

29635 - Fundamentals of Electrical Engineering

Syllabus Information

Academic Year: 2020/21

Subject: 29635 - Fundamentals of Electrical Engineering

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 430 - Bachelor's Degree in Electrical Engineering

ECTS: 6.0

Year: 1

Semester: Second 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 learning process is based on:

The learning process is developed in three main levels: theoretical lectures, practical lectures and lab practices. Theoretical lectures are devoted to present the basis of Circuit Analysis, showing examples. Practical lectures are dedicated to show several type problems, so the student can analyze similar situations. The lab practices are taking place in small groups, so the student can implement the knowledge acquired in lectures.

4.2.Learning tasks

The course offered to the student includes these activities:

Lectures (30 On-site hours)

Basis and concepts of electrical circuit analysis are presented, showing real examples. Student participation is encouraged through small questions and discussions. The contents to develop are detailed in the program.

Practical lectures(15 On-site hours)

Type problems are presented, promoting student participation, and coordinated with the theoretical lectures. Some of these lectures can be intended for the assessment of learning activities.

Lab practices (15 On-site hours)

The student estimates, simulates, mounts and checks the operation of electrical circuits in the laboratory. The student has to prepare previously the script practice. Some of these hours can be intended for the assessment of learning activities.

Other evaluable activities

These activities consist of personal student work as well as On-site hours (included in previous sections).

Assessment (3 On-site hours)

Its main purpose is to obtain a mark, but it is also a learning tool, so the student can check his comprehension and assimilation level.

Tutorials

They are devoted to direct care to the student, to identify learning problems, to guide throughout the subject, to attend and solve exercises and assignments...

Supervised works (18 off-site hours).

The student has to analyze exercises and problems on his own or in groups. These hours include the preparation of lab practices and additional activities.

Personal study (70 off-site hours).

The continuous study is encouraged by a uniform distribution of learning activities throughout the semester.

4.3.Syllabus

CHAPTER 1: FUNDAMENTAL QUANTITIES AND CIRCUIT ELEMENTS

CHAPTER 2: CIRCUIT ANALYSIS METHODS. APPLICATION IN RESISTIVE NETWORKS

CHAPTER 3: STEADY STATE IN AC CIRCUITS

CHAPTER 4: MAGNETIC COUPLING BETWEEN COILS

CHAPTER 5: POWER IN AC CIRCUITS

4.4.Course planning and calendar

Scheduling of on-site lectures and presentation of assignments

Theoretical and practical lectures, as well as laboratory practices, are held according to the timetable set by the Faculty, and they are published before the start date of the course (<http://eina.unizar.es>).

The lecturer will report about his tutorial timetable.

Other activities will be planned according to the number of students and they will be announced with sufficient time. They will be available on <http://moodle.unizar.es>

4.5.Bibliography and recommended resources

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?id=8817&p=1>