



POLITÉCNICA

INTERNATIONAL
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LEARNING ACTIVITIES
PR/CL/001



E.T.S. de Ingenieros de Minas y
Energía

ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

63000275 - Land Management And Mining

DEGREE PROGRAMME

06AK - Master Universitario En Minería Sostenible

ACADEMIC YEAR & SEMESTER

2024/25 - Semester 1

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1. Description

1.1. Subject details

Name of the subject	63000275 - Land Management And Mining
No of credits	4 ECTS
Type	Compulsory
Academic year of the programme	First year
Semester of tuition	Semester 1
Tuition period	September-January
Tuition languages	English
Degree programme	06AK - Master Universitario en Minería Sostenible
Centre	06 - Escuela Técnica Superior De Ingenieros De Minas Y Energía
Academic year	2024-25

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Rogelio De La Vega Panizo (Subject coordinator)	602	rogelio.delavega@upm.es	M - 10:00 - 13:00 F - 10:00 - 13:00 appointment by e-mail
Luis Iglesias Martinez	601	luis.iglesias@upm.es	M - 09:00 - 11:00 W - 09:00 - 11:00 F - 09:00 - 11:00 appointment by e-mail

* The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty

member in charge.

3. Prior knowledge recommended to take the subject

3.1. Recommended (passed) subjects

The subject - recommended (passed), are not defined.

3.2. Other recommended learning outcomes

- The student should have previous knowledge of Geology, Cartography, Geographic Information Systems and Geomatics

4. Skills and learning outcomes *

4.1. Skills to be learned

CE12 - To assess the interrelation between mine design and the social and environmental impact; to design and assess the layout and organization of the more appropriate project, considering interaction with the environment and safety / Evaluar la interrelación entre el diseño de la explotación minera y los impactos en el entorno social y medioambiental; diseñar y evaluar el lay-out y la organización del proyecto más adecuado, considerando su interacción con el entorno y la seguridad

CE19 - Land zoning skills and application of GIS for the assessment of cultural, social and environmental factors connected with mining operations, including mine closing / Capacidad para zonificar el territorio con criterios de ordenación y aplicar los SIG en la evaluación de los factores culturales, sociales y ambientales asociados a las operaciones mineras, incluyendo el cierre de instalaciones, operaciones y emplazamientos mineros

CE7 - To understand the concepts of land management connected with mining activities / Comprender los conceptos de ordenación territorial en su relación con las actividades mineras

CE9 - To apply Geographical Information Systems to mining / Aplicar los Sistemas de Información Geográfica a la minería

CG3 - / To understand the impact that Mining of mineral and energetic resources has on the environment, the sustainable development of society and the importance of working in a professional and responsible environment. / Comprender el impacto de la Ingeniería Minera y la extracción de recursos minerales y energéticos en el medio

ambiente, el desarrollo sostenible de la sociedad y la importancia de trabajar en un entorno profesional y responsable

CG4 - Capacity to learn in an international context and complex environments, multidisciplinary and bilingual (English-Spanish) / Capacidad de trabajar en un contexto internacional y en entornos complejos, multidisciplinares y bilingües (inglés-español)

4.2. Learning outcomes

RA9 - Understanding of the Land Management concepts related with mining activities

RA11 - ? Understanding of the basic concepts of a Geographic Information System (GIS)

RA10 - ? Ability to zoning the land with management criteria and to develop a mining land management mapping

RA14 - To apply Geographic Information Systems to the assessment of cultural, social and environmental factors associated with mining operations sustainability and social responsibility

* The Learning Guides should reflect the Skills and Learning Outcomes in the same way as indicated in the Degree Verification Memory. For this reason, they have not been translated into English and appear in Spanish.

5. Brief description of the subject and syllabus

5.1. Brief description of the subject

Basic concepts in land use planning and management. How mining affects land use planning and management. Relations between social and cultural environment, landscape and mining.

5.2. Syllabus

1. Land use planing and management concepts
 - 1.1. Physical component
 - 1.2. Human component
2. Geographical Information Systemas as tool for analysis
3. Case studies

6. Schedule

6.1. Subject schedule*

Week	Type 1 activities	Type 2 activities	Distant / On-line	Assessment activities
1	<p>Land use planing and management concepts Duration: 01:00 Lecture</p> <p>Physical component Duration: 00:30 Lecture</p> <p>Human component Duration: 00:30 Lecture</p>	<p>Geographical Information Systemas as tool for analysis Duration: 02:00 Laboratory assignments</p>		
2		<p>Geographical Information Systemas as tool for analysis Duration: 04:00 Laboratory assignments</p>		<p>Geographical Information Systemas as tool for analysis Individual work Progressive assessment Not Presential Duration: 05:00</p>
3		<p>Geographical Information Systemas as tool for analysis Duration: 04:00 Laboratory assignments</p>		<p>Geographical Information Systemas as tool for analysis Individual work Progressive assessment Not Presential Duration: 05:00</p>
4		<p>Geographical Information Systemas as tool for analysis Duration: 04:00 Laboratory assignments</p>		<p>Geographical Information Systemas as tool for analysis Individual work Progressive assessment Not Presential Duration: 05:00</p>
5		<p>Geographical Information Systemas as tool for analysis Duration: 04:00 Laboratory assignments</p>		<p>Geographical Information Systemas as tool for analysis Individual work Progressive assessment Not Presential Duration: 05:00</p>
6	<p>Geographical Information Systemas as tool for analysis Duration: 04:00 Additional activities</p>			<p>Geographical Information Systemas as tool for analysis Individual presentation Progressive assessment Presential Duration: 04:00</p>

7		GIS as an analysis tool for the location of an inert waste landfill site Duration: 04:00 Laboratory assignments		
8		GIS as an analysis tool for the location of an inert waste landfill site Duration: 04:00 Laboratory assignments		
9		GIS as an analysis tool for the location of an inert waste landfill site Duration: 04:00 Laboratory assignments		
10	Legal Framework for Land Use Planning and Management in the country or region of the student Duration: 04:00 Additional activities			Legal Framework for Land Use Planning and Management in the country or region of the student Individual presentation Progressive assessment Presential Duration: 04:00
11				Case: Inert Waste Landfill Individual work Progressive assessment Not Presential Duration: 40:00
12				
13				
14				
15				
16				
17				FINAL PRACTICAL TEST Problem-solving test Global examination Presential Duration: 04:00

Depending on the programme study plan, total values will be calculated according to the ECTS credit unit as 26/27 hours of student face-to-face contact and independent study time.

7. Activities and assessment criteria

7.1. Assessment activities

7.1.1. Assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
2	Geographical Information Systemas as tool for analysis	Individual work	No Presential	05:00	10%	5 / 10	CE19 CE9
3	Geographical Information Systemas as tool for analysis	Individual work	No Presential	05:00	10%	5 / 10	CE19 CE9
4	Geographical Information Systemas as tool for analysis	Individual work	No Presential	05:00	10%	5 / 10	CE19 CE9
5	Geographical Information Systemas as tool for analysis	Individual work	No Presential	05:00	10%	5 / 10	CE19 CE9
6	Geographical Information Systemas as tool for analysis	Individual presentation	Face-to-face	04:00	10%	5 / 10	CG4 CE9 CE19
10	Legal Framework for Land Use Planning and Management in the country or region of the student	Individual presentation	Face-to-face	04:00	20%	5 / 10	CG4 CE12 CE7 CG3
11	Case: Inert Waste Landfill	Individual work	No Presential	40:00	30%	5 / 10	CE9 CE19 CG4 CE12

7.1.2. Global examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
17	FINAL PRACTICAL TEST	Problem-solving test	Face-to-face	04:00	100%	5 / 10	CG4 CE12 CE7 CG3 CE9 CE19

7.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
FINAL PRACTICAL TEST	Problem-solving test	Face-to-face	04:00	100%	5 / 10	CG4 CE12 CE7 CG3 CE19 CE9

7.2. Assessment criteria

Continuous assessment of the skills acquired by the student in classroom, laboratory or field activities; in individual or group work, together with a global knowledge test that will ensure the assessment of both the competences of the subject and the results of the student's learning.

The grade for PROGRESSIVE EVALUATION is obtained by the weighted sum of the grades of the individual assignments. In order to pass the course, the grade must be equal or higher than 5 (out of 10) in each of the individual assignments.

In order to be evaluated by PROGRESSIVE EVALUATION, a 90% attendance to both theory and practical classes is compulsory.

THE FULFILLMENT OF THIS CONDITION IS A MANDATORY REQUIREMENT FOR THE STUDENT TO BE EVALUATED BY CONTINUOUS EVALUATION.

If attendance is less than 90%, the evaluation will be carried out by means of a FINAL PRACTICAL TEST of the course with two possible convocations, an ordinary one (JUNE) and an extraordinary one (JULY).

The evaluations by means of a FINAL PRACTICAL TEST will consist of a practical exam in a computer classroom in which the student will have to demonstrate his knowledge of land management in relation to mining activities by analyzing a series of proposed geographic data of a given territory, using the software tools provided by the ArcGIS or Quantum GIS software packages. The grade, in order to pass the course, must be equal or higher than 5 (out of 10).

8. Teaching resources

8.1. Teaching resources for the subject

Name	Type	Notes
Transparencias	Web resource	Transparencias del curso
ORDENACION TERRITORIAL	Bibliography	Titulo: Ordenación Territorial Autores: Domingo Gómez Orea Alejandro Gómez Villarino
ORDENACION MINERA	Bibliography	Minería, medio ambiente y gestión del territorio Julio Cesar Arranz González Esther Alberruche del Campo

9. Other information

9.1. Other information about the subject

ODS4 ODS12 ODS13 ODS14 ODS15 ODS16