Course guide
330532 - SE - Electric Systems

Last modified: 04/05/2023

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

Degree: BACHELOR'S DEGREE IN AUTOMOTIVE ENGINEERING (Syllabus 2017). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 6.0 **Languages:** Catalan, English

LECTURER

Coordinating lecturer: Bergas Jane, Joan Gabriel

Others: Professors del DEE

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CE9. Knowledge and use of the principles of theory of circuits and electrical machines and capacity for the design of electrical systems in the automotive industry.

Generical:
CG1. Ability to write and develop projects in the field of automotive engineering for the construction, renovation, repair, maintenance, recycling, manufacture, installation, assembly or operation of: structures, mechanical equipment, energy installations, electrical and electronic installations, plants and industrial plants and manufacturing and automation processes.
CG2. Capacity for management of the activities that are the subject of the engineering projects described in the previous section.
CG3. Knowledge of basic and technological subjects that will enable students to learn new methods and theories and that will endow them with the versatility needed to adapt to new situations.
CG4. Ability to solve problems with initiative, decision-making, creativity, critical reasoning and to communicate and transmit knowledge, skills and skills in the field of automotive engineering.
CG10. The ability to work in a multilingual and multidisciplinary environment.

Transversal:
1. 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.
2. 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.
3. EFFECTIVE USE OF INFORMATI0N RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.
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.
5. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

Basic:
CB3. That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical issues.
CB4. Students can transmit information, ideas, problems and solutions to a specialized and non-specialized audience.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

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STUDY LOAD

Type	Hours	Percentage
Hours large group	30,0	20.00
Hours small group	30,0	20.00
Self study	90,0	60.00

Total learning time: 150 h

CONTENTS

title english

Description:
content english

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

title english

Description:
content english

Full-or-part-time: 23h
Theory classes: 6h
Laboratory classes: 2h
Self study : 15h

title english

Description:
content english

Full-or-part-time: 23h
Theory classes: 4h
Laboratory classes: 4h
Self study : 15h

title english

Description:
content english

Full-or-part-time: 23h
Theory classes: 4h
Laboratory classes: 4h
Self study : 15h

title english

Description:
content english

Full-or-part-time: 18h
Theory classes: 8h
Self study : 10h

title english

Description:
content english

Full-or-part-time: 25h
Theory classes: 8h
Laboratory classes: 2h
Self study : 15h

title english

Description:
content english

Full-or-part-time: 16h
Theory classes: 6h
Self study : 10h

ACTIVITIES

name english

Full-or-part-time: 16h
Laboratory classes: 15h
Self study: 1h

name english

Full-or-part-time: 1h
Theory classes: 1h

name english

Full-or-part-time: 1h
Theory classes: 1h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Hayt, William Hart; Kemmerly, Jack E; Durbin, Steven M. Análisis de circuitos en ingeniería [on line]. 9ª ed. México D.F.: McGraw Hill, 2019 [Consultation: 27/05/2022]. Available on: https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?docID=5808946. ISBN 9781456272135.

Complementary:

- Denton, Tom. Automobile electrical and electronic systems [on line]. 5th ed. Milton Park, Abingdon, Oxon: Routledge, 2017 [Consultation: 27/05/2022]. Available on: https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?docID=1244526. ISBN 9780415725774.