COURSE	Name	: Power System Apparatus Diagnosis
	Code	: EE185519
	Credit(s)	: 3
	Semester	: (Elective Course)

Description of Course

This course discusses the diagnostics of equipment and power systems especially high voltage transmission. To optimize the balance between cost efficiency and quality improvement of power systems, it is necessary to diagnose the condition of the equipment now and to estimate its performance in the future. The subjects discussed are diagnostic strategies of electric power systems, diagnostic tools of major age-sensitive equipment including Generators, Circuit breakers, transformers, GIS and transmission line.

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.

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

Attitude

(S12) Working together to be able to make the most of his/her potential.

Course Learning Outcomes

Knowledge

Mastering and understanding the concept of monitoring system conditions and diagnostics of power systems.

Knowing the management asset of Power System.

Know the diagnostic techniques Generator, Circuit breaker, transformer, GIS and channel.

Specific Skill

Able to explain the concept of system monitoring and diagnostic condition of electric power system, Power Management System asset, and diagnostic technique Generator, Circuit breaker, transformer, GIS and channel.

General Skill

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

Attitude

Demonstrate a responsible attitude towards the work in the field of expertise independently.

Working together to be able to take full advantage of their potential.

Main Subjects

1. Introduction: equipment failure rate, reliability of power system, intelligent grid management system, system monitoring and diagnostic of electric power system
2. Principles Asset management of electric power system
3. Principle of diagnosis of generator system
4. Principle of diagnostic Transformer
5. The principle of GIS diagnosis
6. The principle of transmission line diagnosis
7. Journal review

Reference(s)

[1] M. Hanai, H. Kojima, N. Hayakawa, K. Shinoda and H. Okubo, "Integration of asset management and smart grid with intelligent grid management system," in IEEE Transactions on Dielectrics and Electrical Insulation, vol. 20, no. 6, pp. 2195-2202, December 2013.

[2] M. Shahidehpour and R. Ferrero, "Time management for assets: chronological strategies for power system asset management," in IEEE Power and Energy Magazine, vol. 3, no. 3, pp. 32-38, May-June 2005

[3] “Handbook of Large Turbo-Generator Operation and Maintenance”, Geoff Klempner and IsidorKerszenbaum, John Wiley, 2008

[4] Visa Musa Ibrahim, Zulkurnain Abdul-Malek, Nor AsiahMuhamad, Status Review on Gas Insulated Switchgear Partial Discharge Diagnostic Technique for Preventive Maintenance, Indonesian Journal of Electrical Engineering and Computer Science, Vol. 7, No. 1, July 2017, pp. 9 ~ 17, DOI: 10.11591/ijeecs.v7.i1.pp9-17

[5] https://dimrus.com/dilin_e.html

[6] Beberapa jurnal tentang peluahan sebagian dari international Journal

Prerequisite(s)

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