

29614 - Electric Circuits: Analysis

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	2
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 designed for this course is as follows

The learning process will be developed in three levels: lectures, problem solving classes and laboratory sessions, including student participation in a growing level. Lectures will be used to teach Circuit Theory fundamentals providing a high number of practical examples. Students will be assigned with personal work to be completed and corrected in the problem solving classes. Finally, reduced groups will assist to the lab sessions where the students will have the possibility of applying acquired knowledge.

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5.2.Learning tasks

The course program, offered for helping the student to fulfill the foreseen results, includes the next activities...

Lectures (30 in-class hours).

Fundamental concepts of Circuit Theory will be presented to the students. They will be completed and explained with real examples. Student participation will be favoured with questions and short discussions.

Problem solving classes (15 in-class hours).

Problems will be assigned to the students for their solution. They will be aligned with the theoretical contents of the course. Student homework previous to in-class solving all the problems will be favoured.

Laboratory sessions (15 lab hours).

The student will design, simulate, mount and verify how the proposed circuits work in the lab. A guide will be provided for that, with a previous part consisting in some theoretical calculations that should be done as homework.

Other activities

Some other activities with a mix of in-class and homework could be assigned to the student.

Evaluation (3 in-class hours).

The evaluation is used not only for grading the students but also to provide them with some feedback of their progress in the course.

Tutorial sessions.

The students will meet with their teacher to have direct attention, detect learning problems, guiding, problems and homework supervision ...

Atención directa al estudiante, identificación de problemas de aprendizaje, orientación en la asignatura, atención a ejercicios y trabajos...

Homework (18 homework hours).

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Problems, exercises and practical cases will be presented to the students periodically for their solution. These could be downloaded from the course web page (<http://moodle2.unizar.es>). Lab sessions preparation and extraordinary activities are also included in this category.

Individual study (70 hours).

Students' continuous work will be favoured with a homogeneous distribution of the learning activities during the semester.

5.3.Syllabus

The course program is divided in four sections

- Sinusoidal steady-state power calculations
- Three-phase circuits
- Two port circuits
- Transients

5.4.Course planning and calendar

In class sessions schedule

Calendario de sesiones presenciales y presentación de trabajos

Lectures, problem solving sessions and laboratory sessions are scheduled following the timetable fixed by the faculty and published prior to the course beginning (<http://eina.unizar.es>)

Each teacher will inform about his or her tutoring timetable

Other activities will be planned taking into account the students' number and they will be published in advance. They will be published in the course webpage <http://moodle2.unizar.es>

5.5.Bibliography and recommended resources

[BB: Bibliografía básica / BC: Bibliografía complementaria]

- [BB] 1. Nilsson, James W.. Circuitos eléctricos / James W. Nilsson, Susan A. Riedel . - 7ª ed. Madrid : Pearson Educación, 2005
- [BB] 2. Circuitos eléctricos para la ingeniería / Antonio J. Conejo ... [et al.] Madrid [etc.] : McGraw-Hill, D.L. 2004
- [BC] 3. Teoría de circuitos / preparada por Valentín M. Parra Prieto ... [et al.] . - 7ª ed., 9ª reimp. Madrid : Universidad Nacional de Educación a Distancia, imp. 2002
- [BC] 4. Hayt, William Hart, jr.. Análisis de circuitos en ingeniería / William H. Hayt, Jr., Jack E. Kemmerly, Steven M. Durbín ; revisión técnica, Gloria Mata Hernández, Nathan Witemberg Wudka, Alejandro Vega Salinas . - 8ª ed. México [etc.] : McGraw Hill, cop. 2012

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- [BC] 5. Edminister, Joseph A.. Circuitos eléctricos / Joseph A. Edminister, Mahmood Nahvi ; traducción, Rafael Sanjurjo Navarro, Eduardo Lázaro Sánchez, Pablo de Miguel Rodríguez . - 3ª ed. Madrid [etc.] : McGraw-Hill, D.L. 2001

Listado de URL

- Hojas de problemas y guiones de prácticas [<http://moodle.unizar.es>]
- Recursos docentes especiales [<http://moodle.unizar.es>]
- Transparencias (apuntes) de la asignatura [<http://moodle.unizar.es>]