Introduction*

Dinh Sy Hien

This work is produced by The Connexions Project and licensed under the
Creative Commons Attribution License †

Abstract

This module introduces approach to order of presentation of topics of electronic circuit analysis.

Electric circuit theory and electromagnetic theory are the two fundamental theories upon which all branches of electrical engineering are build. Many branches of electrical engineering, such as power, electric machines, control, electronics, communications and instrumentations are based on electric circuit theory. Therefore, the basic circuit theory course is the most important course for an electrical engineering student and always an excellent starting point for a beginning student in electrical engineering education. Circuit theory is also specializing in other branches of physical sciences because circuits are a good model for the study of energy systems in general and because of applied mathematics, physics and topology are involved.

The main objective of this course is to present circuit analysis and to understand basic electronic circuits. This material may be used for a one semester course. It is broadly divided into two parts.

Part 1, consisting of chapters 1 to 9, is devoted to dc and ac circuits. It covers the fundamental laws and theorems, circuit techniques, passive and active elements, and passive and active filters.

Part 2, consisting of chapters 10 to 11, are devoted to analog and digital circuits.

The following table lists the textbook approach to the order of presentation of topics.

Approach to order of presentation of topics

Chapter 1	Basic Concepts
Chapter 2	Basic Laws
Chapter 3	Capacitors and Inductors
Chapter 4	Methods of Analysis
Chapter 5	Circuit Theorems
Chapter 6	First Order Circuits
Chapter 7	Second-Order Circuits
Chapter 8	Operational Amplifiers
Chapter 9	Frequency Response
Chapter 10	Applications and design of integrated circuits
Chapter 11	Digital circuits

*Version 1.1: Jul 22, 2009 2:26 am -0500

†http://creativecommons.org/licenses/by/3.0/

Table 1

The author urges and invites instructors and students to post reactions, questions, comments and even gripes. All will be carefully considered. The internet email address is: dshien52@yahoo.com[1] .

[1] dshien52@yahoo.com