Teaching Guide				
Identifying Data				2022/23
Subject (*)	Assessment and Underpinning of Foundations		Code	630548018
Study programme	Máster Universitario en Rehabilitación Arquitectónica			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	2nd four-month period	First	Obligatory	3
Language	SpanishGalician			
Teaching method	Face-to-face			
Prerequisites				
Department	Construcións e Estruturas Arquitectónicas, Civís e AeronáuticasEnxeñaría Civil			
Coordinador	Muñiz Gomez, Santiago	E-mail	santiago.muniz@udc.es	
Lecturers	Muñiz Gomez, Santiago	E-mail	santiago.muniz@udc.es	
Web				
General description	It is intended that the student is qualified to can make the diagnostic with solvency for the problems that can cause the soil on the rehabilitation work and propose safe, viable and suitable solutions to the architectural design within the rehabilitation project. For that, it is necessary the precise knowledge refered to the recognition of soils, the diagnosis of pathology linked to the ground and the basic and advanced techniques, what will be exposed in the classes of theory. At the time the student must know how to translate this knowledge into concrete techniques, for which they propose a series of practical classes and the accomplishment of a concrete work. This work should be related to the professional activity of the architect, within the specific content of this subject.			

Study programme competences	
Code	Study programme competences
A5	E05. Aptitud o capacidad para la conservación de la obra pesada, mediante la inspección, el análisis, el control de calidad, la definición de las condiciones de mantenimiento, y la estimación de la seguridad de las estructuras de edificación, incluyendo sus posibles cimentaciones, pudiendo igualmente afrontar la redacción de proyectos de reparación y refuerzo, y la dirección de ejecución asociada
A8	E08. Aptitud o capacidad para redactar informes técnicos y proyectos de rehabilitación del patrimonio edificado, incluyendo actividades de asesoramiento y consultoría
B1	CB6. Poseer y comprender conocimientos que aporten una base u oportunidad de ser originales en el desarrollo y/o aplicación de ideas, a menudo en un contexto de investigación
B2	CB7. Que los estudiantes sepan aplicar los conocimientos adquiridos y su capacidad de resolución de problemas en entornos nuevos o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio
B3	CB08. Que los estudiantes sean capaces de integrar conocimientos y enfrentarse a la complejidad de formular juicios a partir de una información que, siendo incompleta o limitada, incluya reflexiones sobre las responsabilidades sociales y éticas vinculadas a la aplicación de sus conocimientos y juicios
B4	CB09.Que los estudiantes sepan comunicar sus conclusiones y los conocimientos y razones últimas que las sustentan a públicos especializados y no especializados de un modo claro y sin ambigüedades
B5	CB10. Que los estudiantes posean las habilidades de aprendizaje que les permitan continuar estudiando de un modo que habrá de ser en gran medida autodirigido o autónomo.
C1	T01. Capacidad de análisis y síntesis
C4	T04. Conocimientos de informática relativos al ámbito de estudio
C5	T05. Capacidad para la gestión de la información
C6	T06. Resolución de problemas
C12	T12. Comprensión numérica
C13	T13. Intuición mecánica

Learning outcomes

Learning outcomes	Study programme competences		
At the end of the course, the student is expected to be able to diagnose with solvency the problems that the terrain may cause on the rehabilitation work and propose safe, viable and adequate solutions to the architectural aspects within the rehabilitation project. For this, it is necessary that you acquire the necessary knowledge regarding soil recognition, the diagnosis of pathology linked to the terrain and the basic and advanced techniques of stress, which will be exposed in the theory classes. At the same time, the student must know how to translate this knowledge into specific techniques, for which a series of practical classes and the completion of a specific job are proposed. This work must be related to the professional activity of the architect, within the specific content of this subject.	AJ5 AJ8	BJ1 BJ2 BJ3 BJ4 BJ5	CJ1 CJ4 CJ5 CJ6 CJ12 CJ13

Contents	
Topic	Sub-topic
PATHOLOGIES DUE TO THE FOUNDATION	-General features ?Soil pathology ?Excavation pathology ?Pathology of foundations ?Pathology of containment systems ?Pathology of foundation and shoring screens ?Project, calculation and execution errors
SPECIAL TECHNIQUES FOR FLOOR RECOGNITION IN REHABILITATION	Basic Geology Geotechnical studies. Soil exploration methods
SURFACE UNDERPINNING	Surface underpinning
DEEP UNDERPINNING	Deep wells Piles Micropiles Repair of walls Atypical underpinning
SOIL IMPROVEMENT TECHNIQUES	Soil improvement Foundations on expansive soils Foundations on collapsible soils Foundations on fillings Special and singular cases

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Guest lecture / keynote speech	C1 C4 C5	18	0	18
Problem solving	B1 B2 B3 B4 B5 C1 C4 C5 C6 C12 C13	5	5	10
Supervised projects	A5 A8	4	38	42
Personalized attention		5	0	5
(*)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	The development of the subject is structured around theory sessions, although with an important component of practices carried out by the student / teacher, in addition to the corresponding tutorials and assignments. The teaching will also include the analysis of practical cases already carried out, which allow complementing the knowledge acquired throughout the course.

Problem solving	The course is complemented by the development by the student of a reinforcement project, which allows to specify the possibilities of action and which involves the acquisition of the corresponding skills. This practice, which will be continuously monitored throughout the course, will be the basis for the grade of the subject. Parts of this work will be carried out on a weekly basis, usually with weekly deliveries, which will become part of the overall practice of the course.
Supervised projects	Carrying out a reinforcement project that summarizes the practices developed throughout the course

Personalized attention	
Methodologies	**Description**
Guest lecture / keynote speech Supervised projects Problem solving	The tutorials are intended to be a fundamental source of knowledge of this subject, since they will allow to focus the student's work and to solve its particular problems regarding the work to be done during the course.

Assessment			
Methodologies	**Competencies**	**Description**	**Qualification**
Supervised projects	A5 A8	Course Global Practice Review	70
Problem solving	B1 B2 B3 B4 B5 C1 C4 C5 C6 C12 C13	Review of weekly practices and activities	30
Others			

Assessment comments
Criteria to be applied to students with an attendance greater than 80% Students with recognition of part-time dedication and academic exemption from attendance: In the case of these students, they must carry out the partial practices that will count 30% and also the global practice that will count 70%. The work will be monitored in order to see its evolution and the confirmation of its authorship by the student. Weekly practices cannot be delivered after the deadline. The global practice can be provided before the 2nd opportunity if it is intended to attend said call, provided that there has been a follow-up of it throughout the course. This is applicable to the advance call. Failure to deliver the global practice implies a qualification of no-show. Regardless of what is legally indicated on possible teacher-type fraud, any of the following situations will be considered as serious disciplinary offenses and, consequently, the automatic qualification of SUSPENSION (0):-Impersonation of a partner in attendance checks or activities -this fault extends to both the impersonating student and the impersonating student.-Fraudulent performance of practices and controls by a person other than the signing student.-Copy of practices.-Copy of exams.-Equivalent situations-Plagiarism

Sources of information	
Basic	Bibliografía básica - Jiménez Salas, J. et allii "Geotecnia y cimientos". Editorial Rueda. Madrid 1981. - Rodríguez Ortiz, J.M. "La cimentación". Curso de Rehabilitación. Colegio Oficial de Arquitectos de Madrid. Madrid 1984. - Pérez Valcarcel J. "Excavaciones urbanas y estructuras de contención". Ediciones CAT. Colegio Oficial de Arquitectos de Galicia. Santiago 2005. - González Caballero, M. "El terreno". Ediciones UPC. Barcelona 2001. Bibliografía complementaria - González de Vallejo, L.; Ferrer, M.; Ortuño L.; Oteo, C. "Ingeniería geológica". Prentice Hall. Madrid. 2002. - Tomlinson, M.J. "Diseño y construcción de cimientos". Ediciones Urmo. Bilbao 1982. - Braja M. Das ?Principios de ingeniería de cimentaciones?. Ed Thomson. Méjico 2006.
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Building Inspection/630567110
Subjects that are recommended to be taken simultaneously
Materials deterioration and traditional building technology/630567113

Subjects that continue the syllabus
Damage and Restoration of Concrete Structures/630567120
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.