

SUBJECT TEACHING GUIDE

5327 - Introduction to Geotechnical Engineering

Degree in Civil Engineering BILINGUAL UC-CU CIVIL ENGINEERING PROGRAM

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	Degree in Civil Engineering BILINGUAL UC-CU CIVIL ENGINEERING PROGRAM			Type and Year	Compulsory. Year 2 Compulsory. Year 1
Faculty	School of civil Engineering				
Discipline	Obligatory Subjects FUNDAMENTALS OF SOIL ENGINEERING				
Course unit title and code	5327 - Introduction to Geotechnical Engineering				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	English	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. CIENCIA E INGENIERIA DEL TERRENO Y DE LOS MATERIALES				
Name of lecturer	MARINA MIRANDA MANZANARES				
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Other lecturers					

3.1 LEARNING OUTCOMES
- Rock properties
- Soil description and classification. Phase relationships.
- Calculation of pore water pressure in soils. Seepage through soils. Quick condition
- Calculation of total and effective stresses. The principle of effective stress
- Calculation of settlements in confined compression situations.
- Estimation of strength parameters of soils from laboratory tests.
- Analyse strength and deformability tests of soils

4. OBJECTIVES

Nature of soils. Soil description and classification.
Understanding of the models to predict soil behaviour
Understanding of how to obtain soil parameters and critically evaluate the results
Identifying the geotechnical processes in real cases
Identify the best model and calculations methods among the possible ones
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6. SUBJECT PROGRAM

CONTENTS

1	Soils and rocks: origi, identification, classification
2	Ground water: at rest and steady flow
3	Stresses in soils
4	Confined compression. Consolidation
5	Partially saturated soils
6	Strength and deformation of soils
7	Rock mechanics

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Exam units 1 to 3	Written exam	No	Yes	40,00
Exam units 4 to 6	Written exam	Yes	Yes	50,00
Laboratory sessions test	Activity evaluation with Virtual Media	No	No	10,00
TOTAL				100,00
Observations				

Observations for part-time students				
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8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC
Fundamentals of Geotechnical Engineering. D.M. Das. Ed. Thomson, cop. 2005
Soil mechanics. T.W. Lambe and R.V. Whitman. Ed. John Wiley, 1969
Soil Mechanics. R.F. Craig. Ed. London: Spon, 2001
Geotechnical Engineering. R. Lancellotta. Ed. Rotterdam: A.A. Balkema, 1995
Geotecnia I: Propiedades del terreno. C. Sagaseta, J. Cañizal y A. da Costa. E.T.S. de Ingenieros de Caminos, C. y P.

