ELECTRIC POWER DISTRIBUTION AUTOMATION

Course Code: 13EE1130

Pre requisites:
Basic knowledge of electrical power distribution systems

Course Educational Objectives:

✤ To gain the awareness of the problems and challenges of the existing distribution system
✤ To understand the need for Distribution Automation (DA) and appreciate its role in overcoming existing problems of distribution system
✤ To gain the knowledge of various aspects of Distribution Automation (SCADA, Substation/Feeder Automation, Remote Metering)
✤ To attain the knowledge of Demand Side Management and appreciate its role in improving performance of Demand Side Management.

Course Outcomes:

✤ To be able to select appropriate Communication Technology for DA
✤ To be able to reduce loss and improve voltage profile using DA
✤ To be able to implement DSM.

UNIT-I (12 Lectures)

DISTRIBUTION SYSTEM PLANNING AND AUTOMATION:
Power Sector Reforms, Basic Distribution Systems, Short-Term Load Forecasting, Long-Term Energy Forecasting, Technological Forecasting, Problems of existing Distribution System, Need for Distribution Automation, Characteristics of Distribution System, Distribution Automation (Objectives, Functions, Benefits), Feeder Automation, Communication Requirements
for DA, Remote Terminal Unit (RTU), Communication Technologies for DA.

UNIT-II  (10 Lectures)

SCADA SYSTEM:

UNIT-III  (12 Lectures)

SUBSTATION AUTOMATION:

UNIT-IV  (12 Lectures)

FEEDER AUTOMATION:

UNIT-V  (12 Lectures)

REMOTE METERING AND ENERGY MANAGEMENT:
Background for Automatic Meter Reading (AMR) for Utility, Components of AMR Systems, Communications Methods used for Meter Reading, AMR System, Services and Functions, Financial Analysis, Planning for AMR Implementation. Energy Management, Need Based Energy Management (NBEM), Demand Side Management (DSM).

TEXT BOOK:
REFERENCES:

