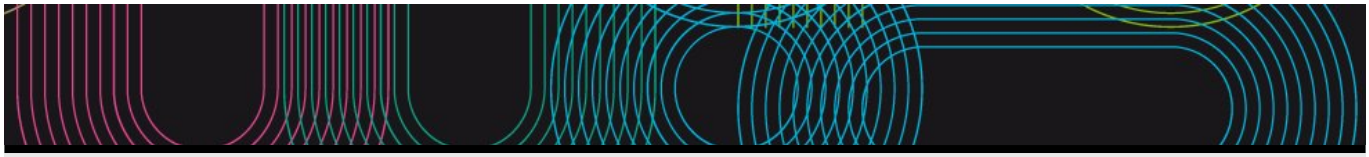
Universidade Vigo

Subject Guide 2026 / 2027



IDENTIFYING DATA				
Prospecting Techniques for Surface Subsoil				
Subject	Prospecting Techniques for Surface Subsoil			
Code	O02M143V03110			
Study programme	Máster Universitario en Valoración, Gestión y Protección del Patrimonio Cultural			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1st	1st
Teaching language	Spanish Galician			
Department				
Coordinator	Caparrini Marín, Natalia			
Lecturers	Caparrini Marín, Natalia Solla Carracelas, María Mercedes			
E-mail	nataliac@uvigo.es			
Web	http://moovi.uvigo.gal/course/view.php?id=1068			
General description	(*)O obxectivo da materia é que os alumnos sexan capaces de deseñar e planificar unha campaña de prospección, así como interpretar os resultados esperados.			

Training and Learning Results	
Code	
A2	That students know how to apply the knowledge acquired and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.
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.
C7	Know the basics of the most used non-destructive techniques for the sub-surface prospecting of the cultural heritage and develop the ability to determine its applicability to specific cases.
D4	To be able to integrate the diverse information and data contributed by diverse technicians and tools in the writing of conclusions of action.
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.

Expected results from this subject	Training and Learning Results			
Design and plan a prospecting campaign, as well as interpreting the expected results	A2	B2	C7	D4 D5

Contents	
Topic	
1. Introduction to the Geophysical Prospecting	1.1 Introduction 1.2 The geophysical methods 1.3 Election of the geophysical methods 1.4 Applications 1.5 Phases of a campaign geophysics 1.6 Interpretation 1.7 Estimate of Costs

2. Technical Geophysics	2.1 electrical Methods 2.2 electromagnetic Methods 2.3 magnetic Methods 2.4 Methods gravimétrics 2.5 seismic Methods
3. GPR	3.1 theoretical Foundations of the GPR 3.2 Components of the system. 3.3 Methodologies of acquisition of data in field. 3.4 Interpretation. 3.5 Applications. 3.6 current Teams. 3.7 Estimate of Costs.
4. Processed of GPR	4.1 Processed of the signal GPR. 4.2 Example of application.

Planning

	Class hours	Hours outside the classroom	Total hours
Introductory activities	2	0	2
Previous studies	0	28	28
Case studies	4	0	4
Project based learning	0	10	10
Seminars	2	0	2
Laboratory practice	0	9	9
Essay	0	10	10
Case studies	0	10	10

*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 subjet
Previous studies	Research, reading and work of documentation, proposals of resolution of problems and/or exercises that will realise of autonomous form by part of the students.
Case studies	Analysis of a problem or real case, with the purpose to know it, interpret it, resolve it, generate hypothesis, diagnose it and pose in alternative procedures of solution, to see the application of the theoretical concepts in the reality. They will employ as I complement to the studies and previous activities.
Project based learning	Education based in projects of learning: Method in which the students carry out to realisation of a project in a determinate time to resolve a problem or tackle a task by means of the planning, design and realisation of a series of activities
Seminars	You interview that the student is supported by the teacher of the subject for advice/develop of activities of the subjet and of the process of learning.

Personalized assistance

Methodologies	Description
Introductory activities	Time devoted to attend the needs and queries of the students related with the study and/or subjects linked with the matter, providing him orientation, support and motivation in the process of learning. This activity can develop of form semi-face-to-face (through emeeting) or of form no face-to-face (through the email or of Faitc)
Case studies	Time devoted to attend the needs and queries of the students related with the study and/or subjects linked with the matter, providing him orientation, support and motivation in the process of learning. This activity can develop of form semi-face-to-face (through emeeting) or of form no face-to-face (through the email or of Faitc)
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Seminars	Time devoted to attend the needs and queries of the students related with the study and/or subjects linked with the matter, providing him orientation, support and motivation in the process of learning. This activity can develop of form semi-face-to-face (through emeeting) or of form no face-to-face (through the email or of Faitc)

Assessment

	Description	Qualification	Training and Learning Results
Laboratory practice	Proofs for the evaluation that include activities, problems or practical exercises to resolve. The students have to give answer to the activity posed, applying the theoretical and practical knowledges of the subjet. The results of the learning are: Design and schedule a campaign of prospecting, as well as interpret the results expected.	40	B2 C7 D4
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, etc. The results of the learning are: Design and schedule a campaign of prospecting, as well as interpret the results expected.	20	A2 B2 C7 D4 D5
Case studies	(*)Proba na que un alumno/a debe analizar un feito, problema ou suceso real coa finalidade de coñecelo, interpretalo, resolvelo, xerar hipóteses, contrastar datos, reflexionar, completar coñecementos, diagnosticalo e adestrarse en procedementos alternativos de solución.	40	A2 B2 C7 D4 D5

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: practical exercices (40%), essay (20%), case studies (40%).

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

V. Perez-Gracia, **Evaluación GPR para aplicaciones en arqueología y en patrimonio histórico-artístico**, 2001

D. Goodman and S. Piro, **GPR Remote Sensing in Archaeology**, 2013

A.P. Annan, **Ground Penetrating Radar. Principles, Procedures & Applications**, 2003

L. B. Conyers, **Ground-penetrating radar for archaeology**, 2004

WYNN, J. C, **Archaeological prospection: An introduction to the Special Issue**, 1986

Cámara, M.E.,, **- Métodos Geofísicos aplicados en investigaciones Arqueológicas. Tesis Doctoral.**, 1989

Recommendations

Other comments

The teaching of the subject will be always of 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 (e-meeting, 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.