



## Teaching Guide

Identifying Data					2023/24
Subject (*)	Assessment and underpinning of foundations	Code	630567119		
Study programme	Mestrado Universitario en Rehabilitación Arquitectónica (Plan 2016)				
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, Cívís e AeronáuticasEnxeñaría Civil				
Coordinador		E-mail			
Lecturers		E-mail			
Web					
General description	<p>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.</p>				

## Study programme competences

Code	Study programme competences
A1	E01 - Aptitude ou capacidade para acometer actividades de crítica arquitectónica, mediante a análise do patrimonio edificado baixo diferentes ópticas e a identificación dos precedentes formais, tipolóxicos e estilísticos.
A5	E05 - Aptitude ou capacidade para a conservación da obra pesada, mediante a inspección, a análise, o control de calidade, a definición das condicións de mantemento e a estimación da seguridade das estruturas de edificación, incluídas as súas posibles cimentacións, podendo igualmente afrontar a redacción de proxectos de reparación e reforzo, e a dirección da execución asociada.
A8	E08 - Aptitude ou capacidade para redactar informes técnicos e proxectos de rehabilitación do patrimonio edificado, incluídas actividades de asesoramento e consultoría.
B1	CB6 - Posuír e comprender coñecementos que proporcionen unha base ou oportunidade para ser orixinais no desenvolvemento e/ou a aplicación de ideas, a miúdo nun contexto de investigación.
B2	CB7 - Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo.
B3	CB8 - Que os estudantes sexan 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	CB9 - Que os estudantes saiban comunicar as súas conclusións e os coñecementos e as razóns últimas que as sustentan a públicos especializados e non especializados dun modo claro e sen ambigüidades.
B5	CB10 - Que os estudantes manexen as habilidades de aprendizaxe que lles permitan continuar estudando dun modo que haberá de ser en gran medida autodirixido ou autónomo.
C1	T01 - Capacidade de análise e síntese
C2	T02 - Capacidade de organización e planificación
C3	T03 - Comunicación oral e escrita
C4	T04 - Coñecementos de informática relativos ao ámbito de estudo
C5	T05 - Capacidade para a xestión da información
C6	T06 - Resolución de problemas
C7	T07 - Toma de decisións
C8	T08 - Aprendizaxe autónoma



C9	T09 - Creatividade
C11	T11 - Visión espacial
C12	T12 - Comprensión numérica
C13	T13 - Intuición mecánica
C15	T15 - Cultura histórica

Learning outcomes				
Learning outcomes		Study programme competences		
<p>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.</p>		AJ1	BJ1	CJ1
		AJ5	BJ2	CJ2
		AJ8	BJ3	CJ3
			BJ4	CJ4
			BJ5	CJ5
				CJ6
				CJ7
				CJ8
				CJ9
				CJ11
				CJ12
				CJ13
				CJ15

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	A1 A5 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C11 C12 C13 C15	18	0	18
Problem solving	A1 A5 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C11 C12 C13 C15	5	5	10
Supervised projects	A1 A5 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C11 C12 C13 C15	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
Supervised projects Guest lecture / keynote speech 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	A1 A5 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C11 C12 C13 C15	Course Global Practice Review	70
Problem solving	A1 A5 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C11 C12 C13 C15	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

<b>Basic</b>	Bibliografía básica - Jiménez Salas, J. et alii "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.
<b>Complementary</b>	

## 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.