

Academic
Year 11/12**SEL025****WIND POWER**

Department: 709 Electrical Engineering

Coordinator: Oriol Gomis

Typology: Block 1. Engineering Courses

Language: English

ECTS: 3

Offered in other degrees:
Industrial Engineering (separate groups)Year 1. Semester 1
Spring Semester**OBJECTIVES**

The course aims to give students the basis for understanding the electrical and control aspects of wind turbines. The fundamental concepts of wind generation will be introduced. Topics about modeling, simulation and control of various technologies of electric generators used in wind turbines and converters, needed to optimally manage these wind turbines, will be treated in the course.

COURSE DESCRIPTION

1. Wind energy. Basic principles and elements: wind, turbine, pitch, stall, multiplier.
2. Electrical machines used in wind generation: induction generator, doubly fed induction generators, synchronous generators.
3. Converters used for power generation.
4. Control of wind turbines.
5. Integration into the electricity grid.
6. Modeling and simulation of wind generation.

METHODOLOGY

The course is developed through theoretical learning sessions and practical sessions in computer rooms.

In the theory sessions, the teacher will introduce the fundamental concepts of the course, which will then be worked on practical sessions using simulation software applied to case studies using real data.

COURSE EVALUATION

Theoretical final exam and continuous evaluation of practical works.

FACULTY

Oriol Gomis

<http://directori.upc.edu/directori/dadesPersona.jsp?id=1004465>

Agustí Egea

<http://directori.upc.edu/directori/dadesPersona.jsp?id=1083811>**ADDITIONAL INFORMATION**