



Teaching Guide

Identifying Data					2020/21
Subject (*)	Construction I [In extinction]	Code	670G01009		
Study programme	Grao en Arquitectura Técnica				
Descriptors					
Cycle	Period	Year	Type	Credits	
Graduate	2nd four-month period	First	Obligatory	6	
Language	Spanish				
Teaching method	Face-to-face				
Prerequisites					
Department	Construcións e Estruturas Arquitectónicas, Cívís e Aeronáuticas				
Coordinador	Caridad Yañez, Francisco Jose	E-mail	francisco.caridad@udc.es		
Lecturers	Caridad Yañez, Francisco Jose	E-mail	francisco.caridad@udc.es		
Web					
General description	<p>ASIGNATURA EN EXTINCIÓN</p> <p>Al tratarse de una asignatura del primer curso y una de las específicas de la titulación, el alumno debe revisar y prestar atención a los conocimientos previos adquiridos durante la etapa anterior a su acceso; en especial a las materias de física, matemáticas, geometría y dibujo.</p> <p>En el desarrollo de la materia, se impartirán los conocimientos básicos y generales, de los elementos fundamentales que forman parte de los procesos constructivos de los edificios.</p> <p>El aprendizaje completo de la asignatura, va ligado a otras materias del propio primer curso de la carrera como: materiales de construcción, física, geometría descriptiva y dibujo.</p>				
Contingency plan	<p>1. Modifications to the contents</p> <p>2. Methodologies</p> <p>*Teaching methodologies that are maintained</p> <p>*Teaching methodologies that are modified</p> <p>3. Mechanisms for personalized attention to students</p> <p>4. Modifications in the evaluation</p> <p>*Evaluation observations:</p> <p>5. Modifications to the bibliography or webgraphy</p>				

Study programme competences

Code	Study programme competences
A2	Adquirir os coñecementos fundamentais sobre os sistemas e aplicacións informáticas específicos e xerais utilizados no ámbito da edificación.
A3	Coñecer os materiais, tecnoloxías, equipos, sistemas e procesos construtivos propios da edificación en xeral e en particular aqueles específicos de Galicia.
A5	Coñecer a evolución histórica dos materiais, tecnoloxías, procedementos, métodos, sistemas e elementos construtivos.
A6	Coñecer e aplicar os distintos sistemas de representación así como as técnicas e procedementos de expresión gráfica aplicados á edificación e ás construcións arquitectónicas.
A18	Dirixir e xestionar o proceso de execución da obra.
B1	Capacidade de análise e síntese.
B3	Capacidade para a procura, análise, selección, utilización e xestión da información.



B4	Coñecementos de informática relativos ao ámbito de estudo.
B5	Capacidade para a resolución de problemas.
B6	Capacidade para a toma de decisións.
B7	Capacidade de traballo en equipo.
B8	Capacidade para traballar nun equipo de carácter interdisciplinario.
B12	Razoamento crítico.
B14	Aprendizaxe autónomo.
B16	Capacidade de aplicar os coñecementos na práctica.
B23	Orientación a resultados.
B25	Hábito de estudo e método de traballo.
B26	Capacidade de razoamento, discusión e exposición de ideas propias.
B27	Capacidade de comunicación a través da palabra e da imaxe.
B30	Sensibilidade cara a temas relacionados coa protección, conservación e posta en valor do patrimonio cultural e arquitectónico.
C1	Adequate oral and written expression in the official languages.
C3	Using ICT in working contexts and lifelong learning.
C4	Acting as a respectful citizen according to democratic cultures and human rights and with a gender perspective.
C5	Understanding the importance of entrepreneurial culture and the useful means for enterprising people.
C6	Acquiring skills for healthy lifestyles, and healthy habits and routines.
C7	Developing the ability to work in interdisciplinary or transdisciplinary teams in order to offer proposals that can contribute to a sustainable environmental, economic, political and social development.
C8	Valuing the importance of research, innovation and technological development for the socioeconomic and cultural progress of society.

Learning outcomes			
Learning outcomes	Study programme competences		
Coñecer os materiais, tecnoloxías, equipos, sistemas e procesos construtivos propios da edificación en xeral e en particular aqueles específicos de Galicia.	A2	B1	C3
	A3	B3	C6
	A5	B4	C7
	A6	B5	C8
	A18	B6	
		B7	
		B8	
		B12	
		B14	
		B16	
	Capacidade para a resolución de problemas.	B23	
		B25	
		B26	
B27			
B30			
		B5	C1
		C4	
		C5	

Contents	
Topic	Sub-topic



LESSON 01 .- BUILDING CONSTRUCTION	<p>General concepts and historical overview: Definitions. Construction. Background of the Engineering Building. Engineering Education Building</p> <p>General analysis of the construction process: Key elements of a building. Complementary elements. Equipment. Auxiliaries. The building in the history</p> <p>The Law of Construction Planning</p> <p>The Technical Building Code</p>
LESSON 02 .- THE LAND ISSUE AND EARTHMOVING	<p>Introduction to the nature and origin of soils. Degrees of weathering of rocks. Soils. Spanish classification of land according to the CTE. Elementary properties. General. Geotechnical study. The CTE and the geotechnical study.</p> <p>Earthworks: Definition. Previous actions. Preparatory operations. Complementary works. Remove. Pouring. Ditches. Wells. Fillings. Embankments. Unstable slopes. Building on the works of earth fills and embankments compaction. SpongeBob and settlement of land. Digs ground. Drains. Geotextiles.</p> <p>Support facilities in earthworks: Shoring. Shoring. Other methods of shoring and restraint. Auxiliary buildings on the waterfront.</p>
LESSON 03 .- STRUCTURE	<p>Structure: Requirements for the structures. Shares in the building. Types of operations or loads. Structural parts. Loads and stresses. Safety factors. Crack deformation.</p> <p>Types of structures: Types of structures by component.</p>
LESSON 04 .- THE FOUNDATION	<p>The foundation: Names of terrain features and the shoe. Behavior field. Pressures on the ground. Propagation of stress. Seating area. Constraints of design and construction of a foundation.</p> <p>Classification of foundations: According to their construction materials. According to its depth. Stable foundation on land: Types. Foundations on unstable ground: Types.</p>
LESSON 05 .- CONTAINMENT STRUCTURES	<p>Retaining walls: Nomenclature. Types of retaining walls. Construction conditions of the retaining walls.</p> <p>Basement walls, basement walls typologies. Construction conditions.</p> <p>Earth pressure: Pressure and thrust. Types. Actions on the wall. Equilibrium conditions of the wall.</p> <p>Screens foundations: Types of retaining walls. Slurry wall construction process.</p> <p>Brackets supporting pillars. Excavation bracing walls and screen. Other systems display bracing walls</p>
LESSON 06 .- STONE PLANTS	<p>Factories masonry: Definitions. Running factories masonry. Types of masonry.</p> <p>Factories quarrying: Classes stones used in factories. Nomenclature used in stone mills. Levels in the stonework. The stone work. Transport of blocks. Running stalls factories. Masonry manufacturing gear. Ashlar gear factories. Provision for the coronation of enclosure walls. Durability of the stones. Protection of the stones. Word of the blocks</p>
LESSON 07 .- THE ARCH AND VAULT	<p>The arc: Components of the arc. Materials from the arc. Structural behavior of the arc. Classification of arches form. The arc discharge. The spontaneous discharge arc. Classification defined surfaces. Union of arcs with the factory. Construction of the arches. Calculation and verification of the arc. Absorption of effort in support. Broken arches. New technologies.</p> <p>The Vault: Vaults simple. Domes. Vaults made??. Timbrel vaults. Construction and materials. Structural behavior. Other construction elements.</p>



LESSON 08 .- THE STRUCTURAL FLOORS AND STAIRS	<p>Horizontal structural elements: Forged. Definition. Functions performed by the cast.</p> <p>Types of floor: concrete slab. Forged metal. Composite floors. Wooden floors.</p> <p>Historical development of the slabs. Reinforcement in slabs. Metal sections. Ribbed plates. Spans. Separators.</p> <p>Types of Forged: Forged flat slab. Ribbed floor. Floor joists military. Prestressed slabs. Forged prelates. Forged hollow core. Special Forgings. Slabs without beams of reinforced concrete.</p> <p>Stairs: Conditions that must comply with the stairs as the CTE. Parts of a ladder.</p> <p>Geometric layout of the ladder: Proportion of the steps. Classification of the stairs.</p> <p>Wood stairs. Compensation curved staircases. Provision of railings.</p>
TEMA 09.- LA ESCALERA	<p>09.01.- Definiciones.</p> <p>09.02.-Tipologías.</p> <p>09.03.-Normativa.</p>
LESSON 09 .- COVER	<p>Cover: Names of a cover. Classification and covers general concepts: Because of its shape. By its use. From the position of the elements. For their hygrothermal behavior.</p> <p>The flat roof: modern flat roof solutions. Components of the inverted roof. Other types of flat roof.</p> <p>The sloped roof: Components. Cover materials: asphalt plates. Texas. Slate. Slate. Metal.</p>
LESSON 11 .- THE LAYOUT	<p>The Stakeout: Preliminary considerations. Rethinking processes and methods. The practice of setting out on site.</p> <p>Rethinking building: Rethinking the earthworks. Staking out the foundation and structure. Staking vertical walls. Tools stake.</p>

Planning

Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Objective test	A2 A3 A5 A6 A18 B30 B27 B26 B25 B23 B16 B14 B12 B8 B7 B6 B5 B4 B3 B1 C1 C3 C4 C5 C6 C7 C8	4	145	149
Personalized attention		1	0	1

(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

Methodologies	Description
Objective test	<p>REVIEW</p> <p>Will be held on the dates specified for that purpose by the Board of the Centre. No tests will be biased. There will be a first opportunity for a second in June and July. The minimum that must be obtained in the test pair to make half the course work is 3.5 out of 10.</p>

Personalized attention

Methodologies	Description
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Objective test	<p>The consultations of the work shall be supervised by the teacher in the classroom during the class of supervised work.</p> <p>In general, all the doubts that arise from reading the notes of the subject, which will be available to students in the Moodle page, the teacher will meet the students' questions via email from Moodle page.</p> <p>Nevertheless, if the profesor creates the desirable, what the student considers it necessary to ask the teacher rotten su customized upon request via email virtual college. By mutual agreement be set day and time for personal attention to students. If teachers predicted by the personal attention of two hours per student / course.</p>
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Assessment			
Methodologies	Competencies	Description	Qualification
Objective test	A2 A3 A5 A6 A18 B30 B27 B26 B25 B23 B16 B14 B12 B8 B7 B6 B5 B4 B3 B1 C1 C3 C4 C5 C6 C7 C8	<p>EXAMINATION</p> <p>It will value the solution of the questions, the accuracy in the result, the quality of graphics and sketches and drawins. To be able to combinate with other works must obtain a minimum grade of 4 over 10.</p>	100
Others			

Assessment comments
<p>Dont exists part-exams. These criterials evaluation are valid if it complies to the maximum number of students per group approved by Rectorate, otherwise, the teachers will adopt a criterion for evaluating the execution of a exam that he counted 100% of the note course, for all the oportunities corresponding to the subject.</p>

Sources of information	
Basic	<p>BIBLIOGRAFÍA CONSTRUCCIÓN I AUTOR PBD TÍTULO LUGAR_EDITORIAL T_R ID E._Gonzalez_Velayos 2000</p> <p>Aparejadores._Breve_historia_de_una_larga_profesión Madrid._CGCOAAT Libro J._Ferri_y_otros 2001</p> <p>Apuntes_de_iniciación_a_la_Construcción Alicante._Club_Universitario Libro Marta_Suárez_Baldonado 2006</p> <p>Construcción_con_tierra Santiago._CGCAAT Libro Manuel_Méndez_LLoret 2002</p> <p>Diccionario_básico_de_la_construcción Barcelona._CEAC Libro Carles_Broto 2001</p> <p>Diccionario_Técnico_Arquitectura_y_Construcción Instituto_Monsa_de_Ediciones_SA Libro</p> <p>A._Gonzalez_Rodriguez_y_otros 2004 Diccionario_visual_da_construcción Santiago._COAG Libro</p> <p>J._Vazquez_Castro_y_otros 2001 El_Aparejador_y_su_profesión_en_Galicia.</p> <p>De_los_Maestros_de_Obras_a_los_Arquitectos Santiago._CGCOAAT Libro Félix_L._Suárez_Riestra 2009</p> <p>Estudio_Geotécnico_y_Mecánica_de_Suelos Santiago._CGCAATEE Libro Francisco_Arquero 2004</p> <p>Práctica_constructiva Madrid._CEAC Libro Nueva_Enciclopedia_del_encargado_de_obras 2001</p> <p>Tecnología_de_la_construcción Madrid. CEAC Libro Luis_Ferre_de_Merlo 2003</p> <p>Tecnología_de_la_construcción_básica Alicante._Club_Universitario Libro Alberto_Serra_Hamilton 1997</p> <p>Términos_ilustrados_de_arquitectura_construcción_y_otros_artes_y_oficios Madrid._COAAT Libro</p> <p>Luis_Jimenez_Soto 2003 Trabajos_de_albañilería._Práctica_constructiva Madrid._CEAC Libro R. Avendaño 1989</p> <p>Apuntes_de_Construcción_I Madrid._Escuela_de_TT Libro G._Baud 1994 Tecnología_de_la_Construcción</p> <p>Barcelona._Blume-Naturat_SA Libro F._Casinello_Pérez 1961 Arcos_de_ladrillo Madrid._Patronato_J_d_C._CSIC</p> <p>Libro F._Casinello_Pérez 1962 Bóvedas_de_ladrillo Madrid._Patronato_J_d_C._CSIC Libro F._Casinello_Pérez</p> <p>1971 Obras_de_fábrica Madrid._Patronato_J_d_C._CSIC Libro F._Casinello_Pérez 1971 El_ladrilo_y_sus_fábricas</p> <p>Madrid._Patronato_J_d_C._CSIC Libro Ministerio de Fomento 2006 Código_técnico_de_la_edificación_CTE</p> <p>Madrid._978-84-9372-089-6 Libro Ministerio de Fomento 2008 Instrucción_de_hormigón_estructural_EHE-08</p> <p>Madrid._978-84-498-0830-2 Libro .../...</p>
Complementary	



Recommendations

Subjects that it is recommended to have taken before

Mathematics I [In extinction]/670G01001
Applied Physics I [In extinction]/670G01002
Materials I [In extinction]/670G01003
Architectural Graphic Expression I [In extinction]/670G01008
Geometry of Illustrations/670G01018

Subjects that are recommended to be taken simultaneously

Descriptive Geometry [In extinction]/670G01004

Subjects that continue the syllabus

Construction II/670G01011
Materials II/670G01012
Auxiliary and Security Equipment/670G01026
Construction III/670G01017
Topography/670G01020
Organisation, Programming and Control/670G01021
Construction IV/670G01022
Technical Projects I/670G01023
Technical Projects II/670G01027
Administration, Leadership and Management of Construction/670G01028
Pathology and Rehabilitation/670G01029
Measurements, Budgets and Economic Control/670G01030
Security and Prevention/670G01031
Galician Architectural Heritage/670G01041

Other comments

For any discrepancy in the teaching guides in any language will be valid the Spanish one.

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.