COURSE	Name	: Electrical Power Equipment Maintenance
	Code	: EE184917
	Credits	: 3
	Semester	: Elective

Description of Course

Electrical Power Equipment Maintenance Courses discuss about management and maintenance strategy (Computerized Maintenance Management System / CMMS), DC and AC test in electrical equipment. In addition, this lecture also discussed the testing and maintenance of electric power system equipment in power plant, substations, transmission and distribution. The equipment including Generator, Cable, Transformer, Switchgear, Circuit breaker, and Motor. In addition, practical testing of the equipment and its analysis will be carried out in the laboratory. The practical testing in laboratory consist of the measurement of resistance, inductance and capacitance winding, isolation resistance, Polarization Index, Dielectric absorption ratio, contact resistance, grounding resistance and HiPot test. Procedure safety, work order and documentation reports are also discussed.

Learning Outcomes

Knowledge

(P02) Mastering the concepts and principles of engineering, and implementing them in the form of procedures for analysis and design 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

(KU12) Able to implement information and communication technology (ICT) in the context of implementation 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 of equipment maintenance management, the type of test for each electrical equipment, the standard used for evaluation of test results and maintenance.

Specific Skill

Able to operate electrical test equipment including Mega Ohm meter, High Potential Test, micro amperemeter, milli voltmeter, earth resistant meter, thermal imager.

General Skill

Able to compile reports of equipment testing results and conduct evaluation.

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. CMMS Concept and Maintenance Strategy of Electrical Equipment: how to determine RTF, PM, PdM and RCM
2. DC test for electrical equipment isolation: isolation resistance, PI, DAR
3. Test AC for electrical equipment insulation: PF and DF
4. Mode of failure and maintenance of Electric Motors
5. Mode of failure and maintenance of the transformer
6. Mode failure and maintenance Generator
7. Mode of failure and maintenance of the Panel

Reference(s)

[1] Paul Gill, Electrical Power Equipment Maintenance and Testing, Second Edition, December 22, 2008 by CRC Press ISBN 9781574446562.

[2] Greg C. Stone, Ian Culbert, Edward A. Boulter, Hussein Dhirani, Electrical Insulation for Rotating Machines: Design, Evaluation, Aging, Testing, and Repair, 2nd Edition, July 2014, Wiley-IEEE Press, ISBN: 978-1-118-05706-3

[3] William A. Thue, Electrical Power Cable Engineering, Third Edition, December 13, 2011 by CRC Press, ISBN 9781439856437

Prerequisite(s)

EE184512 Electric Machines

EE184513 High Voltage Engineering