

29632 - Electrical Power Stations

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	430 - Bachelor's Degree in Electrical Engineering
ECTS	6.0
Year	4
Semester	First semester
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

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

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The learning process that has been designed for this course is based on the following:

The teaching process will be developed in three main levels: classes of theory, problems and laboratory. In the theoretical classes there will be explained the electric power generation systems, illustrating with several examples of power plants. Practical applications will be developed in the classes of problems. Also, the student will put into practice the acquired knowledge in external practices.

5.2.Learning tasks

The program offered to students includes the following activities...
Theoretical classes and problems (45 hours).

They constitute the core teaching. The technique followed in these classes is primarily expository. The participation of the students through questions and comments will be encouraged.

Classes of problems will complement theoretical classes, since they are useful for the understanding of the matter and to instruct students in the design of real installations of generation.

Laboratory (15 hours).

These will serve to bring the student to the reality, and to apply the concepts explained in the theoretical lessons.

Some practices will be carried out in the laboratory, calculating, assembling, analyzing and checking operation; others consist of externships, visiting power plants.

Evaluation (3 hours).

The evaluation is a learning tool in order to the student checks the degree of understanding and assimilation that has reached.

Tutoring.

Direct attention to the student.

Works (non-presential hours).

Periodically exercises and cases will be proposed to the student. These will be available at <http://moodle.unizar.es>. This section also includes the preparation of additional activities and laboratory practices.

Individual study (67 hours).

The continuous work of the student will be encouraged.

5.3.Syllabus

- Description of electric power generation systems.
- Remote control, regulation and ancillary services.
- Electrical and electromechanical components.
- Operation of power generation systems.
- Electricity market. Tariffs.

5.4.Course planning and calendar

Calendar of sessions and presentations

The dates and times of the sessions (theoretical classes, practices, etc.) will be scheduled by the Center and published at the start of the course (<http://eina.unizar.es>).

Each teacher will inform about the hours of tutoring.

Other activities will be planned according to the number of students and will be announced in advance (<http://moodle.unizar.es>)

5.5.Bibliography and recommended resources

[BB: Bibliografía básica / BC: Bibliografía complementaria]

- [BB] Merino Azcárraga, José María. Eficiencia energética eléctrica. Tomo I, Introducción y auditoría energética eléctrica / José María Merino Azcárraga ; con la colaboración de, José Félix Miñambres Argüelles [Bilbao] : CADEM, 2000
- [BB] Ramírez Vázquez, José. Centrales eléctricas / José Ramírez Vázquez ; con la colaboración de Lorenzo Beltrán Vidal . - [5a. ed.] Barcelona : CEAC, 1982
- [BB] Ramírez Vázquez, José. Estaciones de transformación y distribución. Protección de sistemas eléctricos / José Ramírez Vázquez ; con la colaboración de Lorenzo Beltrán Vidal, José Luis Borniquel Baqué, Pedro Dagá Gelabert Barcelona : CEAC técnico electricidad, D.L. 2004



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- [BB] Santo Potess, E.. Centrales eléctricas / E. Santo Potess Barcelona: Gustavo Gili, D. L. 1971
- [BC] Montañés Espinosa, A. Instalaciones eléctricas de alta tensión / Montañés Espinosa, A., Santillán Lázaro, A. Paraninfo