

Smart grids management

Academic Year: (2022 / 2023)

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Department assigned to the subject: Electrical Engineering Department

Coordinating teacher: CASARRUBIOS GONZALEZ, JOSE ANTONIO

Type: Electives ECTS Credits : 6.0

Year : Semester : 2

OBJECTIVES

The aim of this course is to focus in the advanced operation of smart grids . To achieve this goal , students must acquire a body of knowledge , and capabilities.

- knowledge about smart grids , its application and development in the electricity networks of the future.
- knowledge about the mechanisms of energy storage management and integration of renewable energies.
- knowledge about the automatic meter reading in smart grids.
- knowledge about energy data management commonly used in smart grids .

DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction to Smart Grids.
2. Distributed energy resources: Distributed generation and storage systems.
3. Electric vehicles.
4. Demand management and consumer rol.
5. Smart metering at Smart Grids: Energy measurement by digital energy meters, big data, security and privacy
6. Smart Grids (National and International) implementation projects, Regulation and practical examples

LEARNING ACTIVITIES AND METHODOLOGY

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- knowledge about smart grids , its application and development in the electricity networks of the future.
- knowledge about the mechanisms of energy storage management and integration of renewable energies. ¿
- knowledge about automation and measurement technologies used in Smart Grids .
- knowledge about energy data management commonly used in smart grids .

ASSESSMENT SYSTEM

% end-of-term-examination/test:	0
% of continuous assessment (assignments, laboratory, practicals...):	100

The assessment system will be composed of assignments about smart grids projects and laboratory sessions

BASIC BIBLIOGRAPHY

- Antonio Colmenar Santos Generación distribuida, autoconsumo y redes inteligentes , UNED - Universidad Nacional de Educación a Distancia, 2015

- Grupo Interplataformasde Almacenamiento ALMACENAMIENTO: ESTADO DE LAS TECNOLOGÍAS,
SECRETARÍA TÉCNICA DE LA PLATAFORMA FUTURED.