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	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: -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. All of this according to the codes and actual regulations related to the Building Construction.			

Study programme competences / results	
Code	Study programme competences / results
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 grosa, 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 sostenibilidade 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, grosa 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, grosa 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 / results

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. 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. 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. Know the elements of building systems of surface and deep foundations and retaining walls and understand the logic of its operation and implementation procedures. 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. 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. Knowing elementary constructive elements design conditions lighting and ventilation of buildings. 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. Knowing elementary level the construction and design of the elements of heavy or lightweight partitions. https://guiadocente.udc.es/docencia/images/refresh.gif	A4 A11 A19 A27 A47 A58 A59 A60	B1 B2 B3 B6 B8 B9 B10 B12 B13 B14 B15 B16	C1 C3 C4 C5 C6 C7 C8

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 / Results**	**Teaching hours (in-person & virtual)**	**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 / Results**	**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%, mínimum 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
Construción 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.