

Course guide

330601 - MPM - Modeling in Mineral Processing

Last modified: 25/04/2024

Unit in charge: Manresa School of Engineering
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering.

Degree: MASTER'S DEGREE IN MINING ENGINEERING (Syllabus 2013). (Compulsory subject).

Academic year: 2024 **ECTS Credits:** 5.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Oliva Moncunill, Josep

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. (ENG) Capacitat per planificar, dissenyar i gestionar instal·lacions de tractaments de recursos minerals.
2. (ENG) Coneixement adequat de la tecnologia d'explotació de recursos minerals.
3. (ENG) Coneixement de sistemes de control i automatismes.

Transversal:

4. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 1. Analyzing the world's situation critically and systemically, while taking an interdisciplinary approach to sustainability and adhering to the principles of sustainable human development. Recognizing the social and environmental implications of a particular professional activity.
5. TEAMWORK - Level 1. Working in a team and making positive contributions once the aims and group and individual responsibilities have been defined. Reaching joint decisions on the strategy to be followed.
6. EFFECTIVE USE OF INFORMATION RESOURCES - Level 1. Identifying information needs. Using collections, premises and services that are available for designing and executing simple searches that are suited to the topic.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

Type	Hours	Percentage
Self study	80,0	64.00
Hours medium group	45,0	36.00

Total learning time: 125 h



CONTENTS

title english

Description:

content english

Full-or-part-time: 30h

Theory classes: 5h 24m

Laboratory classes: 5h 24m

Self study : 19h 12m

title english

Description:

content english

Full-or-part-time: 10h

Theory classes: 1h 48m

Laboratory classes: 1h 48m

Self study : 6h 24m

title english

Description:

content english

Full-or-part-time: 15h

Theory classes: 2h 42m

Laboratory classes: 2h 42m

Self study : 9h 36m

title english

Description:

content english

Full-or-part-time: 25h

Theory classes: 4h 30m

Laboratory classes: 4h 30m

Self study : 16h

title english

Description:

content english

Full-or-part-time: 20h

Theory classes: 3h 36m

Laboratory classes: 3h 36m

Self study : 12h 48m



title english

Description:

content english

Full-or-part-time: 15h

Theory classes: 2h 42m

Laboratory classes: 2h 42m

Self study : 9h 36m

title english

Description:

content english

Full-or-part-time: 10h

Theory classes: 1h 48m

Laboratory classes: 1h 48m

Self study : 6h 24m

ACTIVITIES

name english

Full-or-part-time: 30h

Laboratory classes: 15h

Self study: 15h

name english

Full-or-part-time: 32h

Theory classes: 2h

Self study: 30h

name english

Full-or-part-time: 43h

Practical classes: 8h

Self study: 35h

GRADING SYSTEM



BIBLIOGRAPHY

Basic:

- King, R. P. Modeling and simulation of mineral processing systems [on line]. 2nd ed. Englewood: Society for Mining, Metallurgy and Exploration, 2012 [Consultation: 26/07/2022]. Available on: <https://www.sciencedirect-com.recursos.biblioteca.upc.edu/book/9780080511849/modeling-and-simulation-of-mineral-processing-systems>. ISBN 97800873353458.
- Gupta, A.; Yan, D. S. Mineral processing design and operation: an introduction [on line]. Amsterdam: Elsevier, 2016 [Consultation: 05/12/2023]. Available on: <https://www.sciencedirect-com.recursos.biblioteca.upc.edu/book/9780444635891/mineral-processing-design-and-operations>. ISBN 9780444635921.
- Lynch, Alban, ed. Comminution handbook. Carlton Victoria: The Australasian Institute of Mining and Metallurgy, 2015. ISBN 9781925100372.
- Holloway, M. D.; Nwaoha, C.; Onyewuenyi, O. A., eds. Process plant equipment: operation, control, and reliability [on line]. Hoboken: Wiley, 2012 [Consultation: 10/06/2022]. Available on: <https://onlinelibrary-wiley-com.recursos.biblioteca.upc.edu/doi/book/10.1002/9781118162569>. ISBN 9781118022641.
- Malhotra, Deepak, ed. Recent advances in mineral processing plant design [on line]. Littleton: Society for Mining, Metallurgy, and Exploration, 2009 [Consultation: 25/11/2022]. Available on: https://search-ebshost-com.recursos.biblioteca.upc.edu/login.aspx?direct=true&AuthType=ip,uid&db=nlebk&AN=439094&site=ehost-live&ebv=EB&ppid=pp_Cover. ISBN 9780873353168.
- Mular, A. L.; Halbe, D. N.; Barratt, D. J., eds. Mineral processing plant design, practice, and control: proceedings. Littleton: Society for Mining, Metallurgy and Exploration, 2002. ISBN 0873352238.
- Wills, B. A. Mineral processing technology: an introduction to the practical aspects of ore treatment and mineral recovery [on line]. 6th ed. Oxford: Butterworth-Heinemann, 1997 [Consultation: 10/06/2022]. Available on: <https://www.sciencedirect-com.recursos.biblioteca.upc.edu/book/9780750644501/wills-mineral-processing-technology>. ISBN 0750628383.
- Hartman, H. L., ed. SME mining engineering handbook [on line]. 2nd ed. Littleton: Society for Mining, Metallurgy and Exploration, 1992 [Consultation: 24/05/2022]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=655790>. ISBN 0873351002.

Complementary:

- Evertsson, Carl Magnus. Cone crusher performance [on line]. Göthenborg: Chalmers University of Technology, 2000 [Consultation: 21/12/2020]. Available on: <http://publications.lib.chalmers.se/records/fulltext/759/759.pdf>. ISBN 9171978569.
- Kawatra, S. Komar, ed. Advances in comminution [on line]. Littleton: Society for Mining, Metallurgy and Exploration, 2006 [Consultation: 06/06/2024]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=464580>. ISBN 0873352467.
- Drelich, Jaroslaw, ed. Water in mineral processing [on line]. Englewood: Society for Mining, Metallurgy, and Exploration, 2012 [Consultation: 25/11/2022]. Available on: https://search-ebshost-com.recursos.biblioteca.upc.edu/login.aspx?direct=true&AuthType=ip,uid&db=nlebk&AN=439490&site=ehost-live&ebv=EB&ppid=pp_Cover. ISBN 9780873353496.
- Lynch, Alban J.; Rowland, Chester A. History of grinding [on line]. Littleton: Society for Mining, Metallurgy, and Exploration, 2005 [Consultation: 27/05/2022]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?docID=464593>. ISBN 9780873352819.
- Fuerstenau, Maurice C.; Han, Kenneth N., eds. Principles of mineral processing [on line]. Littleton: Society for Mining, Metallurgy, and Exploration, 2003 [Consultation: 06/06/2024]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=464605>. ISBN 0873351673.