Maharaja Agrasen Institute of Technology

(Approved by AICTE & Affiliated to GGSIP University, New Delhi)
PSP area, Plot No.-1 Sector-22, Rohini, New Delhi – 110085
Ph.No. : 011-27582095 , 65151162/63 , 65162001
Website: www.mait.ac.in

Department of Electrical & Electronics Engineering

Electrical Power Quality (ETEE-432)

ACADEMIC PLAN FOR SEMESTER-VIII 2022

S.No.	TOPICS TO BE COVERED	Total No. of Lectures (42)	CO
	UNIT-I(Introduction to PQ)		
1	Power Quality , PQ problems like Sags swells,transient, harmonics	2	
	Interruption, fluctuations,voltage regulations, Notch ,PQ issues	2	
3	Remedies :customer side & utility side of meter PQ monitoring,montoring consideration Historical perspective of PQ Measuring instruments	3	CO 1
4	PQ measuring instruments Assessment of measuring data	2	
5	Application of intelligent system Different monitoring standards	2	
	UNIT-II (Voltage Sag Analysis)		
7	Voltage sag analysis & Characteristics	2	
8	Methodology for computation of sag magnitude and occurrence	2	
9	Accuracy of sag analysis , duration and frequency of sag	2	
10	fault behind transformers	2	CO

			2
11	Effect of pre fault voltage with simple example fast assessment methods for voltage sag in distribution system	3	
After Mid Term			
UNIT-III(Industrial Application)			
13	PQ consideration in indistrial power system	1	
14	Adjustable speed drives system System, Applications of ASD	3	
15	sources of power system harmonics ,Mitigation of harmonics	2	CO 3
16	Characteristcis of the sags experienced by 3phase, Types of sags and phase angle jumps	2	
17	Effects of momentary voltage dips on operation of : induction and synchronous motors	2	
UNIT-IV(Harmonics)			
18	Harmonics and harmonics distortion, Voltage vs current distortion	2	
19	Harmonics vs transients, Harmonics indices, Harmonics sources from commercial loads and Industrial loads,	3	CO 4
20	source location, system response characterstics	2	
21	Effect of harmonics distortion,inter harmonics Devices to control harmonics distortion	3	

Course Objectives

C.432.1	Analyse different power quality issues,monitoring and remedies of improvement of power quality
C.432.2	Apply the concept of voltage dip in realizing voltage sag analysis in distribution system.
C.432.3	Analyse PQ consideration in industrial power system.
C.432.4	Determine the significance of Harmonic Distortion and transients in electrical power system