Course guide
330427 - MIS - Underground Mining

Last modified: 04/05/2023

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

Degree: BACHELOR'S DEGREE IN MINING ENGINEERING (Syllabus 2016). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 7.5 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Sanmiquel Pera, Lluis

Others: Bascompta Massanès, Marc
Calvo Torralba, Daniel

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. (ENG) Extracció de matèries primeres d'origen mineral.
2. (ENG) Disseny, planificació i direcció d'explotacions mineres.
3. (ENG) Maquinària minera en explotacions subterrànies.
4. (ENG) Activitats i elements auxiliars.

Transversal:
5. 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.
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.
7. 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.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

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STUDY LOAD

Type	Hours	Percentage
Hours medium group	75,0	40.00
Self study	112,5	60.00

Total learning time: 187.5 h

CONTENTS

title english

Description:
content english

Full-or-part-time: 4h
Theory classes: 2h
Self study : 2h

title english

Description:
content english

Full-or-part-time: 20h
Theory classes: 8h
Practical classes: 2h
Self study : 10h

title english

Description:
Description of the main underground mining methods: room and pillar, longwall, shrinkage, sublevel stoping, cut-and-fill, sublevel caving, block and panel caving.

Full-or-part-time: 20h
Theory classes: 12h
Self study : 8h

title english

Description:
content english

Full-or-part-time: 30h
Theory classes: 10h
Laboratory classes: 5h
Self study : 15h

title english

Description:
content english

Full-or-part-time: 15h
Theory classes: 7h
Self study : 8h

title english

Description:
content english

Full-or-part-time: 16h
Theory classes: 9h
Practical classes: 2h
Self study : 5h

title english

Description:
content english

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

title english

Description:
content english

Full-or-part-time: 15h
Theory classes: 10h
Self study : 5h

ACTIVITIES

name english

Full-or-part-time: 10h
Practical classes: 2h
Self study: 8h

name english

Full-or-part-time: 10h
Practical classes: 2h
Self study: 8h

name english

Full-or-part-time: 15h
Practical classes: 5h
Self study: 10h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:
- 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.
- Hustrulid, William A., ed. Underground mining methods: engineering fundamentals and international case studies. Littleton, Colorado: Society for Mining, Metallurgy and Exploration, cop. 2001. ISBN 0873351932.
- Gertsch Richard E.; Bullock Richard L., eds. Techniques in underground mining: selections from underground mining methods handbook. Littleton: Society for Mining, Metallurgy and Exploration, cop. 1998. ISBN 0873351630.
- Hoek, Evert; Brown, Edwin T. Underground excavations in rock. Revised. London: Institution of Mining and Metallurgy, 1990. ISBN 0419160302.
- De la Vergne, Jack. Hard rock miner's handbook [on line]. 5th ed. Edmonton: Stantec Consulting, cop. 2008 [Consultation: 17/12/2020]. Available on: http://www.stantec.com/content/dam/stantec/files/PDFAssets/2014/Hard%20Rock%20Miner%27s%20Handbook%20Edition%205_3.pdf. ISBN 0968700616.
- Atlas Copco. Underground Mining: A global review of methods and practices. 2014.

Complementary:
- Lopez Jimeno, C, ed. Ingeniería del terreno: ingeoter. Madrid: U.D. Proyectos, 2002-2010. ISBN 8496140121.
- López Jimeno, C., et al. Ingeo túneles. Madrid: Carlos López Jimeno, 1998-2009. ISBN 849614013X.
- Serrano J. M., ed. Tunnels and water: water and its influence on the design, construction, and exploitation of tunnels and undergrounds works = Los túneles y el agua = Les tunnels et l'eau. Rotterdam [etc.]: A.A. Balkema, 1988-1989. ISBN 9061918219.
- Bustillo Revuelta, Manuel; López Jimeno, Carlos. Manual de evaluación y diseño de explotaciones mineras. Madrid: Entorno Gráfico, 1997. ISBN 8492170824.
- Díaz Aguado, María B. Carga, transporte y extracción en minería subterránea. Oviedo: Septem, 2006. ISBN 8496491458.
- Arteaga Rodríguez, Ricardo; Azcarate Martín, Enrique. Manual de evaluación técnico-económica de proyectos mineros de inversión. Madrid: ITGE, DL 1991. ISBN 847840077X.