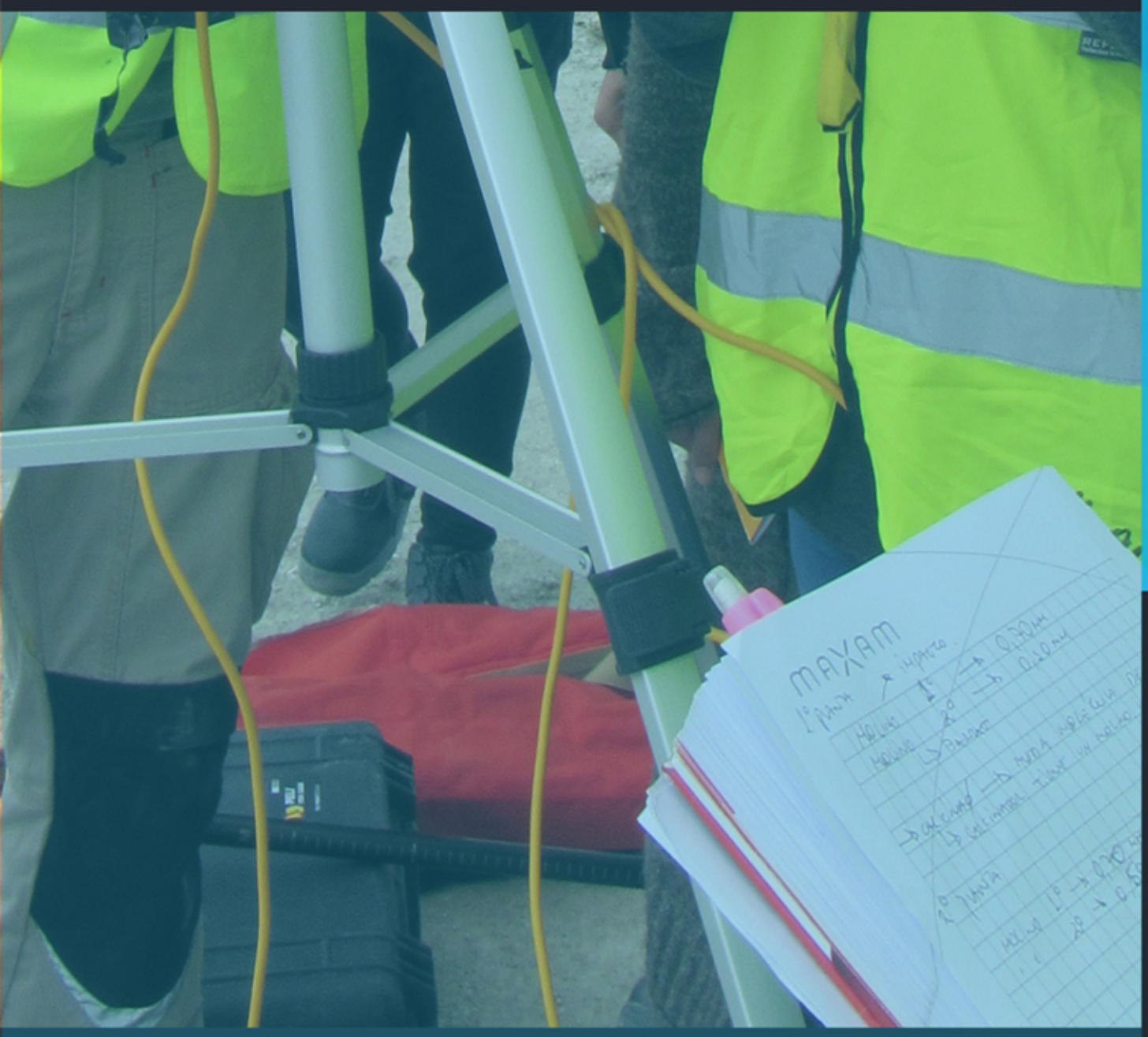
MDSM

MASTER IN
Sustainable Mining



POLITÉCNICA

UNIVERSIDAD POLITÉCNICA DE MADRID

ESCUELA TÉCNICA SUPERIOR DE INGENIEROS DE MINAS Y ENERGÍA

MASTER IN
Sustainable Mining

Branch of knowledge
Engineering and architecture
Responsible Center
Escuela Técnica Superior de Ingenieros de Minas y Energía

Orientation: Professional / Researcher
Credits: 60
Duration: 2 semesters (1 academic year)
Modality: Face-to-face
Number of places: 25
Language: Bilingual (English / Spanish)

www.minasyenergia.upm.es/master_mineria_sostenible

Are you a...

Mining Engineer, Mineral Processing Engineer, Metallurgical Engineer, Geological Engineer, Geologist, Earth Sciences Graduate, Civil Engineer, Geotechnical Engineer, Geomatics Engineer or Graduate, Environmental Engineer or Graduate, ...?

Then you are eligible for admission into the Master in Sustainable Mining!

Objectives

Training future professionals in the mining area, from exploration to operation and management.

The program provides the necessary knowledge and skills for long-term professional development in companies in the mining and environmental sectors, as well as for priming into related research activities.

Professional skills

- Mining and environment. Efficient and sustainable production of raw materials.
- Social license to operate.
- Global raw materials scenarios.
- Business management and economics.
- Ethics and leadership.

Why study the Master in Sustainable Mining?

Mining is the productive sector driving world growth. Ordinary and technological products require mineral raw materials that are sourced by the mining activity. Problems associated with mining can result in a limitation for technological development and world welfare. This need of society must be made compatible with socially and environmentally responsible mining, in order to provide a sustainable supply of the enormous amount of minerals that our world demands.

The focus on environment and sustainability makes the Master in Sustainable Mining a training that tackles the critical aspects of global mining activity. The need for mining professionals is very high, and therefore the employment prospects in the sector are worldwide unbeatable.

Structure

The Master consists of 60 credits (ECTS) that are taught in one academic year, beginning in September and ending in June.

The first semester consists of 30 credits: six compulsory courses of 4 credits each, and 6 more credits in seminars to be chosen by the student. This first semester is taught in English.

The second semester also consists of 30 credits: three compulsory courses of 4 credits each, 6 credits of the student's choice between internships or seminars, and 12 credits assigned to the Master's Thesis (MT). This second semester is taught in Spanish; the MT can be carried out in Spanish or English.

AMRD

The Master's Degree in Sustainable Mining is affiliated with the international Master in Advanced Mineral Resources Development (AMRD). The AMRD is one of the most prestigious international masters in mining, participated by a selection of the best world universities in mining studies:

- Universidad Politécnica de Madrid (Spain)
- Montanuniversität Leoben (Austria)
- Technische Universität Bergakademie Freiberg (Germany)
- Saint Petersburg Mining University (Russia)
- Dnipro University of Technology (Ukraine)
- Universidade de Lisboa (Portugal)
- Amirkabir University of Technology Tehran (Iran)
- China University of Mining and Technology Beijing (China)
- German-Mongolian Institute for Resources and Technology Ulan Bator (Mongolia)

The AMRD is a 120-credit (ECTS) master's degree that is carried out in two academic years, the first one at the Universities of Leoben and Freiberg and the second one at any of the other participating universities. It is taught entirely in English. At Universidad Politécnica de Madrid, the second year of the master corresponds to the first semester of the Master of Sustainable Mining, plus a second semester dedicated exclusively to the Master's Thesis, with an extension of 30 credits.

AMRD students obtain the Master's degree in Sustainable Mining from UPM, and the International Master of Science in Advanced Mineral Resources Development from the Universities of Leoben and Freiberg.

The AMRD Master is exempt from tuition fee, both at the Universities of Leoben and Freiberg, and at UPM. An international, prestigious 120-credit master, FREE!

More information in:
https://www.unileoben.ac.at/de/4278/

AMRD

Syllabus

Period	Activities	Credits (ECTS)
	Supplements (if required)	Up to 22,5
FIRST SEMESTER	6 courses of 4 credits	24
	Seminars I	6
SECOND SEMESTER	3 courses of 4 credits	12
	Seminars II, or Internship	6
	Master's Thesis	12
	Total	60

FIRST SEMESTER	ECTS	Language
Exploration and evaluation of mineral deposits Exploración y evaluación de yacimientos minerales	4	English
Sustainable management of mining operations Gestión sostenible en empresas mineras	4	English
Mine planning and design Diseño y planificación minera	4	English
Advanced rock engineering Ingeniería de rocas avanzada	4	English
Advanced explosives engineering Ingeniería de explosivos avanzada	4	English
Land management and mining Gestión responsable del territorio y minería	4	English
Seminars I Seminarios I	6	English
SECOND SEMESTER	**ECTS**	**Language**
Economy, financing and sustainability of mining projects Economía, financiación y sostenibilidad de proyectos mineros	4	Spanish
Conceptual design of mineral processing plants – BAT Diseño conceptual de instalaciones mineralúrgicas – MTD	4	Spanish
Mine waste management Gestión de estériles de mina	4	Spanish
Seminars II or Internship Seminarios II o Prácticas en empresa	6	Spanish
Master's Thesis Trabajo Fin de Máster	12	Eng/Spa

Seminars offered

Seminars offered vary from one course to another.
Some examples are:

- Mine backfill.
- Remote sensing.
- Drones in mining.
- Soil and water contamination by mining operations.
- Decontamination of soils and waters.
- Advanced mining design tools.
- Mines closure and reclamation: environmental liabilities.
- Optimization.
- Advanced mining safety.
- Computer applications for mining.
- Entrepreneurship, talent management and business risks.
- Financing and economics in engineering.
- Field trips.

Contact

Program Coordinador:
José A. Sanchidrián
ja.sanchidrian@upm.es
Correspondence:
postgrado.minasyenergia@upm.es
ana.arribas@upm.es
Universidad Politécnica de Madrid
ETSI Minas y Energía
C/ Ríos Rosas, 21
28003 Madrid
Spain
Phones: (+34) 910 676 309 / (+34) 910 676 374 /
(+34) 910 676 493

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28003 Madrid. Spain

The content of this brochure is subject to possible modifications
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