POWER SYSTEM ENGINEERING

PROF. DEBAPRIYA DAS
Department of Electrical Engineering
IIT Kharagpur

TYPE OF COURSE : Rerun | Core | UG
COURSE DURATION : 12 weeks (18 Jan' 21 - 09 Apr' 2)
EXAM DATE : 24 Apr 2021

PRE-REQUISITES : NIL
INTENDED AUDIENCE : BE/B.Tech. in Electrical Engineering students
INDUSTRIES APPLICABLE TO : Power Grid, NTPC, NHEC, DVC and State Electricity Boards.

COURSE OUTLINE :
This course is mainly for undergraduate third-year as well as fourth year Electrical Engineering students, which will introduce and explain the fundamental concepts in the field of electrical power system engineering. The basic concepts of underground cables, overhead line insulators, transient overvoltages and insulation coordination will be covered in detail. In addition to that, corona, sag and tension of transmission line will also be covered. In this course, distribution load flow, voltage stability analysis and application of capacitors in distribution networks will also be covered. Load frequency control of isolated and interconnected power system will be covered in depth. Unit commitment will also be covered. By the end of the course, the students should be able to gather high-quality knowledge of electrical power system engineering in the above mentioned fields.

ABOUT INSTRUCTOR :
Prof. Debapriya Das obtained his B.E. degree from Calcutta University (B.E. College (Presently known as IIEST), Shibpur, Howrah, WB), M.Tech. from I.I.T. Kharagpur and Ph.D. from I.I.T., Delhi. He has nearly thirty years of experience in teaching and research.

COURSE PLAN :
Week 1: Overhead Line Insulators
Week 2: Underground Cables
Week 3: Transient Overvoltages and Insulation Coordination
Week 4: Corona
Week 5: Sag and Tension
Week 6: Distribution System Load Flow and Voltage Stability
Week 7: Approximate Method of Distribution System Analysis
Week 8: Application of Capacitors for Radial Distribution Systems
Week 9: Load Frequency Control
Week 10: Load Frequency Control, cont'd
Week 11: Unit commitment
Week 12: Unit commitment, cont'd