Course guide
295916 - EPE - Professional Tools for Engineering

Last modified: 10/07/2026

Unit in charge: Barcelona East School of Engineering
Teaching unit: 702 - CEM - Department of Materials Science and Engineering.
737 - RMEE - Department of Strength of Materials and Structural Engineering.

Degree: BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN MATERIALS ENGINEERING (Syllabus 2010). (Optional subject).

Academic year: 2026 **ECTS Credits:** 6.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Jordi Llumà i Sebastián Tornil

Others: Jordi Llumà i Sebastián Tornil

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

prepare students for the professional practice of engineering through practical workshops taught by companies and entities in the sector.

STUDY LOAD

Type	Hours	Percentage
Hours large group	30,0	16.95
Hours small group	12,0	6.78
Guided activities	15,0	8.47
Self study	120,0	67.80

Total learning time: 177 h

CONTENTS

Workshop 1. Ideation Engineering

Description:
content english

Full-or-part-time: 2h
Theory classes: 2h

title english

Description:
content english

Full-or-part-time: 2h
Theory classes: 2h

title english

Description:
content english

Full-or-part-time: 2h
Theory classes: 2h

title english

Description:
content english

Full-or-part-time: 2h
Theory classes: 2h

title english

Description:
content english

Full-or-part-time: 2h
Theory classes: 2h

title english

Description:
content english

Full-or-part-time: 2h
Theory classes: 2h

title english

Description:
content english

Full-or-part-time: 2h
Theory classes: 2h

title english

Description:
content english

Full-or-part-time: 2h
Theory classes: 2h

title english

Description:
content english

Full-or-part-time: 2h
Theory classes: 2h

Itinerary 1. T11: mechanical workshop (Reserved for associations)

Description:
Scope: Machining
Methodology:
• Practical training on lathe.
• Practical training on milling.

Full-or-part-time: 32h
Laboratory classes: 32h

Itinerary 2. T12: Mecalux: Structural calculation with dynamic loads.

Description:
Scope: Resolution of the challenge posed by the company
• 2 hours of explanation of the challenge
• 28 hours of supervised independent work
• 2 hours for presentations

Specific objectives:
Development of a challenge proposed by the company

Full-or-part-time: 32h
Theory classes: 32h

Route 3. T13 Schneider: Design a modular Data Center infrastructure solution for AI applications.

Description:
Scope: Resolution of the challenge posed by the company
• 2 hours of explanation of the challenge
• 28 hours of supervised independent work
• 2 hours for presentations

Full-or-part-time: 32h
Laboratory classes: 32h

Itinerary 4. T14 Tavil: Design of a device for turning packages at high speed.

Description:
Scope: Resolution of the challenge posed by the company
• 2 hours of explanation of the challenge
• 28 hours of supervised independent work
• 2 hours for presentations

Full-or-part-time: 22h
Laboratory classes: 22h

GRADING SYSTEM

Any academic fraud, plagiarism or use or possession of unauthorised means in an assessment activity leads to a mark of zero (0) for the affected test or assignment. Furthermore, in accordance with the University's regulations, if disciplinary proceedings are initiated the subject is recorded as "Pending Assessment" until a decision is reached. These incidents are managed in accordance with the **Action Framework for Academic Integrity in Assessment at the UPC**.