Universida_{de}Vigo

IDENTIFYING DATA
(*)Introducción á topografía e produción cartográfica

Subject	(*)Introducción á topografía e produción cartográfica
Code	O02M143V03111
Study programme	Máster Universitario en Valoración, Gestión y Protección del Patrimonio Cultural

Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1st	1st

Teaching language	#EnglishFriendly Spanish Galician
Department	
Coordinator	Martínez Sánchez, Joaquín
Lecturers	Martínez Sánchez, Joaquín Solla Carracelas, María Mercedes
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Web	http://moovi.uvigo.gal/course/view.php?id=1069
General description	The aim of this course is to qualify the student to interpret cartographic documentation and know apply different technologies of preparation of necessary cartography in the projects of documentation of the cultural heritage real estate and his immediate surroundings. English Friendly subject: International students may request from the teachers: a) resources and bibliographic references in English, b) tutoring sessions in English, c) exams and assessments in English.

Training and Learning Results

Code	
A3	That students are able to integrate knowledge and face the complexity of making judgments based on information that, being incomplete or limited, includes reflections on social and ethical responsibilities linked to the application of their knowledge and judgments.
B2	Acquire the necessary knowledge to handle the different tools of graphic, dimensional and geospatial documentation to be applied in the documentation and valuation of Cultural Heritage.
C5	Master and be able to apply instruments and procedures of various cartographic techniques to the real cultural heritage for its dimensional control and the elaboration of graphic documentation using CAD tools.
C6	Analyze, refine and interpret geographic information, as well as its storage in databases, based on technical requirements for the inventory and documentation of an intervention project.
D5	Be able to predict and control the evolution of complex situations through the development of new and innovative work methodologies adapted to the specific scientific / research, technological or professional field, in general multidisciplinary, in which their activity is developed.
D8	Acquire advanced knowledge and demonstrate, in a context of scientific and technological research or highly specialized, a detailed and substantiated understanding of the theoretical and practical aspects and the methodology of work in one or more fields of study.

Expected results from this subject

Expected results from this subject	Training and Learning Results
Know the different technologies that allow generating cartographic documents of heritage assets	A3 B2 C5 C6 D5 D8

Be able to interpret, refine and analyze dimensional information as well as optimize its management		A3
		B2
		C5
		C6
		D5
		D8

Contents

Topic	
Foundations of Cartography	Geoid and terrestrial ellipsoid. Cartographic systems. System of Projection UTM. Models of cartographic data. Metadatos. Sources of cartographic data.
Foundations of Topography.	Instruments and topographical methods digital Models of the terrain and of surface. Curves of level
Systems GPS	Introduction to the systems GPS Foundations of the system GPS, errors, parameters that affect to the precision. Types of systems GPS and instruments. Obtaining and interpretation of the information.
Models 2D and 3D of objects	Clouds of points, models of surfaces, volumetric models, and other models of information.
The teledetection like source of information for the preparation of cartography	Foundations of space teledetection basic Concepts of Thematic cartography. Teledetection and Projects of cartographic documentation.

Planning

	Class hours	Hours outside the classroom	Total hours
Introductory activities	0.5	0.5	1
Lecturing	1.5	1.5	3
Case studies	4	6	10
Autonomous problem solving	0	25	25
Mentored work	0	30	30
Project	0	2	2
Essay	0	2	2
Systematic observation	0	2	2

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Introductory activities	Activities directed to take contact and gather information on the students, as well as to present the subject. They will present index card of the matter, aims, calendar, criteria of evaluation, as well as forums of debate and news and other surroundings in which it will manage the learning.
Lecturing	Exhibition of the main theoretical contents of the matter with help of audiovisual means. The students will have the possibility to assist to said session in shape of videoconference.
Case studies	Analysis of a problem or real case, in order to know it, interpret it, solve it, generate hypotheses, diagnose it and go into alternative solution procedures, to see the application of theoretical concepts in reality. They will be used as a complement to the theoretical classes for self-learning.
Autonomous problem solving	Activities in which they formulate problems and/or exercises related with the matter. The student has to develop of autonomous form the analysis and resolution of the problems and/or exercises.
Mentored work	The student presents the result obtained in the preparation of a document on the thematic of the matter in the preparation of seminars, investigations, memories, essays, summaries of readings, conferences, etc

Personalized assistance

Methodologies	Description
Mentored work	The personalised attention will consist in the orientation of the level of learning required, the introduction to the materials, the resolution of doubts and the explanation of the dynamics of the development of the matter in the platform of teledocencia.

Assessment

	Description	Qualification	Training and Learning Results			
Project	The students present the results of the preparation of an individual project on the generation of data by means of the technicians of documentation developed in the subject. The results of learning evaluated are the capacity to generate documentary data in diverse formats, so that they cooperate in the work of management of the cultural heritage.	40	A3	B2	C5 C6	
Essay	The student presents the result obtained in the preparation of a document on the thematic of the matter, in the preparation of seminars, investigations, memories, essays, summaries of readings, conferences. The results of learning evaluated are the capacity to manage big quantities of documentary data in diverse formats, so that they cooperate in the common work of management of the cultural heritage.	40	A3	B2	C5 C6	
Systematic observation	Evaluation of the active participation and based of the students in the activities of the process education-learning	20	A3	B2	C5 C6	D5 D8

Other comments on the Evaluation

According to the 2023 "*Regulation on the evaluation, qualification and quality of teaching and the student learning process of the University of Vigo*", there are two evaluation systems that students can choose: the preferred one, which will be applied by default, of "**continuous evaluation**" (diversified tests and activities that take place throughout the semester), and the so-called "**global evaluation**" (tests and/or delivery of work/exercises to be carried out on the official dates of evaluation established in the academic calendar), which must be expressly requested by the interested students, and communicated to the responsible teaching staff within a maximum period of 31 days from the beginning of each term.

The "**global evaluation**" tests for this subject will consist as follows: project (50%) and essay (50%).

Students have two evaluation calls/opportunities. The first is carried out during the teaching semester. The second (or 2nd opportunity) will take place in the month of July, for which access to the teaching platform will be enabled again.

Sources of information
Basic Bibliography
Complementary Bibliography
Wolf, Paul R. y Brinker, Russell C.,, **Topografía**, 11, Alfaomega,, 2014
Olaya, Victor, **Sistemas de Información Geográfica (SIG) y Cartografía Temática. Métodos y técnicas para el trabajo en el aula**, Cuadernos internacionales de tecnología para el de, 2009
Chuvieco Salinero, Emilio, **Teledetección Ambiental**, 6, Ariel, 2006

Recommendations
Subjects that continue the syllabus
2D and 3D Cartographic Documentation Techniques for Cultural Heritage/O02M143V03109
GIS Technologies for Inventory of Cultural Assets/O02M143V03108

Subjects that are recommended to be taken simultaneously
CAD Techniques to Present Heritage/O02M143V03107

Other comments
The teaching of the subject will be always face-to-face telematic way, well was synchronous or asynchronous, using the eMoodle (MooVi) educational platform and participating in the educational activities through multiple videoconference (Remote Campus).
To be able to receive the teaching of effective way it si recommended , previously to the start of the subject, to consult the manual of access to the platform and to follow the technical specifications in order to assist to the remote sessions. It is indispensable that each student access to the educational platform of the subject previously to the beginning of the same.