

COURSE	Name	: Circuit Analysis Technique
	Code	: EE185741
	Credit(s)	: 2
	Semester	: (Elective Course)

Description of Course

The course of Circuit Analysis Technique discusses (review) the concept of electric circuit and its analysis. The learning materials include: circuit elements (sources and components), Basic law of circuits (Ohm and Kirchhoff's Law), circuit analysis (nodes and mesh), and Some important circuit techniques (superposition, thevenin and Norton equivalent circuit, maximum power transfer). The next topics of discussion are the transient response of step units (order 1 and order 2), steady state analyzes of sinusoid signal, power calculations on an ac circuits, polyphase circuits, and magnetic coupling circuits.

Learning Outcomes

Knowledge

(P02) Mastering the concepts, procedures and principles of engineering and making them possible in the form of procedures necessary for the analysis and design of systems in the field of power systems, control systems, multimedia telecommunications, or electronics.

Specific Skill

(KK02) Being able to compose problem solving in engineering through depth and breadth of knowledge which adapts to changes in science and technology in power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

General Skill

(KU07) Being able to improve the capacity of learning independently

Attitude

(S09) Demonstrate a responsible attitude towards the work in the field of his/her expertise independently.

Course Learning Outcomes

Knowledge

Mastering the concept of electric circuits and its analysis for the purpose of analysis and system design in the field of electrical technology.

Specific Skill

Able to describe the procedure of electric circuit analysis in the field of electrical technology.

General Skill

Able to improve the capacity of learning independently.

Attitude

Demonstrate responsible attitude toward the work in his/her own field of expertise related to electrical circuitry.

Main Subjects

1. Circuit elements (sources and components).
2. Basic law of circuits (Ohm and Kirchhoff's Law).
3. Circuit analysis (nodes and mesh).
4. Some useful/important circuit techniques (superposition, thevenin and Norton equivalent circuit, maximum power transfer).
5. Transient response of step units (order 1 and order 2).
6. Steady state analyzes of sinusoid signal.
7. Power calculations on an ac circuits.
8. Polyphase circuits.
9. Magnetic coupling circuits.

Reference(s)

- [1] CK Alexander and MNO Sadiku, Fundamental of Electric Circuit, McGraw Hill, 8th Edition, 2013.
- [2] WH Hayt, JE Kemmerly, and SM Durbin, Engineering Circuit Analysis, McGraw Hill, 8th Edition, 2007.

Prerequisite(s)

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