

## SUBJECT TEACHING GUIDE

G1964 - Applied Geology

Degree in Civil Engineering

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Civil Engineering			Type and Year	Core. Year 2
Faculty	School of civil Engineering				
Discipline	GEOLOGY				
Course unit title and code	G1964 - Applied Geology				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. CIENCIA E INGENIERIA DEL TERRENO Y DE LOS MATERIALES				
Name of lecturer	VIOLA MARIA BRUSCHI				
E-mail	viola.bruschi@unican.es				
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 1. SALA INFORMATICA - GEOLOGIA APLICADA (1075)				
Other lecturers	MIGUEL ANGEL SANCHEZ CARRO				

### 3.1 LEARNING OUTCOMES

- Identification of the main geological structures and processes
- Identification of the main problems and uses of rocks in Civil Engineering Projects
- Identification of the most important effects of weathering and climate on rocks .
- Interpretation of geological maps: cross sections.

#### 4. OBJECTIVES

- Description of the internal structure of the earth.
  - Identification of the main properties of minerals and the relationship between physics and genetic features. Description of the main problems caused by specific minerals.
  - Rock characterization. Identification of the most common problems and uses of rocks in engineering projects.
  - Description of the elements of the rock mass. Interpretation of the effect caused by discontinuities in the rock mass .
- Description of the different rock mass classifications . - Description of the most important geological features of the Iberian Peninsula
- Description of the main geomorphological processes. - Identification of the effect caused by climatology on rocks . -Identification of the main processes, shapes and deposits of rivers and landslides.
- Interpretation of geological maps and the arrangement of geological units. Identification of rock samples.

#### 6. SUBJECT PROGRAM

CONTENTS	
1	<ul style="list-style-type: none"> <li>- Internal structure of the Earth</li> <li>- Plates tectonic</li> <li>- Mineralogy</li> </ul>
2	<ul style="list-style-type: none"> <li>- Igneous rocks</li> <li>- Sedimentary rocks</li> <li>- Metamorphic rocks</li> </ul>
3	<ul style="list-style-type: none"> <li>- Geological structures.</li> <li>- Geology of Spain</li> <li>- Field Trip</li> </ul>
4	<ul style="list-style-type: none"> <li>Weathering and soils</li> <li>Fluvial geomorphology</li> <li>Slope geomorphology</li> <li>Climatology</li> <li>Management of Geologic information by GIS</li> </ul>

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
theory exam (duration: 2h aproximately) This exam represent 35% of the final mark	Written exam	No	Yes	35,00
Each student will hand weekly the practical activities carried out in class which will be evaluated. This represents 10 % of the final mark	Laboratory evaluation	No	No	10,00
Theory exam (duration: 2h aproximately) This exam represent 35% of the final mark	Written exam	Yes	Yes	35,00
Practical exam (duration: 1h aproximately) This exam represent 20% of the final mark	Written exam	Yes	Yes	20,00
TOTAL				100,00
Observations				
Students could make up only examinations for which marks were below the minimum required to pass the exam.				
Observations for part-time students				
Students with Partial Time will complete all the assessment activities proposed for the development of the subject or will do an unique exam at the end of the academic period, excepting the epigraph of Exercises carried out in class. Regarding the Exercises carried out in class, the students will do the practical activities and will hand them to the Lecturer before the exam of november and before the exam of February.				

## 8. BIBLIOGRAPHY AND TEACHING MATERIALS

### BASIC

1. CIENCIAS DE LA TIERRA. UNA INTRODUCCIÓN A LA GEOLOGÍA FÍSICA. Tarbuck y Lutgens  
Ed. Prentice Hall, Madrid  
<http://www.prenhall.com/tarbuck>
2. GEOLOGÍA APLICADA A LA INGENIERÍA CIVIL  
Juan Manuel López Marinas  
CIE Dossat 2000