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).
BACHELOR'S DEGREE IN ENVIRONMENTAL ENGINEERING / BACHELOR'S DEGREE IN MINERAL RESOURCE ENGINEERING AND MINERAL RECYCLING (Syllabus 2024). (Compulsory subject).
BACHELOR'S DEGREE IN MINERAL RESOURCE ENGINEERING AND MINERAL RECYCLING / BACHELOR'S DEGREE IN ENVIRONMENTAL ENGINEERING (Syllabus 2024). (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

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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
Self study: 4h
Laboratory classes: 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
Self study: 4h
Laboratory classes: 2h

name english

Full-or-part-time: 6h
Self study: 4h
Laboratory classes: 2h

name english

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

name english

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

name english

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

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.