

Course Number and Name												
BEE044 & POWER QUALITY MANAGEMENT												
Credits and Contact Hours												
3 & 45												
Course Coordinator's Name												
Mr.Vijayaragavan												
Text Books and References												
Text Books:												
1. Arindam Ghosh, "Power Quality Enhancement Using Custom Power Devices Power Quality Enhancement Using Custom Power Devices", Springer, 2002.												
2. Roger.C.Dugan, Mark.F.McGranagham, Surya Santoso, H.Wayne Beaty, "Electrical Power Systems Quality" McGraw Hill, 2003.												
References:												
1. Math H.J.Bollen, "Understanding Power Quality Problems-Voltage sag &Interruptions", IEEE Press, 2000.												
2. http://nptel.ac.in/courses/108106025/												
Course Description												
To study the various issues affecting Power Quality, their production, monitoring and Suppression.												
Prerequisites						Co-requisites						
Transmission & Distribution						Nil						
required, elective, or selected elective (as per Table 5-1)												
Required												
Course Outcomes (COs)												
CO1:To study various methods of power quality monitoring.												
CO2:To Study the production of voltages sags.												
CO3:To Study the interruptions types and its influence in various components.												
CO4:To Study the Effects of harmonics on various equipment's.												
CO5:Understand power quality monitoring and classification techniques.												
Student Outcomes (SOs) from Criterion 3 covered by this Course												
COs/SOs	a	b	c	d	e	f	g	h	i	j	k	l
CO1	M	H	M	H	M	L	M	L	M	M	L	M
CO2	M	H	H	H	H	H	M	L	M	M	L	M
CO3	M	H	H	H	H	H	M	L	M	M	L	M
CO4	M	H	H	H	H	H	M	L	M	M	L	M
CO5	M	H	M	M	H	M	M	L	M	M	L	M
List of Topics Covered												
UNIT I INTRODUCTION TO POWER QUALITY											9	
Power Quality phenomenon-Terms and definitions-Variou Power events in power quality - causes for reduction in power quality												
UNIT II VOLTAGE SAGS											9	
Sources of sags – Magnitude & duration of sag-effect of sag on computer and consumer												

Electronics- Monitoring and mitigation of voltage sag.

UNIT III INTERRUPTIONS 9

Origin of Long & Short interruption –influence on various equipments-Basic reliability indices - monitoring and mitigation of interruption

UNIT IV HARMONICS 9

Harmonic distortion: Voltage and current distortion- harmonic indices- harmonic sources from commercial and industrial loads- Effects of harmonics on various equipments- harmonic distortion evaluation- Devices for controlling harmonic distortion

UNIT V POWER QUALITY MONITORING 9

Monitoring considerations: Power line disturbance analyzer, power quality measurement equipment, harmonic spectrum analyzer, flicker meters, disturbance analyzer.