Teaching Guide				
Identifying Data				2022/23
Subject (*)	Construction 1		Code	630G02010
Study programme	Grao en Estudos de Arquitectura			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	2nd four-month period	First	Obligatory	6
Language	SpanishEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Construcións e Estruturas Arquitectónicas, Civís e Aeronáuticas			
Coordinador	Fernandez Cobian, Esteban		E-mail	esteban.fcobian@udc.es
Lecturers	Amo Perez, Maria Pilar De Amor Cagiao, Jose Antonio Fernandez Cobian, Esteban Seoane González, José Carlos		E-mail	m.pilar.amo@udc.es j.amor@udc.es esteban.fcobian@udc.es carlos.seoane@udc.es
Web	moodle.udc.es/course/view.php?id=29486			
General description	This course aims to provide the student with a frame of reference which let him locate and understand the knowledge in the subjects of construction of further courses. In other words, at the end of the course, the student should be able of: - Locate correctly the contents of subjects in the area of architectural constructions which will be taught throughout their studies in the University. -Recognize the materials, elements and construction systems, as well as its characteristics, grasp and general requirements -represent accurately the elements and building systems -Rating accuracy and clarity in the discipline of the construction -Mastering the vocabulary of the Construction. In a transversal way, the course pays special attention to the concepts of ecology and economy of resources, taking as an example the way in which traditional architecture responds to the climate, the characteristics of the environment and the availability of local materials. Likewise, there is the pedagogical intention of relying on the experience acquired throughout history as a basis for the execution of the architectural project based on the principles of sustainable construction.			

Study programme competences	
Code	Study programme competences
A12	Ability to conceive, calculate, design, integrate in buildings and urban units and execute building structures (T)
A13	Ability to conceive, calculate, design, integrate in buildings and urban units and execute interior partition walls, carpentry, stairs and other finished work (T)
A14	Ability to conceive, calculate, design, integrate in buildings and urban units and execute exterior walls and cladding, roofing and other structural work (T)
A15	Ability to conceive, calculate, design, integrate in buildings and urban units and execute foundation solutions (T)
A17	Ability to apply technical and construction standards and regulations
A25	Adequate knowledge of conventional construction systems and pathology
A26	Adequate knowledge of the physical and chemical characteristics, production procedures, pathology and use of building materials
A27	Adequate knowledge of industrialized building systems
A39	Ability to remove architectural barriers (T)
A41	Ability to solve the passive environmental conditioning, including thermal and acoustic insulation, climate control, energy efficiency and natural lighting (T)
A63	Development, presentation and public review before a university jury of an original academic work individually elaborated and linked to any of the subjects previously studied

B1	Students have demonstrated knowledge and understanding in a field of study that is based on the general secondary education, and is usually at a level which, although it is supported by advanced textbooks, includes some aspects that imply knowledge of the forefront of their field of study
B2	Students can apply their knowledge to their work or vocation in a professional way and have competences that can be displayed by means of elaborating and sustaining arguments and solving problems in their field of study
B3	Students have the ability to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues
B4	Students can communicate information, ideas, problems and solutions to both specialist and non-specialist public
B5	Students have developed those learning skills necessary to undertake further studies with a high level of autonomy
B6	Knowing the history and theories of architecture and the arts, technologies and human sciences related to architecture
B7	Knowing the role of the fine arts as a factor that influences the quality of architectural design
B9	Understanding the problems of the structural design, construction and engineering associated with building design and technical solutions
B10	Knowing the physical problems, various technologies and function of buildings so as to provide them with internal conditions of comfort and protection against the climate factors in the context of sustainable development
B11	"Knowing the industries, organizations, regulations and procedures involved in translating design concepts into buildings and integrating plans into planning "
B12	Understanding the relationship between people and buildings and between these and their environment, and the need to relate buildings and the spaces between them according to the needs and human scale
C1	Adequate oral and written expression in the official languages.
C2	Mastering oral and written expression in a foreign language.
C3	Using ICT in working contexts and lifelong learning.
C4	Exercising an open, educated, critical, committed, democratic and caring citizenship, being able to analyse facts, diagnose problems, formulate and implement solutions based on knowledge and solutions for the common good
C5	Understanding the importance of entrepreneurial culture and the useful means for enterprising people.
C6	Critically evaluate the knowledge, technology and information available to solve the problems they must face
C7	Assuming as professionals and citizens the importance of learning throughout life
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

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.	A12 A13 A14 A15 A17 A25 A26 A27 A39 A41 A63	B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12	C1 C2 C3 C4 C5 C6 C7 C8

Contents	
Topic	**Sub-topic**
Introduction	01. Traditional architecture and sustainability
Building materials	02. Building with earth 03. Brick 04. Brick: bonding 05. Stone 06. Wood 07. Concrete 08. Steel 09. Glass
Structure	10. The building and structure 11. Traction and compression 12. Blending: wood and metal slabs (deck) 13. Concrete as a structural material 14. Concrete slabs 15. Steel as a structural material 16. Retaining walls and foundations

Envelope	17. Enclosures: construction systems 18. Openings and windows 19. Pitched roofs 20. Flat roofs 21. Coatings
Climate and use control	22. Habitability: general issues 23. Vertical communications 24. Thermal conditions of buildings 25. Waterproofing in buildings 26. Interior partitions 27. Installations

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Workshop	B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C2 C3 C4 C5 C6 C7 C8	1.5	60	61.5
Student portfolio	B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C2 C3 C4 C5 C6 C7 C8	25.5	0	25.5
Objective test	A12 A13 A14 A15 A17 A25 A26 A27 A39 A41 A63	4	30	34
Guest lecture / keynote speech	A12 A13 A14 A15 A17 A25 A26 A27 A39 A41 A63 C1 C2 C3 C4 C5 C6 C7 C8	28	0	28
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. The exercises will be presented and supervised by teachers in the classroom.
Student portfolio	Individual realization of a sketchbook to collect building systems studied in the course. The sketchbook will be performed in the classroom.
Objective test	Written exam in which the student must individually resolve issues related to topics covered in the course.
Guest lecture / keynote speech	Development and explanation of the topics of the course by the teacher. Realization of a booklet of notes taken by the students, in which they collect the explanations given by the teachers. The notebook will be presented on the day of the exam. It will be valued the effort to add additional information to the provided by professors.

Personalized attention	
Methodologies	Description
Student portfolio Workshop	Personal attention will be developed during the practical classes in which teachers advise students about their evolving work in progress.

Assessment			
Methodologies	Competencies	Description	Qualification
Student portfolio	B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C2 C3 C4 C5 C6 C7 C8	Student portfolio assessment will be made only if presented bound, full and neat.	15
Objective test	A12 A13 A14 A15 A17 A25 A26 A27 A39 A41 A63	The score for each of the theoretical and practical exercises will be indicated in the statement of the Objective test.	50
Guest lecture / keynote speech	A12 A13 A14 A15 A17 A25 A26 A27 A39 A41 A63 C1 C2 C3 C4 C5 C6 C7 C8	The notes of the subject taken by the students in the expository classes will be evaluated. The effort made to complete the information will be taken into account through searches carried out by the students through the available sources: bibliography, webgraphy, commercial information, etc. The notes will be written in manuscript and the inclusion of the drawings and sketches made by the teachers in the lectures will be especially appreciated.	5
Workshop	B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C2 C3 C4 C5 C6 C7 C8	The precision in the drawing, as well as the clarity and cleanliness in the presentation of the works will be especially valued.	30

Assessment comments
In order to be evaluated globally of the course in any of the two opportunities it will be necessary: 1. To have attended at least 80% of the Master Sessions, except for documented force majeure. 2. To present all the practices carried out in the Workshop. 3. Submit the complete Portfolio. 4. Submit the notes taken in the Master Sessions. 5. To take the objective test. In the case that the student does not present any of the scoring items of the subject on the day of the exam, it will appear as 'Not presented' in the minutes of the corresponding opportunity. In the event that the student does not achieve a grade equal to or higher than 4 points out of 10 in any of the items of the subject, the student will appear as 'Failed' in the report of the corresponding opportunity, even if the general average is higher than 5 points out of 10. The numerical score will be the lowest among all items. In the second opportunity, only those items in which a grade of 4 points out of 10 has not been reached will be required. The student who repeats the course will not have to retake the exercises in which he/she obtained a grade equal to or higher than 8 points out of 10 in the last academic year. No dedication measures are contemplated for part-time students, due to the fact that this is a subject in which the workshop is a fundamental methodology. No academic dispensation is contemplated, since it is a subject in which the workshop is a fundamental methodology. The detection of plagiarism, as well as the fraudulent performance of tests or evaluation activities, once verified, will directly imply the grade of 'Fail 0' in the subject in the corresponding call, thus invalidating any grade obtained in all evaluation activities for the second opportunity.

Sources of information	
Basic	- Fernández Madrid, J., Esteban Fernández-Cobián (1984/2008). Construcción 1. Apuntes (2 vol.). A Coruña: Reprografía del Noroeste ----

Complementary	- Allen, E. (1997). Cómo funciona un edificio. Principios elementales. Barcelona: Gustavo Gili - Ching, F.D.K. (1997). Diccionario visual de arquitectura. Barcelona: Gustavo Gili - González Moreno-Navarro, J.L. et al. (1997). Claves del construir arquitectónico. Tomo 1. Principios. Barcelona: Gustavo Gili - Gordon, J.E. (1999). Estructuras o por qué las cosas no se caen. Madrid: Celeste - Paricio Ansuategui, I. (1996). La construcción de la arquitectura (Vol. 2. Los elementos). Barcelona: Bisagra - Schmitt, H. (1998). Tratado de construcción. Barcelona: Gustavo Gili - Kahn, Ll. (1993). Cobijo. Madrid: Tursen/Hermann Blume

Recommendations
Subjects that it is recommended to have taken before
Introduction to Architecture/630G02005
Subjects that are recommended to be taken simultaneously
Physics for Architecture 1/630G02008
Subjects that continue the syllabus
Construction 2/630G02020
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.