

SUBJECT TEACHING GUIDE

1133 - Mineral Processing Plants

Master's Degree in mining engineering

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Academic year 2025-2026

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	1133 - Mineral Processing Plants				
Number of ECTS credits allocated	3	Term	Semester based (1)		
Knowledge Field	Architecture, construction, building and urban planning, civil engineering Architecture, construction, building and urban planning, civil engineering				
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. TRANSPORTES Y TECNOLOGIA DE PROYECTOS Y PROCESOS				
Name of lecturer	BEATRIZ MALAGON PICON				
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Office	E.P. de Ingeniería de Minas y Energía. Planta: + 2. DESPACHO (234)				
Other lecturers					

4. OBJECTIVES

After completing the course the student should be able to plan, design, and manage facilities for mineral resources treatment, metallurgical plants, and construction materials industries, including metallic, ceramic, sintered, refractory and other materials.

6. SUBJECT PROGRAM	
CONTENTS	
1	PART I: INTRODUCTION, AUXILIARY OPERATIONS I.1. Mineral processing, generalities. I.2. Expression of the results of a concentration operation. I.3. Metallurgical accounting. I.4. Comminution. I.5. Fragmentation circuits. I.6. Auxiliary operations
2	PART II: PREPARATION OF MINERALS II.1. Crushing: primary, secondary and tertiary crushers. II.2. Milling: Theories of fragmentation. II.3. Classification: Types of classification. II.4. Movement of solids within a fluid. II.5. Classification equipment.
3	PART III: MINERAL PROCESSING PLANTS III.1. Design, operation and maintenance of treatment and purification plants: industrial rocks and ornamental stones. III.2. Design, operation and maintenance of building materials plants.
4	PART IV: PLANTS FOR THE TREATMENT OF DEMOLITION WASTE IV.1. Design, operation and maintenance of plants for the recovery and recycling of waste from construction and demolition. IV.2. Products resulting from the processing of construction wastes. Applications.

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Final exam 70%	Written exam	Yes	Yes	70,00
Group work 15%	Work	No	No	15,00
Practical work 15%	Others	No	No	15,00
TOTAL				100,00
Observations				
Make-up exam will take place in the extraordinary period dedicated to this purpose and in the same way as the tests of the ordinary evaluation.				
Observations for part-time students				
Students enrolled part-time will be assessed in accordance with UC regulations. In addition to having to pass the final exam, they will be given the opportunity to present their work and practicals individually, on a date agreed with them.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- Los residuos minero-metalúrgicos en el medio ambiente por Rodríguez Pacheco, Roberto Lorenzo; García Cortés, Ángel .Medio ambiente IGME, 2006
- La industria extractiva no energética y el medio ambiente en el marco del desarrollo sostenible por Baretino, D; Obis, Joaquín; Espí Rodríguez, José A.Medio ambiente IGME, 2005.
- Equipos de trituración, molienda y clasificación. Tecnología, diseño y aplicación.
Luis Fueyo, Edit. rocas y minerales año 2002
- Selección práctica y aplicaciones de los equipos de trituración.
Antonio Duran López, Luis Fueyo Casado, Edit. fueyo 2007
- Manual de demoliciones, reciclajes y manipulación de materiales. Luis Fueyo, Edit. Fueyo 2003
- Recursos minerales. Tipología, prospección, evaluación, explotación, mineralurgia e impacto ambiental.
M. Bustillo Revuelta, y Carlos López Jimeno. Edt. Arias Montado S.A. 1996