E5201 August 2:1

Production, Measurement and Application of high voltage

Instructor

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Department: Electrical Engineering

Course Time: Mon, Wed., 10-11 AM, Wed., 2-5 PM

Lecture venue: Seminar hall, High Voltage Engg. building

Detailed Course Page:

Announcements

Brief description of the course

The course provides a brief insight into various aspects of high voltage engineering covering mainly

production and measurement techniques. The accompanying laboratory work provides an insight into

understanding the different types of air breakdowns and flashovers in addition to measuring and generation

aspects of high voltage.The course is a necessary requirement for maters and research students enrolled in EE

dept. The course is an essential requirement for all those working in power sectors and insulation industries.

Prerequisites

Syllabus

Generation of HV AC by cascade transformers, resonant circuit, Tesla coil; Generation of HV DC by

Cockroft-Walton voltage multipliers; generation of high impulse voltages and currents, repetitive HV pulses.

Methods of measurement of AC, DC and impulses voltages and currents, basic principles of electric

breakdown in gaseous medium; basic aspects of EHV/UHV power transmission, and selected industrial

applications of corona

Laboratory: Breakdown experiments on simple air-gaps, Measurement of AC/DC/Impulse, Chubb-Fortescue method, experiments on insulator strings including pollution flashover, radio-interference-voltage measurement etc.

Course outcomes

Course outcomes can be itemised as:

1. Advanced knowledge in high voltage insulation aspects

2. Expertise in generation and measurement of high voltages

3. Enhanced understanding in air breakdown aspects

4. Enhanced understanding in pollution aspects related to insulators

5. Enhanced understanding in high voltage application for pollution control

Grading policy

50% for internals/mid-term, 50% for final exam

Assignments

Resources