Discipline- Electrical Engg.	Semester-3RD	Name of the teaching facualty- Sidharth Sankar Sahu
Subject- EC	No of days/week class allotted-3	No of weeks-15 From 14/7/25
Week	Class day	Theory topic
1	1st	Generation of alternating voltage
	2nd	Sinusoidal waveform, phase, frequency
	3rd	Phasor representation of sinusoidal quantities
2	1st	Voltage-current relationship in R, L, C elements
	2nd	Series R-L, R-C circuits
	3rd	Series R-L-C circuits
3	1st	Impedance triangle, power factor, real/reactive/apparent power
	2nd	Resonance in series RLC circuits
	3rd	Bandwidth, Quality Factor, Voltage magnification
4	1st	R-L, R-C parallel circuits
	2nd	R-L-C parallel circuits
	3rd	Power triangle in parallel circuits
5	1st	Phasor & impedance triangle
	2nd	Resonance in parallel circuits
	3rd	Bandwidth & Quality factor (parallel circuits)

6	1st	Practical examples of resonance
	2nd	Voltage magnification in parallel circuits
	3rd	Concept of 3-phase supply, phasor diagram
7	1st	Phase sequence & polarity
	2nd	Star connection: line vs phase voltages/currents
	3rd	Delta connection: line vs phase voltages/currents
86	1st	Balanced load calculations
	2nd	Unbalanced loads & neutral shift
	3rd	Power in 3-phase systems
9	1st	Real, reactive, apparent power measurement
	2nd	Source transformation (voltage↔current)
	3rd	Star-Delta & Delta-Star conversion
10	1st	Mesh analysis (KVL method)
	2nd	Nodal analysis (KCL method)
	3rd	Mixed problems using mesh & nodal analysis
11	1st	Superposition theorem
	2nd	Thevenin’s theorem
	3RD	Norton’s theorem

12	1st	Maximum power transfer theorem
	2nd	Reciprocity theorem
	3rd	Theorem applications in circuits
13	1st	Combined theorems – complex problems
	2nd	Revision of theorems
	3rd	Practice problems (mock test style)
14	1st	Z-parameters (open circuit impedance)
	2nd	Y-parameters (short circuit admittance)
	3rd	ABCD (transmission) parameters
15	1st	h-parameters (hybrid)
	2nd	Interrelationship between parameters
	3rd	Interconnection of 2-port networks

Discipline- Electrical Engg.	Semester-3RD	Name of the teaching facualty- SWARNAPRABHA PANIGRAHI
Subject- DCMT	No of days/week class allotted-3	No of weeks-15 From 14/7/25
Week	Class day	Theory topic
1	1st	DC GENERATOR Construction, parts, materials
	2nd	Principle of operation, Fleming's right-hand rule
	3rd	EMF equation derivation
2	1st	Types of DC generators
	2nd	Armature reaction
	3rd	Commutation
3	1st	Performance characteristics (brief)
	2nd	Applications of DC generators
	3rd	Revision + Numerical
4	1st	DC MOTOR Fleming's left-hand rule, working principle
	2nd	Back EMF, Voltage equation
	3rd	Torque equation, shaft torque, losses
5	1st	Efficiency, BHP, Brake test
	2nd	Types of DC motors
	3rd	Starters: 2-point & 3-point

6	1st	Speed control (shunt/series): flux method
	2nd	Speed control by armature method
	3rd	Brushless DC motor – construction & working
7	1st	SINGLE PHASE TRANSFPRMER Shell type & Core type transformers
	2nd	Construction & Parts
	3rd	Materials used in transformer cores
86	1st	Working principle of transformers
	2nd	EMF equation & voltage transformation ratio
	3rd	Transformer ratings & their significance
9	1st	Phasor diagrams (no-load & on-load)
	2nd	Equivalent circuit & leakage reactance
	3rd	Voltage regulation, Direct loading
10	1st	OC/SC test, Efficiency, All-day efficiency
	2nd	THREE PHASE TRANSFORMER Bank of three single-phase transformers (Y-Y, Δ-Δ etc.)
	3rd	Single three-phase transformer unit
11	1st	Distribution vs. Power transformers
	2nd	Construction & cooling
	3RD	Selection criteria

12	1st	Need for parallel operation
	2nd	Conditions for parallel operation
	3rd	Polarity test (mutual inductance + single-phase)
13	1st	Phasing out test on three-phase transformer
	2nd	**Special Purpose Transformers** Single-phase autotransformer – construction & working
	3rd	Three-phase autotransformer – operation & uses
14	1st	Isolation transformer – construction
	2nd	Isolation transformer – applications
	3rd	Special transformers – introduction
15	1st	Review & summary (Unit V)
	2nd	Complete Course Revision & Summary
	3rd	Practice Problems/Test/Quiz

Discipline- Electrical Engg.	Semester-3RD	Name of the teaching facualty- Sidharth Sankar Sahu
Subject- EEM	No of days/week class allotted-3	No of weeks-15 From 14/7/25
Week	Class day	Theory topic
1	1st	**Fundamentals of Measurements** Significance of Measurement, Units, Standards
	2nd	Classification of Instrument Systems
	3rd	Null and Deflection Type Instruments
2	1st	Absolute and Secondary Instruments
	2nd	Analog and Digital Instruments
	3rd	Static and Dynamic Characteristics
3	1st	Types of Errors
	2nd	Calibration – Need and Procedure
	3rd	Classification: Indicating, Recording, Integrating Instruments
4	1st	Essential Requirements of Indicating Instruments
	2nd	**Measurement of Voltage and Current** DC Ammeter – Basic, Multi-range, Universal Shunt
	3rd	DC Voltmeter – Basic, Multi-range
5	1st	Loading Effect and Sensitivity
	2nd	AC Voltmeter – Rectifier Type
	3rd	CT (Current Transformer): Construction and Working

6	1st	PT (Potential Transformer): Construction and Working
	2nd	Applications of CT and PT
	3rd	Summary and Revision
7	1st	Class Test 1 (Unit I & II)
	2nd	**Measurement of Electric Power** Analog Meters: PMMC & PMMI – Construction and Working
	3rd	Merits and Demerits of PMMC, PMMI
8	1st	Dynamometer Type Wattmeter – Construction & Working
	2nd	Errors and Compensations in PMMC, PMMI, and Dynamometer Type
	3rd	Active Power Measurement: One Wattmeter Method
9	1st	Two Wattmeter Method – Theory
	2nd	Three Wattmeter Method – Introduction
	3rd	Power Factor Effect in 2W Method
10	1st	Maximum Demand Indicator (Definition only)
	2nd	**Measurement of Energy** Single-phase Electronic Energy Meter – Construction and Working
	3rd	Three-phase Energy Meter
11	1st	Errors and Compensations
	2nd	Calibration of Single-phase Meter by Direct Loading
	3RD	Practice Problems and Case Studies

12	1st	Assignment 3 Submission and Discussion
	2nd	Doubt Clearance
	3rd	Low, Medium, High Resistance – Kelvin Bridge, Megger, Ohmmeter
13	1st	Inductance Measurement using Anderson Bridge
	2nd	Capacitance Measurement using Schering Bridge
	3rd	Single-beam CRO – Working and Block Diagram
14	1st	Digital Storage Oscilloscope (DSO) – Block Diagram, CRT, Specs
	2nd	Measurement using CRO – Time, Frequency, Phase, Delay Line
	3rd	Other Meters – Earth Tester, DMM, LCR Meter
15	1st	Frequency Meter, Power Factor Meter, Phase Sequence Indicator
	2nd	Tri-vector Meter, Synchroscope, Signal Generator – Need & Block
	3rd	Class Test / Final Recap & Doubt Clearing