

29629 - Electric motor drives

Syllabus Information

Academic Year: 2019/20

Subject: 29629 - Electric motor drives

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 430 - Bachelor's Degree in Electrical Engineering

ECTS: 6.0

Year: 3

Semester: Second semester

Subject Type: Compulsory

Module: ---

1.General information

1.1.Aims of the course

The main goal of the course is that the student is able to select and control the most suitable electric drive for an specific industrial application. Both the classic and the latest control techniques are studied; Emphasizing, above all, the practical aspects

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

Evaluation:

1) Exam (70%)

2) Lab test (10%)

3) Other activities (20%)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

4.2.Learning tasks

4.3.Syllabus

The course will address the following topics:

- 1. General aspects of industrial drives
 - 1.1. Optimal selection
 - 1.2. Overview of power electronics devices used in industrial drives
- 2. Industrial drives for DC machines
 - 2.1. AC/DC converter
 - 2.2. DC/DC converter
 - 2.3. DC brushless drives
- 3. Industrial drives for AC induction machines with squirrel cage
 - 3.1. Soft starter
 - 3.2. AC/DC/AC converters with DC link
 - 3.3. AC/AC converters
 - 3.4. Vector Control
- 4. Industrial drives for AC induction machines with double fed

4.4.Course planning and calendar

4.5.Bibliography and recommended resources