



Teaching Guide

Identifying Data					2017/18
Subject (*)	Sustainable strategies with traditional constructive solutions	Code	670526013		
Study programme	Mestrado Universitario en Edificación Sostible (Plan 2017)				
Descriptors					
Cycle	Period	Year	Type	Credits	
Official Master's Degree	2nd four-month period	First	Obligatoria	3	
Language	SpanishGalicianEnglishItalian				
Teaching method	Face-to-face				
Prerequisites					
Department	Construcións e Estruturas Arquitectónicas, Cívís e Aeronáuticas				
Coordinador	Fernandez Prado, Ruben	E-mail	ruben.fprado@udc.es		
Lecturers	Fernandez Prado, Ruben	E-mail	ruben.fprado@udc.es		
Web					
General description	<p>The technological evolution has carried us to reach technological strategies to give solution to problems in the edificación, the traditional systems constitute an alternative to these systems, that although in a moment have gone losing, in the current constructions can provide solutions to go back them sustainable. Recovering ancestral constructive solutions and applying them to the contemporary constructions provide solutions a high degree of sustainability and that in a lot of cases have not been surpassed by the contemporary solutions.</p> <p>This subject treats to give a vision and global criteria based in the study of the half, of the solutions of the vernacular architecture and in general in the architecture and passive construction.</p>				

Study programme competences / results

Code	Study programme competences / results
A1	CE01 Diseñar sistemas construtivos eficientes e sustentables, mediante a aplicación de solucións técnicas e sistemas construtivos tradicionais ou avanzados.
A3	CE03 Coñecer e aplicar as solucións tecnolóxicas necesarias para mellorar o comportamento térmico da envolvente dun edificio.
B1	CB01 Posuír e comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, a miúdo nun contexto de investigación.
B2	CB02 Saber aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornas novas ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo.
B3	CB03 Ser capaces de integrar coñecementos e enfrontarse á complexidade de formular xuízos a partir dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vinculadas á aplicación dos seus coñecementos e xuízos.
B4	CB04 Saber comunicar conclusións e os coñecementos e razóns últimas que as sustentan? a públicos especializados e non especializados dun modo claro e sen ambigüidades.
B5	CB05 Posuír as habilidades de aprendizaxe que permitan continuar estudando dun modo que haberá de ser en gran medida autodirixido ou autónomo.
B7	CG02 Capacidade de organización e planificación.
B12	CG07 Traballo en equipo.
B17	CG12 Adaptación a novas situacións.
B18	CG13 Creatividade.
B22	CG17 Sensibilidade cara a temas ambientais.
B24	CG19 Orientación ao cliente.
B25	CG20 Coñecer os principios básicos do paradigma da sustentabilidade, os seus debates e implicacións ambientais, socioculturais e económicas.
B26	CG21 Entender e coñecer as dinámicas e problemáticas aparecidas co fenómeno da globalización e a súa relación coa sustentabilidade global.
B27	CG22 Coñecer o impacto que o uso da tecnoloxía ten sobre a sociedade que o adopta e os principios básicos para unha tecnoloxía da sustentabilidade.



B28	CG23 Analizar os fluxos materiais e enerxéticos que se dan nun sistema e a súa interrelación co territorio e os recursos que o sostén.
B29	CG24 Coñecer a lexislación vixente e a normativa aplicable en materia de sustentabilidade, eficiencia enerxética e xestión da calidade ambiental no ámbito da edificación.
B30	CG25 Coñecer os principios físicos relacionados cos problemas enerxéticos e de sustentabilidade e saber aplicalos no deseño construtivo.
B31	CG26 Deseñar, planificar, executar e avaliar proxectos tecnolóxicos, científicos ou de xestión nun marco de sustentabilidade.
B32	CG27 Analizar e comparar as prestacións de distintas alternativas tecnolóxicas, e seleccionar as solucións máis adecuadas con criterios de sustentabilidade e eficiencia.
B33	CG28 Xestionar a explotación do edificio, implementando as melloras necesarias para adecuar os parámetros ambientais e enerxéticos.
C6	CT06 Valorar críticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben afrontarse.
C7	CT07 Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.
C8	CT08 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		
When finalizing the subject, the student will be able to know and choose technical solutions and traditional constructive systems with criteria of sustainability and efficiency for the new work or the rehabilitation.	AC1 AC3	BC1 BC2 BC3 BC4 BC5 BC7 BC12 BC17 BC18 BC22 BC24 BC25 BC26 BC27 BC28 BC29 BC30 BC31 BC32 BC33	CC6 CC7 CC8

Contents	
Topic	Sub-topic
INTRODUCTION. TRADITIONAL ARCHITECTURE POINT OF VIEW.	The climate in the architecture The user Answer of the architecture Passive Strategies traditional of the *edificación Applicable Rules
COMPATIBILITY OF THE MATERIALS And USE IN TRADITIONAL CONSTRUCTIVE SYSTEMS And INNOVATIVE.	Traditional materials. Current materials. Cases.



MIXED SYSTEMS WITH TRADITIONAL And INNOVATIVE MATERIALS.	Concepts. Types
TECHNICAL SOLUTIONS And TRADITIONAL CONSTRUCTIVE SYSTEMS	Detail of technicians and systems.
METHODS OF ELECTION OF MATERIALS And CONSTRUCTIVE SYSTEMS WITH CRITERIA OF SUSTAINABILITY And EFFICIENCY.	Criteria. Cases.
PRACTICAL CASES And EXAMPLES OF WORKS BUILT.	Relation of notable cases.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student's personal work hours	Total hours
Guest lecture / keynote speech	A3 B1 B5 B22 B25 B26 B27 B28 B29 B30 C6 C7 C8	9	0	9
Supervised projects	A3 A1 B33 B32 B31 B30 B29 B28 B27 B26 B25 B24 B22 B18 B17 B12 B7 B5 B4 B3 B2 B1 C6 C7 C8	0	53	53
Collaborative learning	A3 A1 B33 B32 B31 B30 B29 B28 B27 B26 B25 B24 B22 B18 B17 B12 B7 B5 B4 B3 B2 B1 C6 C7 C8	9	0	9
Oral presentation	B4 B12 B17 B24	3	0	3
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
Guest lecture / keynote speech	It will realize an exhibition of the contents through audiovisual means.



Supervised projects	<p>Methodology designed to promote the autonomous learning of the students, under the tutela of the professor and in stages varied (academic and professionals). It is referred prioritariamente to the learning of the How do the things?. It constitutes an option based in the assumption by the students of the responsibility by his own learning.</p> <p>This system of education bases in two basic elements: the independent learning of the students and the follow-up of this learning by the professor-tutor.</p> <p>Along the course, the student will develop a work in team that will conclude with a brief oral presentation in front of his mates. For his realization, pose two types of alternative work between which will be able to opt. Nevertheless, the professors will orient to the student in relation with the subject that propose, and reserve the right to readjust the subjects with educational ends.</p> <p>To) technical Proposal of application of a system of passive traditional architecture for an edificación-current existent construction.</p> <p>They will study the following appearances:</p> <ul style="list-style-type: none">- Description, composition and applications.- Design of the constructive system. Technical feasibility of the proposal.- Durability of the proposal.- Improvements that provides the new application.- Assessment of the solution of recycled of the material of waste.- Sustainability in the industrial production of the material/constructive system. <p>Each team will be able to pose freely any proposal that adjust to the general requirements established. Nevertheless, the professors will orient to the students in relation with the subject that propose, and reserve the right to readjust the subjects with educational ends.</p> <p>b) Study in depth of a traditional passive strategy, composed by:</p> <ul style="list-style-type: none">- Material used.- Existent constructive systems studied- Possible applications of the system to the edificación current with an energetic treatment, constructive, of design and innovation. <p>It will choose any of the constructive systems of the temario proposed by the professor for this end.</p> <p>NOTE:</p> <p>it exists the possibility that a same work was developed jointly in the matters "Sustainable strategies with traditional constructive solutions?" And "Constructive strategies in passive and bioclimatic architecture". For this, the subject proposed will have to fulfill the requirements established in the educational guides of both matters simultaneously, and will have to be approved by the professors of the matter before his start. In this case, the work will have to have an extension and a level of development in accordance with the time of dedication foreseen in the planning of both matters.</p>
Collaborative learning	<p>The system of unroll of the work tutelado will be a combination between the work of the house and the follow-up in the classroom by part of the professor.</p> <p>The work in the classroom treats of a group of procedures of education-learning guided of face-to-face form or supported with technologies of the information and the communications, that base in the organization of the class in small groups in which the alumnado works jointly in the resolution of tasks assigned by the profesorado to optimize his own learning and the one of the others members of the group.</p>
Oral presentation	<p>It will realize a presentation of the work tutelado in front of the mates, the professor will boost the participation in the discussion about the subject after the presentation.</p> <p>It will be compulsory the presentation of an academic work writing, a presentation type power-point and a signpost summary in size To1 on cardboard feather.</p>



Methodologies	Description
Supervised projects	The student will be attended in schedule of tutorías for explanations about the subjects treated in the activities posed.
Guest lecture / keynote speech	The professor will realise a follow-up with attention to groups of work guiding them in the development of the same.
Oral presentation	

Assessment			
Methodologies	Competencies / Results	Description	Qualification
Supervised projects	A3 A1 B33 B32 B31 B30 B29 B28 B27 B26 B25 B24 B22 B18 B17 B12 B7 B5 B4 B3 B2 B1 C6 C7 C8	It will realize in group awarding the same note to all the components of the same. The professors reserve the right to assign different qualifications to each component, when they detect differences in the level of work of each one.	50
Guest lecture / keynote speech	A3 B1 B5 B22 B25 B26 B27 B28 B29 B30 C6 C7 C8	It will be compulsory the assistance at least of 80% of the sessions.	20
Oral presentation	B4 B12 B17 B24	They will value the skills of the students as well as the audiovisual means, maquetas, signposts, samples to scale real, etc. that they use in the same.	30

Assessment comments
The subject stand up with a system of continuous evaluation, for which is important the assistance of the student to the activities posed. This type of evaluation develops with the support of the personalized attention of the professor, with special importance of the work developed during the course, that concludes with the oral presentation of the same. This continuous evaluation conforms the first opportunity to surpass the subject. In case that it do not reach a minimum in the activities proposed will offer two options to the student that constitute the second opportunity to surpass the subject: redo the work arriving to a greater technical depth of the subject treated and his presentation through the platform of teletraining in the dates designated to such effect, or the realization of a final examination.

Sources of information	
Basic	<ul style="list-style-type: none"> - IÑAKI Y SEBASTIÁN URKIA LUS (2007). ENERGÍA RENOVABLE PRÁCTICA. PAMPLONA: PAMIELA - CARIDE ZUÑIGA, IGNACIO (2015). ARQUITECTURA PASIBA EN LA COSTA ATLÁNTICA: ZONA DE ESTUDIO RIAS BAIXAS. UDC. REPOSITORIO - CAAMAÑO SUÁREZ, MANUEL (2006). AS CONSTRUCIÓN DA ARQUITECTURA POPULAR: PATRIMONIO ETNOGRÁFICO DE GALICIA.. A CORUÑA: HERCULES EDICIONES - DE LLANO CABADO, PEDRO (1983). ARQUITECTURA POPULAR EN GALICIA: A CASA MARIÑEIRA, A CASA DAS AGRAS, A CASA DO VIÑO E AS CONSTRUCIÓN ADXETIVAS. SANTIAGO DE COMPOSTELA: COAG - DE LLANO CABADO, PEDRO (1989). ARQUITECTURA POPULAR EN GALICIA: A CASA-VIVIENDA E AS SERRAS.. SANTIAGO DE COMPOSTELA: COAG - DE LLANO CABADO, PEDRO (2006). ARQUITECTURA POPULAR EN GALICIA: RAZÓN Y CONSTRUCCIÓN.. A CORUÑA: EDICIÓN XERAIS DE GALICIA
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus



Proxectos de i+d+i:relación investigación empresa/670503002

Master Thesis/670526027

Smart cities. Emerging technologies for sustainable cities/670526014

Techniques for saving and efficient use of energy in buildings: energy refurbishment/670526025

Systems and installations based on renewable energy and microgeneration/670526011

Techniques for mounting and integration of renewable energy systems/670526012

Structural technologies. eco-efficient and calculation methods/670526022

Constructive strategies in passive and bioclimatic architecture/670526010

Other comments

(*)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.