



Teaching Guide

Identifying Data					2016/17
Subject (*)	Construction 1	Code		630G01010	
Study programme	Grao en Arquitectura				
Descriptors					
Cycle	Period	Year	Type	Credits	
Graduate	2nd four-month period	First	Obligatoria	6	
Language	SpanishEnglish				
Teaching method	Face-to-face				
Prerequisites					
Department	ComposiciónConstrucións ArquitectónicasProxectos Arquitectónicos e UrbanismoRepresentación e Teoría Arquitectónica				
Coordinador	Souto Garcia, Valentin Balbino	E-mail	valentin.souto@udc.es		
Lecturers	Souto Garcia, Valentin Balbino	E-mail	valentin.souto@udc.es		
Web	https://moodle.udc.es/course/view.php?id=29486				
General description	<p>This course has a broad objective: mainly to provide a framework in which each student could locate and understand the different elements and skills that he will be learning in the coming years within the Construction Technologies core. This broad objective can be also defined by more specific objectives, in the other words, at the end of this course each student should be able to:</p> <ul style="list-style-type: none"> -Structure properly the different topics that will be taught during the following years throughout his studies at this University ?UDC- within the core of Construction Architectural Technologies ??Construcciones Arquitectónicas?-. -To recognize the different materials, elements and construction systems, as well as its different characteristics and general requirements. -To represent accurately the different elements and construction systems. -To recognize clarity, accuracy and skills within the discipline of Construction Technologies. -Mastering the specific vocabulary for the different Construction Technologies. <p>All of this according to the codes and actual regulations related to the Building Construction.</p>				

Study programme competences

Code	Study programme competences
A4	PROGRAMACIÓN FUNCIONAL: aptitude ou capacidade para elaborar programas de edificios, considerando os requisitos de clientes e usuarios, analizando os precedentes e as condicións de localización aplicando estándares e establecendo dimensións e relacións de espazos e equipos.
A11	XESTIÓN DE NORMAS CONSTRUCTIVAS: aptitude ou capacidade para aplicar as normas de construción, de homologación, de protección, de mantemento, de seguridade e de cálculo nos proxectos integrados e na execución, tanto de obras de edificación como de espazos urbanos.
A19	ADECUACIÓN MEDIOAMBIENTAL: aptitude ou capacidade para realizar estudos medioambientais e paisaxísticos, e definir medidas de protección fronte ao impacto ambiental.
A27	PROXECTO DE OBRA GROSA: aptitude ou capacidade para dimensionar, deseñar, programar e poñer en obra e integrar en edificios e conxuntos urbanos as solucións construtivas, encontros e remates dos sistemas de obra groma, pechamento, cuberta, e en detalle, e tamén para asesorar tecnicamente sobre estes aspectos.
A47	ECOLOXÍA E SOSTENIBILIDADE: comprensión ou coñecemento da responsabilidade do arquitecto respecto aos principios básicos de ecoloxía, de sustentabilidade e de conservación dos recursos e do medio ambiente na edificación, o urbanismo e a paisaxe.
A58	MATERIAIS DE CONSTRUCCIÓN: comprensión ou coñecemento das características físicas e químicas, os procedementos de fabricación e homologación, a análise patolóxica e as aplicacións e restricións de uso dos materiais empregados en obra estrutural, civil, groma e acabada.
A59	SISTEMAS CONSTRUTIVOS CONVENCIONAIS: comprensión ou coñecemento das características físicas, os procedementos de fabricación e homologación, os tratamentos e acabados, a organización dimensional, os métodos de montaxe e a análise patolóxica dos compoñentes construtivos convencionais na obra estrutural, civil, groma e acabada.



A60	SISTEMAS CONSTRUTIVOS INDUSTRIALIZADOS: comprensión ou coñecemento dos procedementos de produción industrial e homologación, os tratamentos e acabados, a coordinación modular e dimensional e os métodos de montaxe dos sistemas prefabricados e de alta tecnoloxía en obra estrutural, civil, grosa e acabada.
B1	Learn how to learn
B2	Resolver problemas de forma efectiva.
B3	Aplicar un pensamento crítico, lóxico e creativo.
B6	Comportarse con ética e responsabilidade social como cidadán e como profesional.
B8	Visión espacial.
B9	Creatividade.
B10	Sensibilidade estética.
B12	Toma de decisións.
B13	Imaxinación.
B14	Habilidade gráfica xeral.
B15	Capacidade de organización e planificación.
B16	Motivación pola calidade.
C1	Expresarse correctamente, tanto de forma oral coma escrita, nas linguas oficiais da comunidade autónoma.
C3	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.
C4	Desenvolverse para o exercicio dunha cidadanía aberta, culta, crítica, comprometida, democrática e solidaria, capaz de analizar a realidade, diagnosticar problemas, formular e implantar solucións baseadas no coñecemento e orientadas ao ben común.
C5	Entender a importancia da cultura emprendedora e coñecer os medios ao alcance das persoas emprendedoras.
C6	Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.
C7	Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.
C8	Valorar a importancia que ten a investigación, a innovación e o desenvolvemento tecnolóxico no avance socioeconómico e cultural da sociedade.

Learning outcomes			
Learning outcomes	Study programme competences		
<p>Become aware of the correlation between architectural design and construction solutions, the constraints imposed by the physical, chemical and mechanical properties of building materials and construction systems for the execution of works features.</p> <p>Acquiring the basic vocabulary of the construction which permits identification of members of the major building systems and structural foundations, vertical walls, roofs, vertical communications, partitions and window and door joinery elements.</p> <p>Knowing the basics of building structural systems with load-bearing walls and arcaded factory with metal and concrete elements in correspondence with constructive solutions to cover the vain systems: systems of wood and stone lintels, vaulted systems and horizontal slabs, floor slabs, plates. Industrialized slabs, nerves and joists.</p> <p>Know the elements of building systems of surface and deep foundations and retaining walls and understand the logic of its operation and implementation procedures.</p> <p>Know the basic building design conditions of vertical communications, stairs and ramps, the escape routes of the buildings and of the barriers to protect slopes.</p> <p>Knowing elementary level the construction and design of the vertical walls to fulfill thermal conditions, hygrothermal, acoustic, fire protection and stability and resistance to mechanical conditions.</p> <p>Knowing elementary constructive elements design conditions lighting and ventilation of buildings.</p> <p>Knowing elementary level the construction and design of slanted and flat for the fulfillment of the conditions of waterproof, thermal, hygrothermal, acoustic and fire protection overcast conditions.</p> <p>Knowing elementary level the construction and design of the elements of heavy or lightweight partitions.</p> <p>https://guiadocente.udc.es/docencia/images/refresh.gif</p>	A4	B1	C1
	A11	B2	C3
	A19	B3	C4
	A27	B6	C5
	A47	B8	C6
	A58	B9	C7
	A59	B10	C8
	A60	B12	
		B13	
		B14	
		B15	
		B16	



Contents	
Topic	Sub-topic
Architecture and construction	1. Architecture and construction 2. Physical environment and materials
The building and structure	3. Introduction to the structure 4. Compression 5. Traction 6. Flexion 7. Reinforced concrete as a structural material 8. Steel as a structural material 9. Foundations and retaining walls
Envelope	10. Anatomy of a building 11. Vertical enclosures 12. Sloping roofs 13. Flat roofs
Climate and use control	14. Vertical communications 15. Internal partitions 16. Coatings 17. Installations in a building

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student's personal work hours	Total hours
Workshop	B1 B2 B3 B6 B8 B9 B10 B12 B13 B14 B15 B16	0	40	40
Student portfolio	B1 B2 B3 B6 B8 B9 B10 B12 B13 B14 B15 B16 C1 C3 C4 C5 C6 C7 C8	0	30	30
Objective test	A60 A59 A58 A47 A27 A19 A11 A4	4	75	79
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
Workshop	Face non-performing individual exercises, according to the statements that will be published during the course. The exercises must be submitted on the exam dates for both opportunities.
Student portfolio	Individual realization of a sketchbook to collect building systems studied in the course according to the statements that will be published along the course.
Objective test	Written exam in which the student must individually resolve issues related to topics covered in the course.

Personalized attention	
Methodologies	Description
Student portfolio Workshop	Personal attention will be developed on the tutorial sessions in which teachers advise students about their evolving work in progress.

Assessment



Methodologies	Competencies	Description	Qualification
Student portfolio	B1 B2 B3 B6 B8 B9 B10 B12 B13 B14 B15 B16 C1 C3 C4 C5 C6 C7 C8	Calification of the estudent portfolio which statements will be published during the course Student portfolio assessment will be made only if presented bound, full and neat.	20
Objective test	A60 A59 A58 A47 A27 A19 A11 A4	The score for each of the theoretical and practical exercises will be indicated in the statement of the Objective test.	50
Workshop	B1 B2 B3 B6 B8 B9 B10 B12 B13 B14 B15 B16	Calification of practical exercises which statements will be published during the course, on condition that each exercise obtains a 40% of the maximum possible.	30

Assessment comments

The students of the Bologna 1 -non-teaching - can attend classes and are encouraged to do so, in which case they will have equal conditions of evaluation to students of the Bologna 2. In case of absence, the evaluation will be done with differential test (50%, minimum 4) and the day of the exam they will have to present all the practices (30%, minimum 4 on each), and their portfolio (20%).

In the case of attendance at classes, to carry out the global assessment of the subject in each of the two occasions, both in the first and in the second, they will have the same conditions as the students of the Bologna 2, and as a result of it, the student will need:

To make an overall assessment of the course in each of the two occasions -first and second-,

1. Perform Objective test, obtaining at least 40% of the maximum possible score.
2. Present all practices at the Workshop, obtaining at least in each, 40% of the maximum possible score.
3. Attend in person, at least 80% of the Sessions lectures and the Workshop, except for duly justified reason.
4. Deliver full Portfolio.
5. Deliver notes of Sessions taken in the classroom.

If no comply with these requirements, the student will appear in the minutes of the opportunity as 'Not submitted'.

Sources of information

Basic	- Fernández Madrid, J. y Esteban Fernández-Cobián (1984/2008). Construcción 1. Apuntes (2 vol.). A Coruña: Reprografía del Noroeste
Complementary	- Ching, F.D.K. (1997). Diccionario visual de arquitectura. Barcelona: Gustavo Gili - Schmitt, H. (1998). Tratado de construcción. Barcelona: Gustavo Gili - Gordon, J.E. (1999). Estructuras o por qué las cosas no se caen. Madrid: Celeste - Allen, E. (1997). Cómo funciona un edificio. Principios elementales. Barcelona: Gustavo Gili - Torroja Miret, E. (1996). Razón y ser de los tipos estructurales. Madrid: CSIC - González Moreno-Navarro, J.L. y otros (1997). Claves del construir arquitectónico. Tomo 1. Principios. Barcelona: Gustavo Gili - Paricio Ansuategui, I. (1999). Vocabulario de arquitectura y construcción. Barcelona: Bisagra - Souto García, V. (2016). 1450 preguntas sobre construcción arquitectónica. A Coruña: Reprografía del Noroeste

Recommendations

Subjects that it is recommended to have taken before

Architectural Drawing/630G01002
Introduction to Architecture/630G01005

Subjects that are recommended to be taken simultaneously



Physics 1/630G01008

Subjects that continue the syllabus

Construcción 2/630G01020

Other comments

The teaching of this subject, as well as testing and assessment tests will be adapted to the learning conditions of students performing mobility programs.

(*)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.