

## 30023 - Electrical Power Systems

### Syllabus Information

**Academic Year:** 2020/21

**Subject:** 30023 - Electrical Power Systems

**Faculty / School:** 110 - Escuela de Ingeniería y Arquitectura

**Degree:** 436 - Bachelor's Degree in Industrial Engineering Technology

**ECTS:** 6.0

**Year:** 3

**Semester:** First semester

**Subject Type:** Compulsory

**Module:** ---

### 1.General information

#### 1.1.Aims of the course

#### 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)

### 4.Methodology, learning tasks, syllabus and resources

#### 4.1.Methodological overview

The course takes place in various aspects, mainly through classroom sessions (sessions/classes of theory-problems) and practical sessions of laboratory; it can also include other activities.

#### 4.2.Learning tasks

The classroom sessions contain fundamental concepts that are applied to practical exercises, which help to understand those concepts. Primarily the methodology consists of lectures.

The practical sessions contain laboratory experiments, including computer practices, where the analyzed practical situations are often more complex than those studied in the classroom sessions. It also can allow dealing with more extensive analysis.

Other evaluable activities can include written partial exams, problems to be solved, practical works or other activities.

#### 4.3.Syllabus

The contents of the classroom sessions are structured in the following sections:

I.- Main components of electric power systems.

II.- Electric power lines.

III.- Electric parameters of lines.

IV.- Steady-state analysis of electric lines.

V.- Power flows in electric power systems.

VI.- Faults in electric power systems. Transient stability.

The contents of practical sessions of laboratory, as well as other activities, will be related to the classroom sessions.

The practical sessions are structured in the following sections:

A.- sessions to study electric power lines (two sessions).

B.- session to study electric power systems in steady-state (one session).

C.- sessions to study electric power systems in transient states (two sessions).

#### **4.4.Course planning and calendar**

The course will be held in the weeks corresponding to the first semester of the academic year. During such a semester, the activities will be distributed as follows:

- 3 hours per week of classroom sessions.

- 5 practical sessions of the laboratory within the set of weeks scheduled for this kind of session by the academic center. Each session will have an approximate extension of three hours.

#### **4.5.Bibliography and recommended resources**

Link:

[http://biblos.unizar.es/br/br\\_citas.php?codigo=30023&year=2019](http://biblos.unizar.es/br/br_citas.php?codigo=30023&year=2019)