIR CONDITIONING SYSTEMS. INDIVIDUAL SYSTEMS AND CENTRALISED SYSTEMS.</li> <li>7. DESIGN AND CALCULATION OF THERMAL CONDITIONING INSTALLATIONS IN SUMMER.</li> </ol>			

