



Course guide

330540 - SP - Propulsion Systems

Last modified: 04/05/2023

Unit in charge: Manresa School of Engineering
Teaching unit: 709 - DEE - Department of Electrical Engineering.
750 - EMIT - Department of Mining, Industrial and ICT Engineering.

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

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

LECTURER

Coordinating lecturer: Bergas Jané, Joan Gabriel

Others: Felipe Blanch, Jose Juan De

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.

Transversal:

03 TLG. 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.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

1. Apply correctly the fundamental concepts of electric propulsion.
2. Apply correctly the fundamental concepts of hybrid propulsion.
3. Apply correctly the basic concepts of propulsion using hydrogen batteries



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: 10h

Theory classes: 8h

Laboratory classes: 2h

title english

Description:

content english

Full-or-part-time: 10h

Theory classes: 8h

Laboratory classes: 2h

title english

Description:

content english

Full-or-part-time: 14h

Theory classes: 10h

Laboratory classes: 4h

title english

Description:

content english

Full-or-part-time: 12h

Theory classes: 10h

Laboratory classes: 2h



title english

Description:

content english

Full-or-part-time: 12h

Theory classes: 9h

Laboratory classes: 3h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Corbo, Pasquale; Migliardini, Fortunato; Veneri, Ottorino. Hydrogen fuel cells for road vehicles [on line]. London: Springer London, 2011 [Consultation: 02/09/2020]. Available on: <http://dx.doi.org/10.1007/978-0-85729-136-3>. ISBN 9780857291363.
- Bose, Bimal K. Power electronics and motor drives : advances and trends [on line]. San Diego, CA: Academic Press, 2006 [Consultation: 27/05/2022]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?docID=270068>. ISBN 9780120884056.