

Course guide

2400212 - 240MEI65 - Energy Use and Management

Last modified: 10/07/2025

Unit in charge: Barcelona School of Industrial Engineering
Teaching unit: **Degree:** MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2025). (Optional subject).
Academic year: 2025 **ECTS Credits:** 10.0 **Languages:** Catalan, Spanish, English

LECTURER

Coordinating lecturer: Xavier Fernandez Francos

Others:

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

SEN1.1.1 Size equipment and installations for heat and steam generation with efficiency and sustainability criteria.

SEN1.1.2 Size HVAC and refrigeration equipment and installations with efficiency and sustainability criteria.

SEN1.1.3 Design heating and cooling networks with efficiency and sustainability criteria.

SEN1.1.4 Design energy systems and installations with a gender perspective.

SEN1.2.1 Analyze the fundamental operating principles and practical applications of heat and work generation using bioenergy.

SEN1.2.2 Analyze the fundamental principles and practical applications of hydrogen use.

SEN1.3.1 Improve energy use efficiency at both domestic and industrial levels by employing applied thermodynamics, thermo-economics, auditing techniques, and energy certification regulations.

SEN1.3.2 Manage energy consumption systems and installations using data science.

SEN1.3.3 Manage energy systems and installations with a gender perspective.

CONTENTS

title english

Description:

content english

Full-or-part-time: 250h

Practical classes: 60h

Laboratory classes: 30h

Self study : 160h

ACTIVITIES

name english

Full-or-part-time: 2h

Self study: 2h



name english

Full-or-part-time: 33h

Self study: 21h

Practical classes: 9h

Laboratory classes: 3h

name english

Full-or-part-time: 58h

Self study: 37h

Practical classes: 18h

Laboratory classes: 3h

name english

Full-or-part-time: 33h

Self study: 21h

Practical classes: 9h

Laboratory classes: 3h

name english

Full-or-part-time: 8h

Self study: 5h

Laboratory classes: 3h

name english

Full-or-part-time: 8h

Self study: 5h

Laboratory classes: 3h

name english

Full-or-part-time: 33h

Self study: 21h

Practical classes: 9h

Laboratory classes: 3h

name english

Full-or-part-time: 8h

Self study: 5h

Laboratory classes: 3h



name english

Full-or-part-time: 8h

Self study: 5h

Laboratory classes: 3h

name english

Full-or-part-time: 17h

Self study: 11h

Practical classes: 3h

Laboratory classes: 3h

name english

Full-or-part-time: 25h

Self study: 16h

Practical classes: 6h

Laboratory classes: 3h

name english

Full-or-part-time: 17h

Self study: 11h

Practical classes: 6h

GRADING SYSTEM
