

## 330434 - MIPO - Potash Mining

Coordinating unit: 330 - EPSEM - Manresa School of Engineering  
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering  
Academic year: 2019  
Degree: BACHELOR'S DEGREE IN MINING ENGINEERING (Syllabus 2016). (Teaching unit Optional)  
ECTS credits: 6 Teaching languages: Catalan, Spanish

### Teaching staff

Coordinator: Sánchez Comellas, Alberto

### Degree competences to which the subject contributes

Specific:

1. (ENG) Geologia.
2. (ENG) Mecànica de roques.
3. (ENG) Explotació.
4. (ENG) Sosteniment.
5. (ENG) Subsídencias.
6. (ENG) Integritat de les barreres geològiques davant l'aigua.
7. (ENG) Col·lapses.
8. (ENG) Plantes de flotació de potassa.
9. (ENG) Productors i mercats.

Transversal:

10. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 3. Taking social, economic and environmental factors into account in the application of solutions. Undertaking projects that tie in with human development and sustainability.
11. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
12. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.
13. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.

### Learning objectives of the subject

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### Study load

Total learning time: 150h	Hours large group:	0h	0.00%
	Hours medium group:	60h	40.00%
	Hours small group:	0h	0.00%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

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### Content

title english	Learning time: 8h Practical classes: 8h
Description: content english	
title english	Learning time: 20h Practical classes: 20h
Description: content english	
title english	Learning time: 16h Practical classes: 16h
Description: content english	
title english	Learning time: 4h Practical classes: 4h
Description: content english	
title english	Learning time: 4h Practical classes: 4h
Description: content english	
title english	Learning time: 4h Practical classes: 4h
Description: content english	

## 330434 - MIPO - Potash Mining

title english	Learning time: 3h Practical classes: 3h
Description: content english	

title english	Learning time: 1h Practical classes: 1h
Description: content english	

### Planning of activities

name english	Hours: 6h Practical classes: 6h

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### Bibliography

#### Basic:

- Cristescu, N.; Hunsche, U.. Time effects in rock mechanics. New York: Wiley, 1997. ISBN 0471955175.
- Pariseau, William G. Design analysis in rock mechanics. London: Taylor & Francis, 2007. ISBN 9780415403573.
- Amadei, Bernard ; Stephansson, Ove. Rock stress and its measurement. New York: Chapman & Hall, 1997. ISBN 0412447002.
- Cristescu, N. D. Rock rheology. Dordrecht: Kluwer Academic, 1989. ISBN 9024736609.
- Cristescu, N. D.; Gioda, G.. Visco-plastic behaviour of geomaterials. Wien: Springer-Verlag, 1994. ISBN 9783211825860.
- Ayala Carcedo, F.J. [et al.]. Introducción a los usos industriales y urbanos del espacio subterráneo y su tecnología. Madrid: Instituto Geológico y Minero de España, 1986.
- Jeremic, M.J.. Rock mechanics in salt mining. Rotterdam: A.A. Balkema, 1994. ISBN 9054101032.
- Darling, Peter, ed. SME Mining engineering handbook. 3rd ed. Littleton: Society for Mining, Metallurgy and Exploration, 2011. ISBN 9780873352642.

#### Complementary:

- Campos de Orellana, J. A. Trabajos en minas de potasa [documentació d'Iberpotash]. Súrria: Iberpotash, [200?].
- Bibliografia d'Iberpotash [recull bibliogràfic]. Súrria: ICL Iberia, [200?-].
- Herrera Herbert, J.; Gómez Jaén, J. P. Diseño de explotaciones e infraestructuras mineras subterráneas [on line]. Madrid: Universidad Politécnica de Madrid, Escuela Técnica Superior de Ingenieros de Minas, 2007 [Consultation: 03/05/2018]. Available on: <[http://oa.upm.es/21841/1/071101\\_L3\\_labores\\_subterranas\\_2.pdf](http://oa.upm.es/21841/1/071101_L3_labores_subterranas_2.pdf)>.
- Treballs de reologia [apunts]. Valencia: Universitat Politecnica de Valencia, [200?-].
- RocScience [programes informàtics] [on line]. Melissia: Geosysta, 2018 [Consultation: 03/05/2018]. Available on: <<http://geotechpedia.com/Software/Publisher/2/RocScience>>.
- Lain, R. Consideraciones geotécnicas [documentació d'Iberpotash]. Súrria: Iberpotash, [200?].
- Obert L.; Duvall, W. I.; Merrill, R. H. Design of underground openings in competent rock [on line]. Washington: U.S. Department of the Interior, Bureau of Mines, 1960 [Consultation: 03/05/2018]. Available on: <<https://digicoll.manoa.hawaii.edu/techreports/PDF/USBM-587.pdf>>.
- The mechanical behavior of salt. Vol. I-VIII. Boca Raton: CRC Press/Balkema, [1981?-].
- Somerton, W. H., ed. Rock mechanics: theory and practice: proceedings: Eleventh Symposium on Rock Mechanics, held at the University of California, Berkeley, California, June 16-19, 1969. New York: Society of Mining Engineers, American Institute of Mining, Metallurgical, and Petroleum Engineers, 1970.
- Laboratorio Oficial J. M. Madariaga. Guía sobre control geotécnico en minería subterránea [on line]. Madrid: Gobierno de España, Ministerio de Industria, Energía y Turismo, 2015 [Consultation: 03/05/2018]. Available on: <<https://energia.gob.es/mineria/Seguridad/Guias/Gu%C3%ADas/Guia-control-geotecnico-mineria-subterranea.pdf>>.