

SUBJECT TEACHING GUIDE

G637 - Mineral Processing

Degree in Mining Resources Engineering

Academic year 2025-2026

1. IDENTIFYING DATA

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|----------------------------------|---|------------------|-----|--------------------|---------------|--------------------|
| Degree | Degree in Mining Resources Engineering | | | | Type and Year | Compulsory. Year 4 |
| Faculty | School of Mines and Energy Engineering | | | | | |
| Discipline | Subject Area: Minerallurgical Technology Module: Training in Exploitation of Mines | | | | | |
| Course unit title and code | G637 - Mineral Processing | | | | | |
| Number of ECTS credits allocated | 6 | Term | | Semester based (1) | | |
| Web | | | | | | |
| Language of instruction | Spanish | English Friendly | Yes | Mode of delivery | | Face-to-face |

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| Department | DPTO. TRANSPORTES Y TECNOLOGIA DE PROYECTOS Y PROCESOS |
| Name of lecturer | JAVIER SEDANO CIBRIAN |
| E-mail | javier.sedano@unican.es |
| Office | E.P. de Ingeniería de Minas y Energía. Planta: + 2. DESPACHO (232) |
| Other lecturers | BEATRIZ MALAGON PICON |

3.1 LEARNING OUTCOMES

- After completing the module the students should be able to:
 - Characterize ores for mineral processing purposes.
 - Select the appropriate unit operations to treat a specific ore.
 - Integrate all this knowledge to design an entire process.

4. OBJECTIVES

To introduce the students to the fundamentals of mineral processing particularly with regard to the basic operations and the assessment of the results obtained from their implementation.

To offer to the students an adequate training so that they can make the correct equipment selection in order to design , dimension and control ore dressing processes.

| 6. SUBJECT PROGRAM | |
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| CONTENTS | |
| 1 | <p>BLOCK I: INTRODUCTION, AUXILIARY OPERATIONS.</p> <ul style="list-style-type: none"> - Mineralurgy, generalities. - Expression of the results of a concentration operation. - Characteristic formulas of pulps. - Preparation: fragmentation. - Fragmentation circuits. - Auxiliary operations. |
| 2 | <p>PART 2. CONMINUTION AND PHYSICAL SEPARATION</p> <ul style="list-style-type: none"> •Comminution •Crushing •Grinding •Classification |
| 3 | <p>PART 3. PLANT DESIGN AND OPERATION</p> <ul style="list-style-type: none"> • Scale-up of laboratory results • Basic circuits • Maintenance of mineral processing plants • Waste management |

| 7. ASSESSMENT METHODS AND CRITERIA | | | | |
|--|--------------|-------------|-----------|--------|
| Description | Type | Final Eval. | Reassessn | % |
| Quiz | Written exam | No | Yes | 20,00 |
| Final examination | Written exam | Yes | Yes | 60,00 |
| Assignments | Work | No | Yes | 20,00 |
| TOTAL | | | | 100,00 |
| Observations | | | | |
| If the minimum grade is not reached in any of the parts, the final mark will be the minimum of 4.9 plus the weighted mean all the evaluation activities. The notes of the passed parts will be maintained until the extraordinary call. | | | | |
| Observations for part-time students | | | | |
| Part-time students will be evaluated according to the internal regulations of the University of Cantabria. In addition to requiring the passing of the Final Content Examination, given the characteristics of activities proposed for continuous assessment, the student with part-time enrollment will be subject to them as well as students with ordinary enrollment, although the Group Work may be Replaced by an Individual Work of related subject if requested by the student . | | | | |

| 8. BIBLIOGRAPHY AND TEACHING MATERIALS |
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| BASIC |
| Tecnología de Procesamiento de Minerales, Tratamiento de Menas y Recuperación de Minerales. Autor: B.A. Wills. Ed. Limusa, 1986. |
| Tecnología de los aparatos de fragmentación y de clasificación dimensional . Autor: E.C.Blanc. Colección Rocas y Minerales, 1977. |
| Circuitos de Trituración y Molienda de Minerales. Autor: A.J. Lynch. Editorial Rocas y Minerales, 1980. |
| El Beneficio de los Minerales (Manual de Mineralurgia). Autor: Pierre Blazy. Ed. Rocas y Minerales. |
| Apuntes de la asignatura dispuestos en el aula virtual y OpenCourseWare. |

