

Renewable Energy Projects

Academic Year: (2019 / 2020)

Review date: 07/05/2020 16:31:22

Department assigned to the subject: Electrical Engineering Department

Coordinating teacher: ALONSO-MARTINEZ DE LAS MORENAS, JAIME

Type: Compulsory ECTS Credits : 6.0

Year : 1 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

- Wind power generation systems

OBJECTIVES

- Acquire adequate knowledge of industrial management of projects and companies of renewable energies.
- Direct, plan and supervise multidisciplinary teams that design or execute renewable energy projects.
- Conduct research, development and innovation in products, processes and methods related to renewable energies.
- Carry out strategic planning and apply it to renewable energy systems.
- To manage technically and economically projects, facilities, plants, companies and technological centers related to renewable energies.
- Knowledge of regulations that directly affect the use of renewable energies worldwide, as well as their origin, validity and application.
- Knowledge of the criteria of quality of supply and ability to project and provide sufficient means to meet them.
- Knowledge about evaluation of wind resource
- Ability to evaluate the feasibility and manage projects and companies of renewable energies.

DESCRIPTION OF CONTENTS: PROGRAMME

- Overview: the wind farm project
- The Site pre-selection
- The characterization of wind resource: Fundamentals, measurements, analysis, modelling and production estimation
- The identification of project technical constraints
- The processing of the electrical connection
- The electrical configuration of the wind farm and its connection
- Development of project engineering
- The environmental processing
- The selection of technology. Procurement process
- Construction of wind farm
- Operation and Maintenance

LEARNING ACTIVITIES AND METHODOLOGY

The assessment method will consist of lectures and presentation by students of the proposed works.

The lectures are given by professionals, specialists in renewable plant project development.

In addition, students must complete a stage of a wind farm project and the results of this task must be presented and defended in class. In this way, it is intended to promote the student participation in the class and evaluate their ability to carry out a wind farm project.

ASSESSMENT SYSTEM

% end-of-term-examination/test: 35

% of continuous assessment (assignments, laboratory, practicals...): 65

The assesment system consists of a continuous evaluation based on the development of projects and a final exam with questions about the subject programme.

BASIC BIBLIOGRAPHY

- J.L.Rodríguez Amenedo, J.C. Burgos Díaz, S. Arnalte Gómez. Sistema Eólicos de producción de Energía Eléctrica, Rueda, 2003