

DEPARTMENT OF ELECTRICAL ENGINEERING
College of Technology & Engineering
 Maharana Pratap University of Agriculture & Technology, Udaipur

Weekly Lecture Schedule

Course Title : Electrical Machines-II (EE 313)
 Class : Third Year B. Tech. (Electrical Engineering)
 Venue : Room No: 213; Electrical Engineering Department
 Lecturer : Jai Kumar Maherchandani

Week	No. of Classes	Contents to be Covered
First Week	3	Scope, importance and Introduction of Subject <u>Induction Motors (Unit –I)</u> 1. Basic Concept and rule related to Electrical Machines 2. Development of Rotating Magnetic Field 3. Construction of Induction Motor 4. Basic principle of operation
Second Week	3	5. Induction Motor as generalized transformer 6. Phasor Diagram 7. Equivalent Circuits 8. No-load and Blocked rotor test
Third Week	3	9. Circle Diagram 10. Calculation of Performance 11. Torque-slip Characteristics 12. Effect of rotor resistances
Fourth Week	3	13. Operating characteristics of induction Motor 14. Speed Control of induction motor 15. Starting and braking 16. Cogging and crawling
Fifth Week	3	<u>Single Phase Induction Motor (Unit-II)</u> 1. Introduction 2. Basic Principle 3. Revolving Field Theory 4. Method of Starting 5. Equivalent Circuits 6. Induction Generators 7. Induction Regulators
Sixth Week	3	<u>Synchronous Generator (Unit-II)</u> 1. Constructional features 2. General equation of induced emf 3. Effect of distribution and chording 4. Armature reaction 5. Theory of cylindrical rotor machines
Seventh	3	6. Phasor diagrams

Week		<ul style="list-style-type: none"> 7. OCC, SCC and ZPF characteristics 8. Saturation effects 9. Potier triangle 10. Regulation by synchronous impedance method
Eighth Week	3	<ul style="list-style-type: none"> 11. Voltage regulation by MMF Method 12. Voltage regulation by ASA Method 13. Relative comparison 14. Theory of Salient pole machines 15. Blondel's Two reaction theory 16. Phasor Diagram
Ninth Week	3	<ul style="list-style-type: none"> 17. Determination of direct and quadrature axis reactance 18. Parallel operation of alternators 19. Synchronizing operation of infinite bus 20. Synchronizing Power
Tenth Week	3	<ul style="list-style-type: none"> 21. Power-angle characteristics 22. Stability 23. Numerical Problems <p style="text-align: center;"><u>Synchronous Motor (Unit-III)</u></p> <ul style="list-style-type: none"> 1. Construction 2. Principle of operation 3. Equivalent Circuit
Eleventh Week	3	<ul style="list-style-type: none"> 4. Phasor Diagram 5. Power Flow Equation 6. V Curves 7. Starting 8. Hunting and Damping
Twelfth Week	3	<p style="text-align: center;"><u>Commutator Motors (Unit-III)</u></p> <ul style="list-style-type: none"> 1. Effect of injected EMF 2. Commutator as frequency Changer 3. Single Phase Series Motor 4. Scharge Motor
Thirteenth Week	3	<p style="text-align: center;"><u>Fractional Horse Power Motors (Unit-IV)</u></p> <ul style="list-style-type: none"> 1. Construction, principle of operation, elementary analysis, characteristics and application of: <ul style="list-style-type: none"> (a) Universal Motors (b) Repulsion Motors (c) Hysteresis Motor
Fourteenth Week	3	<ul style="list-style-type: none"> (d) Brushless Motor (e) Linear Induction Motor (f) Stepper Motor
Fifteenth Week	3	Revision and Remedial Classes and University/GATE/IES old papers Practice
Total	45	