

Program	09TT- Engineering in Telecommunication Technologies and Services
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Course number and name	
Number	95000008
Name	Basic Circuit Analysis Introducción al Análisis de Circuitos
Semester	Y1-S1

Credits and contact hours	
ECTS Credits	4.5
Contact hours	45

Coordinator's name	José M ^a Gil Gil
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Specific course information
<p>Description of course content</p> <p>The subject constitutes a first course of circuit analysis, in which the basic concepts of circuits and the analysis techniques are introduced. This course provides the theoretical basis for other courses of circuit analysis and design.</p> <p>The main objective of this course is that the students must know identify the different subsystems or blocks within the circuit, underlying those that can be simplified by means of circuitual transformations depending of the objective of the analysis. Students must know how to obtain equivalent circuits and apply the systematic methods of analysis. From this knowledge, the students have to choice the best strategy of analysis for each problem.</p>
<p>List of topics to be covered</p> <p>I. BASIC CONCEPTS OF CIRCUITS II. ELEMENTARY CIRCUIT ANALYSIS III. ANALYSIS IN THE TIME DOMAIN IV. STEADY-STATE ANALYSIS V. MAGNETIC COUPLING AND TRANSFORMERS VI. POWER, ENERGY, AND RESONANCE</p>
<p>Prerequisites or co-requisites</p> <p>Elemental concepts of Circuits Linear differential equations Resolution of systems of equations Complex numbers</p>
<p>Course category in the program</p>

<input type="checkbox"/> X R (required)	<input type="checkbox"/> E (elective)	<input type="checkbox"/> SE (selective elective)
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Specific goals for the course

<p>Specific outcomes of instruction</p> <p>RA1: Capacity to analyze resistive circuits</p> <p>RA2: Capacity to study circuits with one or two reactive elements in time domain</p> <p>RA3: Capacity to analyze circuits with sinusoidal excitation in the steady regime</p> <p>RA4: Understanding of magnetic coupling phenomena in simple circuits.</p> <p>RA5: Capacity to calculate energies and power in circuits and to understand the resonance and impedance matching phenomena</p>

<p>Student outcomes addressed by the course</p> <p>CEB4</p> <p>CG1,CG2,CG4,CG5</p>

Bibliography and supplemental materials
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Análisis de circuitos en ingeniería. Hayt, Kemmerly, Durbin. Mc Graw Hill
Circuitos y Señales: Introducción a los Circuitos Lineales y de Acoplamiento. R. E. Thomas, A. J. Rosa, Ed. Reverté
Problemas de Examen de Introducción al Análisis de Circuitos. Juan E. Page de la Vega, José R. Montejo Garai, José A. Encinar Garcinuño, José M ^a Gil Gil. Fundetel.
Análisis de Circuitos Eléctricos. José M ^a Gil Gil. Fundetel.

Teaching methodology

<input type="checkbox"/> X lectures	<input type="checkbox"/> X problem solving sessions	<input type="checkbox"/> collaborative actions	<input type="checkbox"/> laboratory sessions
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Other:	
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