

## SUBJECT TEACHING GUIDE

G598 - Environmental Impact on Energy Production

Degree in Energy Resources Engineering

Academic year 2022-2023

1. IDENTIFYING DATA					
Degree	Degree in Energy Resources Engineering			Type and Year	Compulsory. Year 4
Faculty					
Discipline	Subject Area: Mining Pre-Technology Module: Training in Common with the Mining Branch				
Course unit title and code	G598 - Environmental Impact on Energy Production				
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. CIENCIAS Y TECNICAS DEL AGUA Y DEL MEDIO AMBIENTE				
Name of lecturer	XABIER EDUARDO MORENO-VENTAS BRAVO				
E-mail	xabier.moreno@unican.es				
Office	E.T.S. de Ingenieros de Caminos, Canales y Puertos. Planta: + 2. DESPACHO (2015)				
Other lecturers					

3.1 LEARNING OUTCOMES
- Elementary knowledge of mathematical and physical processes in accordance with those taught in the basic training module and in the subject of advanced basic training in this same module.
- Understand and manage specific legislation environmental assessment and sectoral
- Formulate, propose and organize the Environmental Sustainability of plans and programs
- Formulate, propose and organize the Environmental Impact Study Project
- Learn the methodology to identify and assess the environmental impacts
- Propose, formulate, preventive, corrective and compensatory alternative measures to minimize the effects of environmental impacts
- Know and practice methods for selecting alternatives

#### 4. OBJECTIVES

Understand the concepts and working methods that constitute the body of doctrine of Environmental Assessment

#### 6. COURSE ORGANIZATION

##### CONTENTS

1	Environmental impact of energy. Nature and attributes of the environmental impact. The environmental evaluation of plans, programs and projects. Environmental legislative. The Environmental Impact Studies.
1.1	The impact on the natural environment: Impacts on the atmospheric environment. Impacts on the ground. Impacts on the waters. Impacts on the biotic environment. Impacts on the landscape. The impact on the human environment. Impacts on the social environment. Impacts on the economic environment. Impacts on cultural heritage.
1.2	The impact on the human environment: Impacts on the social environment. Impacts on the economic environment. Impacts on cultural heritage.
2	Mining and environment. Legislation. Types of mining operations. Rubble heap and waste dams.
2.1	Identification and assessment of alterations. Techniques for identification of impacts. Techniques for assessing impacts. Sorting techniques and selection of alternatives.
2.2	Measures of environmental improvement. Atmospheric pollution. Water contamination. Radioactive pollution. Control of abandoned work. Control of erosion and sedimentation. Environmental monitoring Objectives of environmental monitoring. Environmental monitoring plan.
2.3	Environmental restoration and landscape integration. Uses of the lands affected by mining activities. Topographic and edaphological restoration. Restoration of vegetation. Selection of species and methods of implementation. Economic evaluation of restoration projects.

## 7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Evaluation of the contents 1; 1.1; 1.2; 2	Written exam	Yes	Yes	30,00
Evaluation of the contents 2.1; 2.2 y 2.3	Written exam	Yes	Yes	30,00
Developing a case study of environmental impact assessment and environmental legislation	Work	No	Yes	40,00
<b>TOTAL</b>				<b>100,00</b>

### Observations

In relation to the evaluation activities that are recoverable:

A) To pass the course you must have a grade equal to or greater than 4 in the work, and equal to or greater than 5 in each of the two written exams.

B) A student may only attend the recovery of those activities that she has not passed, that is, in which she has not obtained a minimum grade of five out of ten.

C) In the recovery period, the evaluation procedure of an activity will be the same as that of the activity that originates it. D) An activity is considered recoverable when there is the possibility of exceeding it in the extraordinary recovery period established by the University. E) Extraordinary evaluation: the student will have the right to take an exam in the extraordinary session with a value of 100% of the total mark of the recoverable activities of the subject.

In the case of not exceeding the minimum grades, the overall numerical grade will be the lowest value between 4.9 and the weighted average of all the evaluation tests, as indicated in the Regulation of the Evaluation Processes of the UC, in its article 35.

Qualification not presented: when a student has not carried out evaluation activities whose weight exceeds 50% of the grade of the subject, it will appear in its minutes as not presented. When you have carried out tests that represent the aforementioned 50%, the corresponding qualification will appear in the minutes.

The typology of the exams foreseen in the guide will consist of questionnaires of questions that will be designed to serve both for their face-to-face realization and in the distance modality.

Remote assessment shall be used when the competent health and educational authorities so indicate.

The distance evaluation modality will be carried out through the telematic resources of the University of Cantabria.

Advance call: students who request advance call in accordance with art. 19 of the Regulations of the evaluation processes of the UC, will be evaluated of 100% of the subject by means of a single evaluation, art. 3 of the aforementioned Regulation, which will consist of a written exam (with a value of 60% of the total grade) and the realization and delivery of a practical work proposed by the teacher (with a value of 40% of the total grade).

According to RD 1125/2003 on the European credit system and the qualification system in university degrees of an official nature and valid throughout the national territory, the results obtained by the student in each of the subjects of the curriculum will be graded according to the following numerical scale from 0 to 10, with expression of one decimal, to which may be added its corresponding qualitative rating:

0.0-4.9: Suspense (SS). 5.0-6.9: Approved (AP). 7.0-8.9: Notable (NT). 9.0-10: Outstanding (SB)

### Observations for part-time students

Part-time students will undergo an evaluation process consisting of a written examination of the subject (60% of the final grade) plus the completion and delivery of an environmental assessment work (40 % Of final grade).

## 8. BIBLIOGRAPHY AND TEACHING MATERIALS

### BASIC

Gómez Orea. 1999. Evaluación de Impacto Ambiental. Mundi-Prensa. Madrid.

Gómez Orea. 2007. Evaluación Ambiental Estratégica. Mundi-Prensa. Madrid.

Garmendia, A. Slavador, A.; Crespo, C.; Garmendia, L. 2005. Evaluación de Impacto Ambiental. Pearson/Prentice Hall. Madrid.

Ballester, F. y A. Valcarce. 1997. Los sistemas de gestión medioambiental y su aplicación a la construcción. Ed. Agrupación Nacional de Constructores de Obras. Madrid.