

<b>Course</b>	Name : Introduction to Electrical Technology
	Code : EW184101
	Credits : 2
	Semester : I

### Description of Course

Introduction to Electrical Technology course discusses the basics of electrical technology which includes introductory material into power systems engineering, control systems engineering, electronics, telecommunications engineering, computer engineering, and biomedical engineering also the history and impact of electrical technology for civilization, the role of physics and mathematics in technology electrical engineering, and the importance of creativity and integrity for student in electrical technology

### Learning Outcomes

#### KNOWLEDGE

(P03) Mastering the concepts and principles of design procedure in power systems, control systems, multimedia telecommunications, or electronics.

#### SPECIFIC SKILL

(KK01) Able to formulate engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

#### GENERAL SKILL

(KU05) Able to take decisions appropriately in the context of problem solving in the area of expertise based on the results of information and data analysis

#### ATTITUDE

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.

### Course Learning Outcomes

#### KNOWLEDGE

Mastering the concepts, principles and procedures of electric power system design, regulatory systems, multimedia telecommunications, electronics, computer engineering, and biomedical engineering

#### SPECIFIC SKILL

Be able to formulate engineering problems in electric power systems, control systems, multimedia telecommunications, electronics, computer engineering, and biomedical engineering.

Be able to describe the resolution of engineering problems in electric power systems, control systems, multimedia telecommunications, electronics, computer engineering, and biomedical engineering.

#### GENERAL SKILL

Able to make decisions appropriately in the context of problem solving in his field of expertise, based on the results of analysis of information and data

#### ATTITUDE

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

### Main Subjects

1. Introduction to power system techniques
2. Introduction to control system techniques
3. Introduction to electronics
4. Introduction to telecommunications techniques
5. Introduction to computer engineering
6. Introduction to biomedical techniques
7. History / electro timeline of technology (Volta, Ohm, Kelvin, Faraday, Biot Savart, Laplace, Ampere, Maxwell, and so on)
8. Basic phenomena of electricity and magnetism (electrons, electric current, magnetic electricity, batteries, etc.)
9. Physics and mathematics in electrical technology (electro physical phenomena, mathematical modeling for signals and systems in electrical technology)
10. Impact of electrical technology on the development of civilization (transportation, etc.)
11. Creativity for graduates of electrical technology in the face of technological developments (having strong basic mastery)
12. Code of ethics and integrity for scholars of electrical technology (recognition of the work of others, independent efforts to solve problems, etc.)

### Reference(s)

- [1] Anthonie Meijers, Philosophy of Technology and Engineering Sciences, Elsevier, 2009.
- [2] Clive Maxfield dkk, Electrical Engineering, Elsevier, 2008.
- [3] Don Johnson, J. D. Wise, Fundamentals of Electrical Engineering, University Press of Florida, 2009.
- [4] Charles Gross, Thaddeus Roppel, Fundamentals of Electrical Engineering, Taylor and Francis, 2012.
- [5] Stan Gibilisco, Teach Yourself Electricity and Electronics, ed. 4, McGraw-Hil, 2006.

### Prerequisite(s)

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