

SUBJECT TEACHING GUIDE

1136 - GIS and Land Management

Master's Degree in mining engineering
Master's Degree in mining engineering

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	Master's Degree in mining engineering Master's Degree in mining engineering			Type and Year	Compulsory. Year 2 Compulsory. Year 2
Faculty	School of Mines and Energy Engineering				
Discipline	MINING				
Course unit title and code	1136 - GIS and Land Management				
Number of ECTS credits allocated	3	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. INGENIERIA GEOGRAFICA Y TECNICAS DE EXPRESION GRAFICA				
Name of lecturer	JULIO MANUEL DE LUIS RUIZ				
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Other lecturers	RAUL PEREDA GARCIA				

3.1 LEARNING OUTCOMES

- Learning outcomes that students must acquire to pass the course go through the essential elements involved in the management of the mining territory with figures of protection, in addition to mastering a software tool very useful for these purposes such as Systems GIS applied to land management and mining areas.

4. OBJECTIVES

- Know and manage the different existing figures on land use in mining areas .
- Know how to manage spatial information used in engineering, especially mining, using tools and methodologies of GIS.

6. SUBJECT PROGRAM	
CONTENTS	
1	<p>Practical Fundamentals of Geographic Information Systems:</p> <ul style="list-style-type: none"> - Basic concepts and tools of GIS Vector - Basic concepts and tools of GIS Raster - Case studies on management of mining areas,
2	<p>1. Theoretical Foundations of Planning Mining:</p> <ul style="list-style-type: none"> 1.1 Spatial planning in the mining sector. 1.2- territorial planning and development models in the mining sector. 1.3.- territorial planning and mineral resources. 1.4.- Application of legislaciónminera in territorial planning. 1.5.- sectoral and territorial planning units. 1.6.- territorial development and sustainable mining. <p>2. Theoretical Foundations of Geographic Information Systems:</p> <ul style="list-style-type: none"> 2.1 Introduction to the fundamental concepts and operations. 2.2 Structure and data format. 2.3 Algebra map 2.4 Spatial interpolation of data. 2.5.- Generation of thematic mapping. 2.6.- Management and GIS spatial analysis.

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Regular Test Subject	Written exam	No	Yes	30,00
evaluating practices	Laboratory evaluation	No	Yes	30,00
Development of a project Spatial Environments Mineros	Written exam	Yes	Yes	40,00
TOTAL				100,00
Observations				
All students who fail the course in ordinary test, may be submitted to the special examination September, respecting the grade obtained in the continuous evaluation.				
Observations for part-time students				
<p>Students enrolled in Part Time will be proposed the following alternative evaluation :</p> <ul style="list-style-type: none"> - At the beginning of the semester, each student will be proposed the development of a Territorial Ordinance project in mining environments. - The evaluation of the practices will be done through a content test equivalent to develop on a fixed date between the teacher and student at the beginning of the semester. - The ordinary and extraordinary tests of the subject will be the same. 				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

OLAYA FERRERO, V.: Sistemas de Información Geográfica. Impreso por Bubok. España. 2011

BOSQUE SENDRA, J.: Sistemas de Información Geográfica. Rialp,S.A. España. 1992.

FELICISIMO PEREZ, A. M.: Modelos digitales del terreno: principios y aplicaciones en las Ciencias Ambientales. Pentalfa Ediciones, Madrid.1994

VALENCIA MARTINEZ DE ANTOÑANA, J.: Pasado, presente y futuro de las infraestructuras de datos espaciales. Impreso por Bubok, España. 2008