

GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN POWER ELECTRONICS

Semester: 4

Subject Name ELECTRICAL MACHINES-II

Sr.No	Course content
1.	POLY – PHASE INDUCTION MOTOR 1) Principle of working, types and construction. 2) Torques & condition for maximum torques. 3) Effect of change in supply voltage on speed and torque. 4) Need of using starter. 5) Types of starter, their connection diagrams and working. 6) Power stages and maximum power output. 7) Vector diagram and equivalent circuit of poly phase induction motor. 8) Computation of motor performance using circle diagram. 9) Speed control methods (conventional and using thyristor) and their limitations. 10) Principle of working and construction of submersible motor. 11) Linear induction motor
2.	SINGLE PHASE INDUCTION MOTOR 1) Principle of working. 2) Why single phase motor is not self starting? 3) Types, construction and characteristics. 4) Speed control of single phase motor using electronic circuit. 5) Application of different types of single phase motors.
3.	ALTERNATOR 1) Principle of working & construction. 2) Types of winding and related terms. 3) Vector diagram of alternator. 4) Methods of voltage regulation of an alternator. 5) Parallel operation of alternator 6) Synchronising alternator with bus bar.
4.	SYNCHRONOUS MOTOR 1) Principle of working & construction. 2) Hunting phenomena and Function of Damper winding. 3) Starting methods. 4) Effect of change in excitation. 5) Vector diagrams and 'V' –curves. 6) Applications.

5.	A.C. COMMUTATOR MOTOR 1) Working principle, construction and applications of A.C. series motor. 2) Working principle, construction and applications of poly phase commutator motor.
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Reference Books:

- (1) Electrical technology. - By B.L.Theraja
- (2) Electrical technology. - By S.L.Uppal
- (3) Electrical Engineering. - By Shah & Amin
- (4) Element of Electrical Machine. - By Despande
- (5) Electrical Machine-2. - By J.B.Gupta
- (6) Electrical Technology. - By H.Cotton
- (7) Design & Performance of A.C.Machine - By M.G.Say