

330431 - UE - Use of Explosives

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 Compulsory)
 ECTS credits: 6 Teaching languages: Catalan

Teaching staff

Coordinator: Sanmiquel Pera, Lluís
 Others: Cámara Zapata, Eduardo

Degree competences to which the subject contributes

Specific:

1. (ENG) Disseny de voladures a cel obert i d'interior. Voladures de precaució.
2. (ENG) Capacitat per interpretar els resultats i realitzar modificacions per aconseguir els objectius previstos.

Transversal:

3. 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.
4. 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.
5. 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.
6. 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

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: 30h Theory classes: 6h Laboratory classes: 4h Self study : 20h
Description: content english	
title english	Learning time: 14h Theory classes: 4h Laboratory classes: 2h Self study : 8h
Description: content english	
title english	Learning time: 49h Theory classes: 16h Laboratory classes: 7h Self study : 26h
Description: content english	
title english	Learning time: 30h Theory classes: 10h Self study : 20h
Description: content english	
title english	Learning time: 27h Theory classes: 9h Laboratory classes: 2h Self study : 16h
Description: content english	

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Planning of activities

name english	Hours: 3h Self study: 1h Theory classes: 2h
name english	Hours: 3h Self study: 1h Laboratory classes: 2h
name english	Hours: 9h Self study: 2h Theory classes: 7h

Bibliography

Basic:

Gustafsson, Rune. Técnica sueca de voladuras. Suecia: SPI, Nova, 1977.

López Jimeno, Carlos; López Jimeno, Emilio; García Bermúdez, Pilar. Manual de perforación y voladura de rocas. Madrid: Carlos López Jimeno, 2003. ISBN 8496140032.

Langefors, U.; Kihlström, B. Técnica moderna de voladura de rocas. 2ª ed. Bilbao: Urmo, 1987. ISBN 8431404701.

Complementary:

Bauer, A.; Crosby, W. A. "Blasting". Kennedy, Bruce A., ed. Surface mining. Littleton: Society for Mining, Metallurgy, and Exploration, 1990. p. 540-564.

Konya, Calvin J.; Walter, Edward J. Surface blast design. Englewood Cliffs, N.J.: Prentice-Hall, cop. 1990. ISBN 0138779945.

Ash, R. L. "Design of blasting rounds". Kennedy, Bruce A., ed. Surface mining. Littleton: Society for Mining, Metallurgy, and Exploration, 1990. p. 565-583.

Manuales técnicos [on line]. Madrid: MAXAM, 2018- [Consultation: 14/03/2018]. Available on: <<http://www.maxam.net>>.

Menéndez Arias, Juan Bautista. Detonadores y explosivos: su aplicación en las explotaciones mineras y en la obra pública. Manresa: EUPM. EMRN, 2000. ISBN 8488894678.

Muñoz García, Javier, col. Guía de buenas prácticas en el diseño y ejecución de voladuras en banco [on line]. Madrid: Ministerio de Energía, Turismo y Agenda Digital, 2015 [Consultation: 18/06/2019]. Available on: <<https://docplayer.es/59183803-Guia-de-buenas-practicas-en-el-diseno-y-ejecucion-de-voladuras-en-banco.html>>.