

Course guide

330420 - ESC - Electricity and Control Engineering

Last modified: 25/04/2024

Unit in charge: Manresa School of Engineering
Teaching unit: 709 - DEE - Department of Electrical Engineering.

Degree: BACHELOR'S DEGREE IN MINING ENGINEERING (Syllabus 2016). (Compulsory subject).
BACHELOR'S DEGREE IN MINERAL RESOURCE ENGINEERING AND MINERAL RECYCLING (Syllabus 2021). (Compulsory subject).

Academic year: 2024 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: Freijo Alvarez, Modesto

Others: Freijo Alvarez, Modesto

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. (ENG) Coneixements fonamentals sobre el sistema elèctric de potència: generació d'energia, xarxa de transport, repartiment i distribució, així com sobre tipus de línies i conductors. Coneixement de la normativa sobre baixa i alta tensió. Coneixement d'electrònica bàsica i sistemes de control.

Transversal:

2. 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.
3. 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.
4. 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

STUDY LOAD

Type	Hours	Percentage
Hours medium group	60,0	40.00
Self study	90,0	60.00

Total learning time: 150 h



CONTENTS

title english

Description:

content english

Full-or-part-time: 45h

Theory classes: 12h

Self study : 33h

title english

Description:

content english

Full-or-part-time: 30h

Theory classes: 8h

Self study : 22h

title english

Description:

content english

Full-or-part-time: 23h

Theory classes: 6h

Self study : 17h

title english

Description:

content english

Full-or-part-time: 36h

Theory classes: 12h

Self study : 24h

title english

Description:

content english

Full-or-part-time: 16h

Theory classes: 7h

Self study : 9h



title english

Description:

content english

Full-or-part-time: 9h

Theory classes: 3h

Self study : 6h

ACTIVITIES

name english

Full-or-part-time: 4h

Laboratory classes: 2h

Self study: 2h

name english

Full-or-part-time: 6h

Laboratory classes: 2h

Self study: 4h

name english

Full-or-part-time: 6h

Laboratory classes: 2h

Self study: 4h

name english

Full-or-part-time: 6h

Laboratory classes: 2h

Self study: 4h

name english

Full-or-part-time: 6h

Laboratory classes: 2h

Self study: 4h

name english

Full-or-part-time: 6h

Laboratory classes: 2h

Self study: 4h



name english

Full-or-part-time: 7h
Laboratory classes: 3h
Self study: 4h

name english

Full-or-part-time: 22h
Theory classes: 2h
Self study: 20h

name english

Full-or-part-time: 22h
Theory classes: 2h
Self study: 20h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Fraile Mora, Jesús. Máquinas eléctricas. 8ª ed. Madrid: Ibergaceta, 2016. ISBN 9788416228669.

Complementary:

- Chapman, Stephen J. Máquinas eléctricas [on line]. 5ª ed. México: McGraw-Hill, 2012 [Consultation: 03/06/2022]. Available on: https://www-ingebook-com.recursos.biblioteca.upc.edu/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=4297. ISBN 9786071507242.
- Moreno, Narciso. Problemas resueltos de tecnología eléctrica. Madrid: International Thomson, 2003. ISBN 8497321944.
- Freijo, Modesto. Problemas de electrotecnia aplicada. Manresa: EPSEM, 2014.
- Alcalde San Miguel, Pablo. Electrotecnia: instalaciones eléctricas y automáticas. 6ª ed. Madrid: Paraninfo, 2014. ISBN 9788428398770.
- Sanjurjo Navarro, Rafael. Máquinas eléctricas [on line]. Edición estudiante (EEES). Madrid: García-Maroto Editores, 2011 [Consultation: 02/06/2022]. Available on: https://www-ingebook-com.recursos.biblioteca.upc.edu/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=193. ISBN 9788415214182.