Teaching Guide				
Identifying Data				2023/24
Subject (*)	Construction 4		Code	630G02027
Study programme	Grao en Estudos de Arquitectura			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	2nd four-month period	Third	Obligatory	6
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Construcións e Estruturas Arquitectónicas, Civís e Aeronáuticas			
Coordinador	Bermudez Graiño, Jose Manuel		E-mail	jose.bermudez@udc.es
Lecturers	Ansede Viz, Cristina Margarita Bermudez Graiño, Jose Manuel Muñoz Fontenla, Carlos M. Pérez Rodríguez, Alberte Rodriguez Garcia, Enrique		E-mail	cristina.ansede@udc.es jose.bermudez@udc.es c.fontenla@udc.es alberte.perez@udc.es enrique.rodriguez.garcia@udc.es
Web				
General description	Study of the materials, elements and construction systems of buildings with an arcaded structure made of reinforced concrete. The development of construction systems includes: historical framework, typologies, materials, regulations, conception, design, safety, assessment, prescription, conservation, pathologies and repair.			

Study programme competences / results	
Code	Study programme competences / results
A12	Ability to conceive, calculate, design, integrate in buildings and urban units and execute building structures (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
A18	Ability to maintain building structures, foundations and civil works
A20	Ability to assess the construction works
A21	Ability to maintain the structural work
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
A31	Knowledge of methods of measurement, assessment and expert´s report
A32	Knowledge of the project of health and safety at the construction site
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
B8	Knowing the urbanism and techniques applied in the planning process

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.
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 / results		
Train the student To enable the student to design the construction on the basis of the architectural approach. To provide them with the necessary knowledge to appreciate the architectural repercussions of each construction system and each material in the project, trying to find the difficult balance between the project and its construction.	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63	B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12	C1 C3 C4 C5 C6 C7 C8
Initiate to learn about concrete portico systems based on the study of relevant buildings, using practical classes. The performance of the system, the characteristics of the elements, the joints and the arrangement of all the elements, the qualities of the materials, all in pursuit of coherence with architectural idea and expression and functionality will be analysed. Finally, the course will move on to the specification and details of material and form and the handling of the applicable regulations.	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63	B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12	C1 C3 C4 C5 C6 C7 C8

Promote critical constructive reasoning that delves into the architectural and functional requirements "the "whys"" of a constructive element (colour, texture, functions), research into the way it is made "with what" and "how", and the discovery of the sensitivity, qualities and drawbacks of the material and its technological system.	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63	B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12	C1 C3 C4 C5 C6 C7 C8
Initiate the student in the development of project documents that express the architectural fact together with its construction, giving it rigor, specificity, coherence and clarity in its graphic and written expression.	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63	B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12	C1 C3 C4 C5 C6 C7 C8

Contents	
Topic	**Sub-topic**
1. Concrete	Concrete. Historical evolution. The first patents. The new aesthetic: the structural grid of Hennebique. The diaphanous factory. The new construction system and its architectural resolution: Perret, Le Corbusier and Gropius.
2. Porticoed systems	Porticoed systems in the architectural composition Historical aspects of porticoed systems. Contrast between the spaces of the architecture of load-loading walls and that of porticoed systems. Porticoed systems and partitions: sorting and relationship. The corner in the gantries systems. Operation of a bar system.
3. Mechanical stresses	Mechanical stresses. units. Fragility, plasticity, elasticity, rigidity. Compression, traction, bending, shearing and twisting; Buckling. flexion. Knots. Prestressed. Porticoed structures of H.A.
4. Cement	Composition of concrete. Binders and conglomerants. Lime, aerial conglomerate: calcination, dull and carbonation; hydraulic lime. PORTLAND cement. obtaining. Composition of the CLINKER. Composition of Portland cement. Cement setting: hydration heat, setting speed. Properties of cement. Types of cement [RC-08]. Cements with mandatory CE marking. Special cements with non-compulsory CE marking. Other cements. Types of cement [RC-08]: criteria for use. regulations. Recommended bibliography.
5. Aggregates	Aggregates: compactness of concrete. Gravels, sands and fines. Types of aggregates. Designation of aggregates. Conditions that aggregates must meet to make reinforced concrete. Shape and granolumetry of aggregates. Maximum size of the arid to be able to concrete. regulations. Recommended bibliography.

6. Water	Kneading water and hydration water. Water-cement ratio w/c. Negative consequences of too high a water-cement ratio. Characteristics that kneading water must have. regulations. Recommended bibliography.
7. Additives	Additives. Types. characteristics. regulations. Recommended bibliography.
8. Armor	Armor. Typology of armor. Properties of steel used in HA armatures. Rounds, wires. Ferralla armed. Folded armor. Separation of armor. Armature coating. Anchoring armor. Joint of armatures. Representation of the armatures in the structural plans of the execution project. regulations. Recommended bibliography.
9. Characteristics of concrete	Characteristics of fresh concrete. compactness. consistency. docility. homogeneity. Self-compacting concrete. Characteristics of hardened concrete. Mechanical resistances. density. Thermal expansion. Thermal conductivity. specific heat. Fire resistance. permeability. Frostiness. Wear resistance. Rheological properties of concrete. Retraction and numbness. Tiredness and fatigue. Creep. Typification of concretes. regulations. Recommended bibliography.
10. Special concretes	HAR; High-strength concretes (high-performance concretes). Conventional concretes. High strength concretes. Concretes of very high strength. HR; Recycled concretes (coarse arid from other concretes). HLE; Structural light concrete. HAC; Self-compacting concrete. HRF; Concrete reinforced with fibers (metallic, polymeric, glass, carbon). regulations. Recommended bibliography.
11. Durability of reinforced concrete	Factors determining the durability of the HA. Water/cement ratio. Aggressiveness of the exhibition environment. Coating of the armatures. Special protection measures. Commissioning and curing. compactness. Characteristics of the outer layer. Structural shape. regulations. Recommended bibliography.
12. Elaboration and commissioning of reinforced concrete	kneading. dosage. transport. Carried. Poured. Compacted. cured. Formwork. Dismembered. regulations. Recommended bibliography.
13. Formwork	Formwork: features. Unique formwork. Steel sheet formwork. Precast concrete formwork. Sliding formwork. Formwork with pressurized PVC membrane. Tunnel formwork. Industrialized formwork. regulations. Recommended bibliography.
14. Pillars, beams and porticoes	Pillars, beams and porticoes. Armor. Knots. Pillars. Beams. Flat beams. Wall beams. Ramps stairs. Short corbels. regulations. Recommended bibliography.
15. Floors I	Constructive elements and parts of the slabs. Types. Unidirectional slabs with joists. Bidirectional forgings. Plates on specific supports. regulations. Recommended bibliography.
16. Floors II	Alveolar slates. Prelosas. Membranes and sheets of HA. Regulation. Recommended bibliography.
17. Foundations	The terrain: types. Prospecting techniques. Typology of foundations. Encepados and piles. Rigid and flexible shoes. Lying beams and centering beams. Armor of encepados, piles and shoes. Constructive recommendations. regulations. Recommended bibliography.
18. Reinforced concrete walls	Reinforced concrete walls: typology. Land retaining walls. Basement walls. Walls of enclosure and load. Reinforced concrete roofs. regulations. Recommended bibliography.
19. Brief history of concrete I	The material and the systems.
20. Brief history of concrete II	The Concrete Architecture; the beginnings.
21. Concrete architecture 1	Concrete architecture. The contribution of engineers. Freyssinet. Maillart. Nervi. Torroja.
22. Concrete architecture 2	Concrete architecture in the First Modernity. Rudolf Steiner. Mendelson. Le Corbusier.
23. Concrete architecture 3	Concrete architecture in the Second Modernity. Kahn. Tange. Rudolf. Pietila.
24. Concrete architecture 4	Concrete architecture in Spain. Fisac. Carvajal.
25. Concrete architecture 5	Contemporary concrete architecture. Ando. Sanna. The Swiss experience.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	30	15	45
Workbook	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	0	10	10
Student portfolio	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	5	0	5
Objective test	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	6	0	6
Case study	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	5	15	20
Supervised projects	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	30	30	60
Personalized attention		4	0	4
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description

Guest lecture / keynote speech	Presentation in the classroom of the corresponding item of the program. At the beginning of the session, the index and summary of the topic will be displayed. The explanation will be supported with the necessary images and with the relevant synopic diagrams and tables. At the end of the session, a summary underlining the most important aspects will be made and further reading will be recommended. Students will collect comments, notes, references, computer links, web pages, complementary bibliography, catalogs, books, brochures, guides, etc ... nun Caderno of personalized diary, related to each theme gives construction exposto during each oneha das sessions teaching. You will be prepared by preparing an ordered summary document with these references.
Workbook	The students will read -throughout the course- the books, articles and documentation that the teachers indicate to them; in order to record their compliance, they shall submit in a timely manner the appropriate summaries of these readings.
Student portfolio	The students will collect on the basis of the Methodologies included in the asignatura (master sessions, readings, study of cases and works tutelados) in a Portafolio_CUADERNO_diario personalized comments, notes, references, computer links, web pages, complementary bibliography, catalogues, books, brochures, guides, etc. related to each construction topic exposed during each of the teaching sessions. The students will have to elaborate a document summary ordered with said references that has to present to previous evaluation obligatorily before the Objective Test of the asignatura.
Objective test	It will consist of a written exam on the theoretical contents of the subject. This test will include a practical question that will refer to the analysis and constructive development of the building proposed as a course practice.
Case study	Studies of real architectures built through a program of work visits will be carried out where to know, measure, analyze, investigate and even know direct explanations of the authors of Architectures of recognized quality and purposeful intensity. The students will carry out a constructive architectural study with individual drawings of the generality of each building detailing material elements and more significant construction systems. The realization and delivery of these analyses is mandatory and of prior and joint evaluation with objective test and supervised works.

Supervised projects	The Practices of the asignatura will be realized in AULA and in shared WORKSHOP. The CLASSROOM PRACTICES correspond exclusively to the subject: Construction 4; the WORKSHOP PRACTICES will partially share the teaching with the teachers belonging to the areas of knowledge that are integrated into the shared workshop of the corresponding course and semester. The teaching hours, total, of the Classroom Practices will be: 45. The teaching hours, total, of the Workshop Practices will be: 15. CLASSROOM PRACTICE: The CLASSROOM PRACTICE will consist of the realization of a work to be developed during the course. The delivery and realization of the practice will be individual. The practice will consist of the constructive analysis of a building with concrete structure. The building is selected at the beginning of the course among works by architects of recognized prestige. The necessary biography will be provided and will remain reserved in the library for consultation of the students. In addition, the documentation available in computer support will be deposited in the Computer Room of the ETSAC. There will be two deliveries and also a final, summary of the works carried out throughout the course and that collects the corrections indicated by each teacher. First installment. The first part of the work consists of the graphical analysis of the architecture of the proposed building. The plants, raised, a longitudinal vertical section and a transverse section will be drawn at a relevant scale. The plants will be bounded and the roofing plant will necessarily be included. The detailed and limited floors of thestructure of the building will also be delivered to a scale of 1/50, suitably labeled and with the specification of each structural element. The constructive details of the structure that each teacher deems relevant will also be presented. The maximum extent of a spread in A1 format. This delivery will also be made by computer means on the Moodle platform, in accordance with the characteristics indicated in said application. Second installment. It will consist of a rigid panel format A1, printed on both sides containing a vertical section of the building determined by each teacher for each student - as well as a horizontal section by a corner and a façade gap, at a scale 1/10 or 1/5. Each of the building elements and their parts shall be named and specified in detail in the relevant characteristic tables. The panel must also include the most relevant of the previous delivery. This delivery will also be made by computer means on the Moodle platform, in accordance with the characteristics indicated in said application. Final delivery. The final delivery will consist of a rigid panel with A1 format that includes the corrections made by the teacher, printed on both sides that contains a vertical section of the building ? determined by each teacher for each student ? as well as a horizontal section by a corner and a façade gap, at a scale 1/10 or 1/5. Each of the building elements and their parts shall be named and specified in detail in the relevant characteristic tables. The panel must also include the most relevant of the previous deliveries with the appropriate corrections. This delivery will also be made by computer means on the Moodle platform, in accordance with the characteristics indicated in said application. PRACTICE WORKSHOP: The shared Workshop Practice will consist of the study of the theme of architectural research agreed with the subjects included in the quarterly workshop (Projects + Urbanism + Construction + Structures) elaborating the pertinent constructive proposal of analysis and definition of architecture, its materialization and reasoned proposal of general constructive system. The delivery dates as well as the documentation to be presented will be governed by the agreed / coordinated conditions between the subjects of the Workshop. For the area of Architectural Constructions, the delivery will consist of two sheets A1, delivered folded in size A4, in which it is collected: elevations, plants and sections of the project; plants and sections of the structure; floor plans+elevations+sections of finished materials; and constructive proposal of architectural systems and more relevant details of the study and possible architecture projected by the student. This delivery will also be made by computer means on the Moodle platform, in accordance with the characteristics indicated in said application.

Personalized attention	
Methodologies	**Description**
Supervised projects Objective test	The importance of personalized attention is a consequence of the teaching objectives of the subject that do not consist only of informing or communicating more or less objective contents, but in forming: developing skills, ways of facing problems, stimulating creativity, critical spirit, etc. The personalized attention to the student will be carried out in the workshops and through personal interviews with the teacher. In the workshops, the different aspects of the practice will be explained together for the students of the group, but their particular work will be corrected and explained to each student. After each objective test, students who wish to do so will be received in order to comment on the aspects of the exam that they deem appropriate.

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Supervised projects	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	FIRST CHANCE: In order to pass the practical part of the course - Classroom Practice and Shared Workshop Practice - students must complete all the assignments scheduled throughout the course on time; they must submit the last assignment with the corrections indicated by the teacher; and they must obtain at least a grade of 5 points out of 10. The grade for the Classroom Practical Work, the grade for the Workshop Practical Work and the Case Studies will account for 70% of the total final grade, with 60%, 5% and 5% respectively. Failure to submit the aforementioned practical assignments will result in the student being considered as a non-submitted student. A minimum attendance of 80% will be required in order to be able to take the Practical Classroom part and the Practical Workshop part of the course. Failure to submit all or part of the Classroom Practical and Shared Workshop Practical exercises will result in a grade of NOT PRESENTED. SECOND CHANCE: If the student does not pass the course at the first opportunity, he/she will present the same work required at the first opportunity on the date set, incorporating the corrections and indications indicated by the teacher. It will be assessed with the same weighting coefficient in the final mark as the one given at the first opportunity. The revision of the exams will take place during the timetable set by the teachers of the subject. They will be announced sufficiently in advance on the Department's notice board. Throughout the course the student will be informed periodically of the results of the tests taken. If a grade of at least 4 points is not obtained in any part of the subject, the student will be considered as failing, even if the overall average of the grades is higher or equal to 5 points.	65

Workbook	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	Students will read -throughout the course- the books, articles and documentation indicated to them by the teachers; in order to record their compliance, they will submit the appropriate summaries of these readings in due time and form. The summaries must be included in the personalised Portfolio_Notebook_Diary of the subject. Failure to submit these summaries will result in the student being considered as NOT PRESENTED. If a grade of at least 4 points is not obtained in any part of the course, the student will be considered as failing, even if the overall average of the grades is higher or equal to 5 points.	1

Objective test	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	To obtain the credits of the 25 asignatura it is essential to present to all the tests of evaluation and will obtain an average note equal or superior to the 5 points out of 10; if in any part of the subject a grade of at least 4 points is not obtained, the student will be considered unfit, even if the overall average of the grades is greater than or equal to 5 points. The regularity, progression and balanced acquisition of practical and theoretical knowledge by the student will be weighed. To obtain the credits of the 25 asignatura it is essential to present to all the tests of evaluation and will obtain an average note equal or superior to the 5 points out of 10; if in any part of the subject a grade of at least 4 points is not obtained, the student will be considered unfit, even if the overall average of the grades is greater than or equal to 5 points. The regularity, progression and balanced acquisition of practical and theoretical knowledge by the student will be weighed. These exams will include a practical question related to aspects already studied in the development of the constructive analysis of the building proposed for study in classroom practice. SECOND CHANCE: If the student does not pass the subject at the first opportunity, he will perform a test of the same characteristics and with the same weighting coefficient in the final grade as the one made in the first opportunity. The revisions of the examinations will be carried out in the schedule that the professors of the asignatura fix. They will be announced well in advance on the Department's bulletin board. Throughout the course the student will be informed periodically of the results of the tests carried out. If in any part of the subject a grade of at least 4 points is not obtained the student will be considered unsuitable, although the average overall ratings are greater than or equal to 5 points. The contents of the subject will be exposed mainly in classes of the type master session; the evaluation of the assimilation by the student of said contents will be carried out by means of an objective test. Prior to the realization of the Obxetiva Test, students will necessarily deliver the summary document in physical and computer version of the personalized Portafolio_CUADERNO_diario of the subject collecting comments, notes, references, computer links, web pages, complementary bibliography, catalogs, books, brochures, guides, etc.... related to each construction topic exposed during each of the teaching sessions.	25

Guest lecture / keynote speech	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	To obtain the credits of the asignatura it is essential to present to all the tests of evaluation and will obtain an average note equal or superior to the 5 points out of 10; if in any part of the subject a grade of at least 4 points is not obtained, the student will be considered unfit, even if the overall average of the grades is greater than or equal to 5 points. The regularity, progression and balanced acquisition of practical and theoretical knowledge by the student will be weighed. A minimum ATTENDANCE of 80% will be required to be able to present themselves to the objective test. It will be controlled by means of signatures in the official list of students in each session, in order to be able to present themselves to the objective test. Failure to attend will result in the qualification of NOT PRESENTED. The evaluation of knowledge shared in this methodology is carried out jointly in the Objective Test.	1
Case study	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	Studies of real built architectures will be carried out by means of a programme of site visits where students will learn about, measure, analyse, investigate and even get to know direct explanations from the authors of architectures of recognised quality and intensity of proposal. The students will carry out a constructive architectural study with individual drawings of the generality of each building detailing the most significant material elements and construction systems. The realization and delivery of these analyses is compulsory and of previous and joint evaluation with objective test and tutored work. FIRST OPPORTUNITY: In order to pass the Architectural Studies (cases), students must complete all the assignments scheduled throughout the course on time; they must submit the last assignment with the corrections indicated by the teacher; and they must obtain at least a grade of 5 out of 10 points. The mark for Architectural Studies (cases) will represent 5% of the total final mark for the subject, in the practical part of the evaluation and will be added to the 60% corresponding to the evaluation of tutored work, and Workshop Practice 5%, resulting in 70% of the total for the subject. In order to obtain the credits for the subject, it is essential to take all the assessment tests and to obtain an average mark of 5 points out of 10 or more; if a mark of at least 4 out of 10 is not obtained in any part of the subject, the student will be required to pass the course.	5

Student portfolio	A12 A15 A17 A18 A20 A21 A25 A26 A27 A31 A32 A63 B1 B2 B3 B4 B5 B6 B7 B9 B10 B11 B12 C1 C3 C4 C5 C6 C7 C8	Students will collect on the basis of the Methodologies included in the subject (lectures, readings, case studies and tutored work) in a personalised Portfolio_Notebook_Journal comments, notes, references, computer links, web pages, complementary bibliography, catalogues, books, brochures, guides, etc. .... related to each Construction topic presented during each of the teaching sessions. Students will have to prepare an ordered summary document with these references which must be submitted for prior assessment before the Objective Test of the subject. FIRST OPPORTUNITY: In order to pass the Portfolio_JOURNAL_ PORTFOLIO part of the course, students will have to deliver the final assignment on time; they will have to present the last assignment with the corrections indicated by the teacher; and they will have to obtain at least a grade of 5 points out of 10. A minimum attendance of 80% will be required in order to be able to take the Portfolio_Diary_Portfolio part of the course. Failure to submit all or part of the Portfolio_JOURNAL_ PORTFOLIO exercises will result in a grade of NOT SUBMITTED. Students who pass this part of the Portfolio_JOURNAL_PORTFOLIO in the June opportunity will keep the grade until the next opportunity in July. SECOND CHANCE: If the student does not pass the subject at the first opportunity, he/she will take a test with the same characteristics and with the same weighting coefficient in the final grade as the one taken at the first opportunity. The revision of the exams will take place during the timetable set by the teachers of the subject. They will be announced sufficiently in advance on the Department's notice board.	3

Assessment comments
The assessment and recovery criteria for the Second Chance, both for the objective test and the Portfolio_Notebook, Architectural Studies and tutored work, will have the same weighting coefficients and the same minimum grade of 5 points out of 10 as those indicated for the First Chance. Measures of dedication for part-time students: these are not contemplated, due to the fact that this is a subject in which tutored work, case studies and workshops are fundamental methodologies. Academic dispensation: not contemplated, as this is a subject in which tutored work, case studies and workshop are fundamental methodologies. The detection of plagiarism, as well as the fraudulent performance of tests or evaluation activities, once verified, will directly imply the grade of "0" in the subject in the corresponding call, thus invalidating any grade obtained in all evaluation activities for the extraordinary call.

Sources of information

Basic	TE _TECHNICAL CODE FOR BUILDING CONSTRUCTIONDB-SI - FIRE SAFETYDB-SU - SAFETY IN USESE - CALCULATION BASESSE-AE - ACTIONS IN THE BUILDING SE-C - FOUNDATIONSSE-A - STEEL SE-F - FACTORYSE-M - WOODDB-HS - HEALTHDB-HE - ENERGY SAVINGDB-HR - NOISE PROTECTIONFICHAS TÉCNICAS DEL COAG ; EXIGENCIAS MÍNIMAS EN EL DISEÑO DE EDIFICIOS DE VIVIENDAS EN GALICIA(adaptadas al Código Técnico de la Edificación RD 314/2006), ed. COAG, Santiago de Compostela 2007EHE-08. Instrucción del hormigón estructural EHE-88, Ministerio de Fomento, Madrid, 2008.Eurocódigo 2: proyecto de estructuras de hormigón, AENOR, Madrid, [1993-2000].Instrucción para el proyecto y la ejecución de forjados unidireccionales de hormigón estructural realizados con elementos prefabricados (EFHE-02). Ministerio de Fomento;, Madrid, 2003.Instrucción para la recepción de cementos RC-03, Ministerio de Fomento; Madrid, 2003.Cassinello Pérez, F., «Construcción: hormigonería», Rueda, Madrid, 1974.Deplazes, A. 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Complementary	

Recommendations
Subjects that it is recommended to have taken before
Architectural Projects 1/630G01001
Architectural Projects 2/630G01006
Physics 1/630G01008
Construction 1/630G01010
Projects 3/630G01011
Physics 2/630G01013
Projects 4/630G01016
Structures 1/630G01019
Construction 2/630G01020
Projects 5/630G01021
Construction 3/630G01022
Structures 2/630G01023
Construction 4/630G01027
Facilities 1/630G01030
Subjects that are recommended to be taken simultaneously
Projects 7/630G01031
Facilities 2/630G01039
Construction 3/630G02022
Subjects that continue the syllabus
Construction 6/630G01037
Construction 7/630G02045
Construction 5/630G02033
Other comments
The teaching to students of mobility programs will be adapted to pedagogical conditions and special supervised works, as well as the tests and evaluation exams.In accordance with the different regulations applicable to university teaching, the gender perspective is incorporated in this matter.Work will be done on the identification and modification of prejudices, sexist attitudes and situations of discrimination based on gender. Actions and measures are planned to correct them and promote values of respect and equality.