

COURSE	Name : High Voltage Insulation Engineering
	Code : EE185112
	Credit(s) : 3
	Semester : I

Description of Course

This course studies high voltage isolation technology consist of gas insulation, vacuum, liquid and solid. More details, the characteristics of each isolation will be discussed. These characteristics include, pre-breakdown, breakdown, electric field, electric arc, and classification. Ageing phenomena including causes, identification and improvement will also be discussed. In addition, maintenance and detection of damage is also discussed.

Learning Outcomes

Knowledge

(P01) Mastering the concepts and principles of science in a comprehensive manner, and to develop procedures and strategies needed for the analysis and design of systems related to the field of power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics as a preparation for further education or professional career.

Specific Skill

(KK01) Being able to formulate engineering problems with new ideas for the development of 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 and understanding the characteristic and phenomenon of failure on air dielectric, vacuum, liquid and solid dielectric.

Mastering the principle of lightning mechanism and its protection.

Mastering the basic principle of high voltage insulation equipment design.

Specific Skill

Able to explain the failure process on air dielectric, SF6 gas, vacuum, liquid and solid dielectric.

Able to explain the principle of lightning mechanism and its protection design.

Able to explain the important factors in the basic design of high voltage equipment isolation system.

General Skill

Able to understand the flow of scientific journal writing and able to do a review journal.

Attitude

Show a responsible attitude towards the work in the field of expertise independently.
Work together to be able to take full advantage of the potential possessed.

Main Subjects

1. The process of failure (breakdown) there is air dielectric material
2. The process of failure in Vacuum
3. The process of failure of the liquid dielectric material
4. Failure process on solid dielectric material
5. Mechanism of lightning and its protection
6. Basic design of high voltage insulation equipment

Reference(s)

- [1] Ravindra Arora, Wolfgang Mosch, "High Voltage and Electrical Insulation Engineering", IEEE Press, John Wiley and Sons, 2011
- [2] Dieter Kind, Herman Kärner, " High-Voltage Insulation Technology

Prerequisite(s)

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