DISCIPLINE – ELECTRICAL ENGG	SEMESTER	NAME OF THE TEACHING FACULTY- JYOTIRMAYEE SETHY,LECT(ELECT.)	
SUB-AC M/C	No Of Days Per Week Class Alloted-3	SEMESTER FROM 22.12.2025 to 18.04.2026 NO OF WEEK – 16 WEEKS	
WEEK	CLASS DAY	THEORY	STATUS
1ST WEEK	1ST day 2nd day 3rd day	**Three Phase Induction Motor** 1.1 Working principle: production of rotating magnetic field, Synchronous speed, rotor speed and slip 1.2 Constructional details of 3 phase induction motors: Squirrel cage induction motor and Slip ring induction motor 1.3 Rotor quantities: frequency, induced emf, power factor at starting and running condition	
2nd WEEK	1ST day 2nd day 3rd day	1.4 Characteristics of torque versus slip (speed), Torques: starting, full load and maximum with relations among them(numericals) 1.5 Induction motor as a generalized transformer with phasor diagram 1.6 Four quadrant operation, Power flow diagram(numericals)	
3RD WEEK	1ST day 2nd day 3rd day	1.7 Starters: need and types; stator resistance, auto transformer, star delta, rotor resistance and soft starters 1.8 Speed control methods: stator voltage, pole changing, rotor resistance and VVVF 1.9 Motor selection for different applications as per the load torque-speed requirements 1.10 Maintenance of three phase induction motors	

4TH WEEK	1ST day 2nd day 3rd day	**Single phase Induction Motors** 2.1 Double field revolving theory 2.2 Principle of making single phase induction motors self-start		
5TH WEEK	1ST day 2nd day 3rd day	2.3 Construction and working of single phase induction motors 2.3.1 Resistance start induction run 2.3.2 Capacitor start induction run 2.3.3 Capacitor start capacitor run 2.3.4 Shaded pole 2.3.5 Repulsion type 2.3.6 Series motor 2.3.7 Universal motor 2.3.8 Hysteresis motor		
6TH WEEK	1ST day 2nd day 3rd day	2.4 Torque-speed characteristics for all of the above motors. 2.5 Motor selection for different applications as per the load torquespeed requirements 2.6 Maintenance of single phase induction motors		
7TH WEEK	1ST day 2nd day 3rd day	**Three phase Alternators** 3.1 Principle of working, moving and stationary armatures 3.2 Constructional details: parts and their functions 3.3 E.M.F. equation of an Alternator with numerical by considering short pitch factor and distribution factor 3.4 Alternator loading 3.4.1 Factors affecting the terminal voltage of alternator 3.4.2 Armature resistance and leakage reactance drops		
8TH WEEK	1ST day 2nd day 3rd day	3.3 E.M.F. equation of an Alternator with numerical by considering short pitch factor and distribution factor 3.4 Alternator loading 3.4.1 Factors affecting the terminal voltage of alternator 3.4.2 Armature resistance and leakage reactance drops **Internal assessment 1**		

9TH WEEK	1ST day 2nd day 3rd day	3.5 Armature reaction at various power factors and synchronous impedance 3.6 Voltage regulation: direct loading and synchronous impedance methods 3.7 Maintenance of alternators.	
10TH WEEK	1ST day 2nd day 3rd day	**Synchronous Motors** 4.1 Principle of working /operation, significance of load angle. 4.2 Torques: starting torque, running torque, pull in torque, pull out torque 4.3 Synchronous motor on load with constant excitation (numerical), effect of excitation at constant load (numerical).	
11TH WEEK	1ST day 2nd day 3rd day	4.4 Curves and Inverted V-Curves. 4.5 Hunting and Phase swinging. 4.6 Methods of Starting of Synchronous Motor	
12TH WEEK	1ST day 2nd day 3rd day	4.7 Losses in synchronous motors and efficiency (no numerical). 4.8 Applications areas	
13TH WEEK	1ST day 2nd day 3rd day	**Fractional horse power (FHP) Motors** 5.1 Construction and working 5.1.1 Synchronous Reluctance Motor 5.1.2 Switched Reluctance Motor 5.1.3 BLDC 5.1.4 Permanent Magnet Synchronous Motors	
14TH WEEK	1ST day 2nd day 3rd day	5.1.5 Stepper motors 5.1.6 AC and DC servomotors 5.2 Torque speed characteristics of above motors 5.3 Applications of above motors	
15TH WEEK	1ST day 2nd day 3rd day	**2nd internal assessment**	

16TH WEEK	1ST day 2nd day 3rd day	**Revision for semester exam**	

24/12/2025