Teaching Guide				
Identifying Data				2024/25
Subject (*)	Architectural Form Geometry		Code	630G02014
Study programme	Grao en Estudos de Arquitectura			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	2nd four-month period	First	Basic training	6
Language	SpanishGalician			
Teaching method	Face-to-face			
Prerequisites				
Department	Expresión Gráfica Arquitectónica			
Coordinador	Hermida Gonzalez, Luis	E-mail	luis.hermida@udc.es	
Lecturers	Costa Bujan, Pablo Hermida Gonzalez, Luis Pernas Alonso, Maria Ines	E-mail	pablo.costa@udc.es luis.hermida@udc.es ines.alonso@udc.es	
Web	http://www.ryta-udc.es/			
General description	Provide the student with the content and graphic tools necessary for the acquisition of skills and competencies that allow them to analyze, devise and graphically represent the architectural space.			

Study programme competences / results	
Code	Study programme competences / results
A1	"Ability to apply graphical procedures to the representation of spaces and objects (T) "
A2	Ability to conceive and represent the visual attributes of objects and master proportion and drawing techniques, including digital ones (T)
A3	Knowledge of spatial representation systems and projections adapted and applied to architecture
A4	Knowledge of the analysis and the theory of form and the laws of visual perception adapted and applied to architecture and urbanism
A5	"Knowledge of the metric and projective geometry adapted and applied to architecture and urbanism "
A6	"Knowledge of graphic surveying techniques at all stages, from the drawing sketches to scientific restitution, adapted and applied to architecture and urbanism "
A10	"Knowledge of basic topography, hypsometry, mapping and earthmoving techniques adapted and applied to architecture and urbanism "
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
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
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 / results		
Achegar rigor xeométrico á representación e análise do espazo arquitectónico, sen esquecer que o proceso creativo do/o arquitecto/a baséase fundamentalmente na súa capacidade racional de percepción do espazo.	A1 A2 A3 A4 A5 A63	B1 B12	C4 C5 C6 C7
Potenciar o desenvolvemento da capacidade de imaxinación e lectura espacial. Estimular a aprehensión espacial, é dicir "ver no espazo". Favorecer a interacción gráfica entre o imaxinado e o representado no plano.	A1 A2 A3 A4 A5	B2 B4 B5 B12	C1 C2 C7
Estudar os principais corpos e superficies de aplicación arquitectónica, a través da súa análise e representación gráfica nos sistemas diédrico e axonométrico.	A1 A2 A3 A4 A5	B4 B5	C7 C8
Coñecer as nocións básicas de topografía e saber aplicalas á representación e actuación sobre os terreos.	A1 A5 A6 A10	B2 B4 B5	C7 C8
Coñecer e saber aplicar os elementos básicos de teoría de claroscuro.	A1 A2 A3 A4 A5	B1 B2 B4 B5	C7
Completar a formación do alumno na representación da arquitectura mediante a utilización de programas informáticos de base CAD 3D como ferramenta para a comprensión, xeración e transformación das diversos superficies de aplicación arquitectónica.	A1 A2 A3 A4 A5	B4 B5 B12	C3 C6 C7 C8

Contents	
Topic	Sub-topic
Concepto de superficie	Concepto y clasificación de superficies Contorno aparente
Superficies poliedrales	Superficies poliedrales elementales Poliedros regulares Poliedros semirregulares
Aplicaciones arquitectónicas de las superficies poliedrales	Plegaduras Sistemas plegables Estructuras reticuladas planas Estructuras reticuladas espaciales. Cúpulas geodésicas
Superficies curvas: cuádricas elementales	Conceptos generales. Puntos sobre la superficie Superficies cilíndricas. Desarrollo Superficies cónicas. Desarrollo Intersecciones. Bóvedas y lunetos

Superficies curvas: cuádricas elípticas, aplicaciones arquitectónicas	Cuádricas elípticas de revolución Cuádricas elípticas escalenas Intersecciónes. Bóvedas vaídas
Otras superficies curvas de aplicación arquitectónica	Superficies tóricas. Bóvedas tóricas Superficies de traslación. Bóvedas por aristas
Superficies regladas alabeadas	Concepto y clasificación Cuádricas regladas. Hiperboloide reglado. Paraboloide hiperbólico Conoides Cilindroides. Capialzados
Superficies topográficas	Generalidades Intersecciones con planos y superficies cónicas Explanciones. Taludes de desmonte y terraplén Trazado de alineaciones
Ampliación de teoría de sombras	Sombras sobre superficies curvas. Sombras autoarrojadas Elementos de teoría de claroscuro

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A4 A5 B12 C6 C7	15	9	24
Workshop	A1 A2 A3 A4 A5 A6 A10 B1 B5 C7	45	9	54
Supervised projects	A1 A2 A3 A4 A5 A63 B2 B4 B5 B12 C1 C2 C3 C4 C5 C6 C7 C8	0	30	30
Objective test	A1 A2 B1 B2	6	26	32
Personalized attention		10	0	10
(*)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	Oral exhibition of the theoretical contents specified using in each one of them explanatory drawings in the blackboard and/or projections on screen. The lesson magistral has by object contribute the basic concepts to provide the necessary tools with which the student can develop the knowledges of the Geometry of the Architectural Form. His exhibition poses from a perspective in which the architecture finds always present.
Workshop	It develops with the purpose that the student participate actively in the process of learning, confronting to the need to value, answer and experience the exposed knowledges in the sessions magistrales through graphic practices. They choose for the realisation of these practical architectural examples real or elements that consider adapted. The formalisation of said projects looks for adapted to the level of the course in which it finds the student and contributes to his familiarización with the architectural fact.
Supervised projects	This type of works pose to promote the autonomous learning of the student, under the supervision of the/to professor/to tutor/to. The thematic of the work will be in correspondence with the theoretical concepts exposed in the sessions magistrales. His development will be able to pose of individual form or in groups. It includes in this methodology the employment of the suitable computer tools for the formalisation and final presentation of the works. The follow-up will make in the hours of tutorias planned for such effect.
Objective test	It defines like "objective proof" to the special practices that pose along the course and that serve to check in level reached in the process of learning of the student. The development and character of said proofs will be defined by each professor/to manager of the group.

Personalized attention	
Methodologies	**Description**
Workshop Supervised projects	The subject conceives fundamentally like experimental-practical since the process of learning of the student bases in the realization of graphic practices in the that takes part actively, in a continuous relation with the teaching staff. This personalised attention will be individual or in small groups and will be related with the practices and the work of the course.

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Workshop	A1 A2 A3 A4 A5 A6 A10 B1 B5 C7	The evaluation of the practices done in class will be throughout the semester. The work done by the students and the knowledge acquired will be valued. Due to the fundamentally practical nature of the subject, a minimum attendance of delivered practices set at 90% is required. Practices delivered late, for justified reasons, will be valued with 50% of the grade. Face-to-face practices and supervised work are valued jointly. The percentage in the final grade for these face-to-face practices varies from 30% to 45% depending on the duration of supervised work.	30
Supervised projects	A1 A2 A3 A4 A5 A63 B2 B4 B5 B12 C1 C2 C3 C4 C5 C6 C7 C8	The completion of the supervised work will be an optional decision of the teaching staff in charge of the subject. The supervised work will be evaluated according to its suitability, taking into account the criteria of analysis, reflection and final presentation. Carrying out the work requires monitoring by the teaching staff throughout its development. Face-to-face practices and supervised work are valued jointly. The percentage in the final grade for supervised work varies from 0% to 15% depending on its completion and duration. If this methodology is not carried out, 15% will be included in the practices done in class.	15
Objective test	A1 A2 B1 B2	Two special practices will be carried out throughout the semester, the second practice coinciding with the date set by the center for the first opportunity exam. With these practices, the transfer of the knowledge acquired by the student in the different parts of the subject will be evaluated. The percentage of the final grade will be 55%. For the application of this percentage, an average grade of 5 points between the two special practices will be necessary. A minimum of 5 points is required in each of the two tests to be able to take the average.	55

Assessment comments

NOTE:THE EVALUATION IS CONTINUOUS THROUGHOUT THE QUARTER; THE SUBJECT WILL BE APPROVED PER COURSE AS LONG AS THEY HAVE PASSED THE PARTS THAT CONSTITUTE THE FINAL GRADE = [(Class Practices and Tutored Work) 45% + Special Practices 55%].Important: TO OPT FOR THE SECOND OPPORTUNITY, STUDENTS MUST MEET THE DELIVERY AND ATTENDANCE CRITERIA OF THE FIRST OPPORTUNITY DURING THE QUARTER, EXCLUDING STUDENTS WHO DO NOT MEET THOSE CONDITIONS, AND THEREFORE HAVE NOT FOLLOWED THE QUARTER.

Sources of information	
Basic	- FRANCO TABOADA, J.A. (2011). Geometría Descriptiva para la Representación Arquitectónica. Vol. 1. Fundamentos. A Coruña:Andavira - FRANCO TABOADA, J.A. (2012). Geometría Descriptiva para la Representación Arquitectónica. Vol. 2. Geometría de la Forma Arquitectónica. A Coruña:Andavira - COSTA BUJAN, Pablo (2018). Geometrías Básicas y formas arquitectónicas. Representaciones y Modelos. A Coruña;Andavira
Complementary	- FORSETH, K (1981). Gráficos para arquitectos. Barcelona:Gustavo Gili - ENGEL (2001). Sistemas de estructuras. Barcelona:Gustavo Gili

Recommendations
Subjects that it is recommended to have taken before
Descriptive Geometry/630G02003 Drawing in Architecture/630G02002
Subjects that are recommended to be taken simultaneously
Analysis of Architectural Forms/630G02007
Subjects that continue the syllabus
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.