13EE42E3-ELECTRICAL POWER QUALITY
(EEE)

Credits: 4

Lectures/Week: 4Hrs. **Sessional Marks: 40**
End Exam Duration: 3Hrs **End Exam Marks: 60**

UNIT – I

LONG INTERRUPTION AND RELIABILITY EVALUATION : Over view of power quality, Power qualities and power quality standards, Observation of system performance standards and regulation, Overview of reliability evaluation, Basic reliability evaluation techniques, Cost of interruptions, Comparison of observations and reliability evaluation, Example calculations.

UNIT – II

SHORT INTERRUPTIONS : Introduction, Technology, Origin of short interruptions, Monitoring of short interruption, Influence on interruption, Single –phase tripping and stochastic prediction of short interruptions.

UNIT – III

VOLTAGE SAGS –CHARACTERIZATION : Introduction, Voltage sag magnitude, Voltage sag duration, Three phase unbalance, Phase –angle jumps magnitudes and phase –angle jumps for three phase unbalanced sags, Other characteristics of voltage sags, Load influence on voltage sags, Sags due to starting induction motors.

UNIT – IV

VOLTAGE SAGS – EQUIPMENT BEHAVIOR : Introduction, Computers and consumer electronics, Adjustable speed AC –drives, Adjustable speed DC –drive, Other sensitive load.

UNIT – V

VOLTAGE SAGS – STOCHASTIC ASSESSMENT : Compatibility between equipment and supply, Presentation of results, Voltage sag coordination chart, Power quality monitoring, The method of fault, Positions, The method of critical distances.

TEXT BOOKS :

1. "Understanding power quality problems " by Math H.J. Bollen, , standard publishers distributors.

2. "Electric power quality" by R.C.Dugan, M.F. MC Gran Aghan and H.W. Beaty MC Graw Hill New York.

3. “Electric Power Quality control techniques” by W.E. Kazibew and M.H. Sendavla, Van Nostrad Reinhold, New York.

REFERENCES :

1. “Analysis of faulted power systems” by P.M. Anderson, , New York : IEEE Press.

2. “Power Electronics and Motro Control” by W.Shepperd L.N. Hulley and D.T.W.Liang, , 2nd Canbridge University Press, Cambridge, U.K.,