

COURSE	Name	: Intelligent Control of Energy Distribution
	Code	: EE185526
	Credit(s)	: 2
	Semester	: (Elective Course)

Description of Course

The intelligent control of energy distribution course provides a comprehensive knowledge of power generation systems, from modeling, analysis, and control of electrical power systems. The subject of this lecture consists of synchronous machine modeling, power plant components, load characteristics, and excitation systems. Examples of applications provided are generators of thermal and hydro generators. The next topic is different modeling and interconnection analysis of generating systems.

Learning Outcomes

Knowledge

(P02) Mastering engineering concepts and principles to develop the necessary procedures and strategies for systems analysis and design in the areas of power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

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

(KU11) Being able to implement information and communication technology in the context of execution of his/her work.

Attitude

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.
(S12) Working together to be able to make the most of his/her potential.

Course Learning Outcomes

Knowledge

Mastering the concept and application of control of energy distribution

Specific Skill

Capable of modeling and analysis of generating systems

General Skill

Able to use appropriate software to perform analysis and design of electric drive system settings

Attitude

Demonstrating attitude of responsibility on work in his/her field of expertise independently

Main Subjects

1. Concepts and definitions of power generation systems
2. Modeling and analysis of synchronous machines
3. Modeling and load analysis

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4. Modeling and analysis of excitation systems
 5. Concept and modeling of thermal and hydro generating systems
 6. Stability analysis of generating systems
 7. Modeling and interconnection analysis of generating systems

Reference(s)

- [1] Kundur, Prabha : Power System Stability and Control, EPRI, McGraw-Hill, 1994
- [2] Elgerd, Olle I. : Electric Energy System Theory : An Introduction, McGraw-Hill, 1971
- [3] Gabbar, Hossam, Smart Energy Grid Engineering, Academic Press, 2016

Prerequisite(s)

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