Course guide
330146 - CAI - Industrial Construction and Architecture

Last modified: 04/05/2023

Unit in charge: Manresa School of Engineering
Teaching unit: 717 - DEGD - Department of Engineering Graphics and Design.

Degree: BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).

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

LECTURER

Coordinating lecturer: Villar Ribera, Alberto

Others:

PRIOR SKILLS

To take the subject it is essential to have taken "Theory of industrial structures and constructions", a compulsory subject in semester 3B. In addition, it is highly advisable to have basic notions about a CAD program to be able to carry out the practices and the course project.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. Knowledge and skills to apply graphic engineering techniques.
2. Knowledge and ability for the design of industrial structures and constructions.
3. Ability to write, sign and develop projects in the field of industrial engineering aimed at:
construction, renovation, repair, maintenance, demolition, manufacture, installation, assembly or operation of: structures, equipment mechanical, energy installations, electrical and electronic installations, industrial installations and plants and manufacturing and automation
4. Ability to solve problems with initiative, decision making, creativity, critical reasoning and to communicate and transmit knowledge, skills and abilities in the field of industrial engineering.
5. Ability to manage specifications, regulations and mandatory rules.
6. Knowledge, understanding and ability to apply the necessary legislation in the exercise of the profession of industrial technical engineer.

Transversal:
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.
8. 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.
9. ENTREPRENEURSHIP AND INNOVATION - Level 3. Using knowledge and strategic skills to set up and manage projects. Applying systemic solutions to complex problems. Devising and managing innovation in organizations.
10. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 3. Taking social, economic and environmental factors into account in the application of solutions. Undertaking projects that tie in with human development and sustainability.
11. 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.
12. EFFECTIVE USE OF INFORMATION 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.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

.

STUDY LOAD

Type	Hours	Percentage
Self study	90,0	60.00
Hours small group	15,0	10.00
Hours large group	45,0	30.00

Total learning time: 150 h

CONTENTS

title english

Description:
content english

Full-or-part-time: 8h
Theory classes: 4h
Self study : 4h

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: 8h
Theory classes: 4h
Self study : 4h

title english

Description:
content english

Full-or-part-time: 8h
Theory classes: 4h
Self study : 4h

title english

Description:
content english

Full-or-part-time: 12h
Theory classes: 6h
Self study : 6h

title english

Description:
content english

Full-or-part-time: 12h
Theory classes: 6h
Self study : 6h

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: 4h
Theory classes: 2h
Self study : 2h

ACTIVITIES

name english

Full-or-part-time: 12h
Laboratory classes: 4h
Self study: 8h

name english

Full-or-part-time: 18h
Laboratory classes: 6h
Self study: 12h

name english

Full-or-part-time: 12h
Laboratory classes: 4h
Self study: 8h

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: 9h
Laboratory classes: 3h
Self study: 6h

name english

Full-or-part-time: 12h
Laboratory classes: 4h
Self study: 8h

name english

Full-or-part-time: 9h
Laboratory classes: 3h
Self study: 6h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:
- Ackerman, Kurt. Building for industry. London: Watermark, 1991. ISBN 1873200192.
- Neufert, E. Arte de proyectar en arquitectura. 16a ed. Barcelona: Gustavo Gili, 2013. ISBN 9788425224744.

Complementary:
- Calavera, J. Proyecto y cálculo de estructuras de hormigón armado para edificios. 2a ed. Madrid: INTEMAC, 1984-1985. ISBN 8439840039.
- Calavera, J. Manual de detalles constructivos en obras de hormigón armado. Vizcaya: INTEMAC, 1993. ISBN 8488764006.

RESOURCES

Other resources:
CTE. Technical Building Code (RD 314/2006). Madrid: Ministry of Housing.
Eurocode 1: Basis of structural design (EN 1990).
Eurocode 2: Design of concrete structures (EN 1991).
Eurocode 3: Design of steel structures (EN 1992).
Eurocode 5: Design of wooden structures (EN 1995).
Eurocode 7: Geotechnical design (EN 1997).
REBT. Low voltage electrotechnical regulation (RD 842/2002). Madrid: Ministeri d'Indústria, Turisme i Comerç.
RITE. Regulation of Thermal Installations in Buildings (RD 1027/2007). Madrid: Ministeri of the Presidency.
RSCIEI. Fire Safety Regulation in Industrial Establishments (RD 2267/2004). Madrid: Ministeri d'Indústria, Turisme i Comerç.