MSM

The Master on Sustainable Minerals aims at a high-level academic instruction of future professionals of the mining industry in all its facets, from exploration to mining, plant operation and management.

Mining is the productive sector in which global growth is borne. Mining-related problems must be handled so that they do not limit the raw materials supply needed for the technological development of the World. In particular, environmental affections, social responsability and sustainability, are the key challenges that mining must manage for a prosperous future.











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Universidad Politécnica de Madrid

E.T.S.I. Minas y Energía

Sustainable Minerals



Master Sustainable Minerals

- UPM's official master degree.
- Intended for mining, geological and geothechnical engineers, civil engineers, geologists and Earth Sciences graduates. Up to 30 credits foreseen for leveling of graduates from other fields of engineering.
- Topics: Mining Technology, Environmental, Economics & Management.
- Credits: 60 ECTS.
- Duration: One academic year (2 Semesters).
- Languages: Bilingual English/Spanish (more than 50 % of the courses given in English).
- Location: ETSI Minas y Energía (Universidad Politécnica de Madrid)



Structure

FIRST SEMESTER: REQUIRED SUBJECTS Mine Planning and Design
Advanced Rock Engineering
Advanced Explosives Engineering: Environmental Topics
Conceptual Design of Mineral Processing Plants – BAT Responsible Land Management and Mining SECOND SEMESTER: OPTIONAL BLOCK (12 ECTS - OPT.) • Internship (6 ECTS) Seminars (12 ECTS) • Seminars (6 ECTS) Optional Seminars (1,5 ECTS): · Mine closure and remediation Advanced mine ventilation management · Asset management in mining Neural networks · Massive sulphide deposits · Geophysical prospecting applied to mining Mine backfill · Advanced mining technologies and automation · Remote sensing applied to environmental management · Advanced topics on mine safety · Compared environmental regulations in mining · Applied engineering economics · Human health and eco-system risk assessment

Soil and water pollution from mine operations
 Atmospheric pollution from mine operations

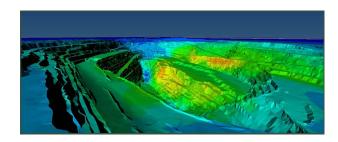
MASTER'S THESIS (12 ECTS)

Soil and water remediation techniquesMining landscape architecture

Topics

- Mining technology and management
- Efficient and sustainable production of raw materials
- Environmental and social aspects
- · Global raw materials scenarios
- Ethics and leadership.

The Master on Sustainable Minerals boasts the support of major exploration, mining and equipment manufacturing companies.



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