

## Course guide

### 220576 - 220576 - Electrical Technology

Last modified: 19/04/2023

**Unit in charge:** Terrassa School of Industrial, Aerospace and Audiovisual Engineering  
**Teaching unit:** 709 - DEE - Department of Electrical Engineering.

**Degree:** MASTER'S DEGREE IN MANAGEMENT ENGINEERING (Syllabus 2012). (Optional subject).

**Academic year:** 2023    **ECTS Credits:** 3.0    **Languages:** Catalan, Spanish

#### LECTURER

**Coordinating lecturer:** RAMON MARIA MUJAL ROSAS

**Others:**

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

##### Generical:

1. Ability to apply knowledge to solve problems in new environments or unfamiliar environments within broader contexts (or multidisciplinary) related to engineering.
2. Self-learning capacity to independent continuous training.
3. Ability to effectively communicate their findings, knowledge and concluding reasons to skilled and unskilled audiences, clearly and unambiguously.
4. Ability to integrate knowledge and formulate judgments with the aim of making decisions based on information that, with incomplete or limited include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
5. Ability to understand the impact of engineering solutions in a global and social context .
6. Ability to operate and lead multidisciplinary and multicultural groups, with negotiation skills, group work, relationships in an international setting, and conflict resolution.

#### TEACHING METHODOLOGY

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#### LEARNING OBJECTIVES OF THE SUBJECT

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#### STUDY LOAD

Type	Hours	Percentage
Hours large group	8,0	10.67
Guided activities	16,0	21.33
Self study	48,0	64.00
Hours medium group	3,0	4.00

**Total learning time:** 75 h

## CONTENTS

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### (ENG) Mòdul 1: Intro

**Full-or-part-time:** 7h

Theory classes: 2h

Self study : 5h

### (ENG) Mòdul 2: Fi

**Full-or-part-time:** 15h

Theory classes: 6h

Self study : 9h

### (ENG) -

**Full-or-part-time:** 17h

Theory classes: 5h

Guided activities: 2h

Self study : 10h

### (ENG) Mòdul 4: Funcionament Econòmic dels Sistemes Elèctrics

**Full-or-part-time:** 18h

Theory classes: 6h

Self study : 12h

### (ENG) Mòdul 5: El Mercat Elèctric

**Full-or-part-time:** 18h

Theory classes: 5h

Guided activities: 1h

Self study : 12h

## ACTIVITIES

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### (ENG) PREPARACIÓ PRÈVIA I POSTERIOR DE LES SESSIONS DE TEORIA I ASSISTÈNCIA A AQUESTES.

**Full-or-part-time:** 36h

Theory classes: 21h

Self study: 15h

### (ENG) SESSIONS D'ACTIVITAT DIRIGIDES

**Full-or-part-time:** 13h

Guided activities: 3h

Self study: 10h



#### (ENG) ACTIVITAT 3: EXAMEN PARCIAL

**Full-or-part-time:** 11h

Theory classes: 1h

Self study: 10h

#### (ENG) ACTIVITAT 4: EXERCICI DEL FUNCIONAMENT ECONÒMIC DE SISTEMES ELÈCTRICS

**Full-or-part-time:** 2h

Self study: 2h

#### (ENG) ACTIVITAT 5: EXERCICI DEL MERCAT ELÈCTRIC

**Full-or-part-time:** 1h

Self study: 1h

#### (ENG) ACTIVITAT 6: EXAMEN FINAL

**Full-or-part-time:** 12h

Theory classes: 2h

Self study: 10h

#### EXTRAORDINARY COURSE EXAMINATION

**Description:**

There will be a test of 1h of duration in which the student must demonstrate that he has reached the level required to recover this subject. For this will be a written test that will be of shorter duration than the examination to which it recovers and of much more basic contents

This basic test will only allow to pass the subject, that is to say, the maximum grade will be of 5.

Only students who do not have the subject approved can be presented to this test.

**Specific objectives:**

With this test the student is given the last opportunity to reach the minimum requirements to pass the subject, which would be more basic than in the normal exam, but the maximum grade will also be simply passed (5) or suspended. It is not possible to obtain more note by means of this test than it has been indicated is of minimum contained.

**Material:**

The material used will be the typical of a written test. Writing material, paper, form and calculator

**Delivery:**

The written test will be delivered on the same day and at the time of the test, corrected as soon as possible to have a reference note

**Full-or-part-time:** 1h

Theory classes: 1h

## GRADING SYSTEM

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## EXAMINATION RULES.

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## BIBLIOGRAPHY

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### Basic:

- Muijal Rosas, Ramón M<sup>a</sup>. Tecnología eléctrica [on line]. 2a ed. Barcelona: Edicions UPC, 2003 [Consultation: 18/09/2020]. Available on: <http://hdl.handle.net/2099.3/36264>. ISBN 8483017164.

### Complementary:

- Merino Azcárraga, José María. Eficiencia energética eléctrica, vol. 3, Transporte y distribución de la electricidad. Terrassa, 2003. ISBN 8431404809.
- Muijal Rosas, Ramón M<sup>a</sup>. Cálculo de líneas y redes eléctricas [on line]. Barcelona: Edicions UPC, 2002 [Consultation: 29/06/2020]. Available on: <http://hdl.handle.net/2099.3/36744>. ISBN 8483016060.
- Montané Sangrà, Paulino. Protecciones en las instalaciones eléctricas: evolución y perspectivas. 2a ed. Barcelona: Marcombo Boixareu, 1990. ISBN 8426706886.

## RESOURCES

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### Audiovisual material:

- Apunts diversos