

## Course guide

### 220252 - 220252 - Control of Electrical Machines

**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 INDUSTRIAL ENGINEERING (Syllabus 2013). (Optional subject).

**Academic year:** 2023    **ECTS Credits:** 5.0    **Languages:** Catalan, Spanish, English

#### LECTURER

**Coordinating lecturer:** Antoni Garcia Espinosa

**Others:** Jaume Saura Perisé

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

##### Specific:

1. Capability for modeling, analysis, calculation and design of electrical power systems.
3. Ability to project conventional and non-conventionals power facilities.
6. Ability to model and solve problems associated with the operation of electric power systems by integrating information technologies and communication: protection, network operation, and electricity market stability.

#### TEACHING METHODOLOGY

Lectures and laboratori sessions

#### LEARNING OBJECTIVES OF THE SUBJECT

To study the vector control schemes as well as Direct Torque Control schemes

#### STUDY LOAD

| Type              | Hours | Percentage |
|-------------------|-------|------------|
| Hours small group | 15,0  | 12.00      |
| Hours large group | 30,0  | 24.00      |
| Self study        | 80,0  | 64.00      |

**Total learning time:** 125 h

#### CONTENTS

##### Vector control of Induction Motor and Permanent Magnet Synchronous Machines.

**Full-or-part-time:** 125h

Theory classes: 30h

Laboratory classes: 15h

Self study : 80h



## GRADING SYSTEM

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First exam\*0.3+Final exam\*0.5+laboratori \*0.2

## EXAMINATION RULES.

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In case to fail the first exam, the obtained mark could be improved

## BIBLIOGRAPHY

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### Basic:

- Mohan, Ned. Advanced electric drives: analysis, control and modeling using simulink. Minneapolis: MNPARE, cop. 2001. ISBN 0971529205.