



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE STRUCTURE-R19

III Year – I SEMESTER				
	L	T	P	C
	0	0	3	1.5
ELECTRICAL MACHINES – II LABORATORY				

Learning objectives:

- To control the speed of three phase induction motors.
- To determine /predetermine the performance three phase and single phase induction motors.
- To improve the power factor of single phase induction motor .
- To predetermine the regulation of three–phase alternator by various methods, find X_d/ X_q ratio of alternator and asses the performance of three–phase synchronous motor.

Any 10 of the following experiments are to be conducted:

1. Brake test on three phase Induction Motor
2. No-load & Blocked rotor tests on three phase Induction motor
3. Regulation of a three –phase alternator by synchronous impedance &m.m.f. Methods
4. Regulation of three–phase alternator by Potier triangle method
5. V and Inverted V curves of a three—phase synchronous motor.
6. Determination of X_d and X_q of a salient pole synchronous machine
7. Equivalent circuit of single phase induction motor
8. Speed control of induction motor by V/f method.
9. Determination of efficiency of three-phase alternator by loading with three phase induction motor.
10. Power factor improvement of single-phase induction motor by using capacitors and load test on single-phase induction motor.
11. Parallel operation of three-phase alternator.
12. Brake test on single-phase AC series Motor.
13. Starting methods of a capacitor start and capacitor start run single-phase Induction motor.
14. Brake test on single-phase Induction Motor.

Learning outcomes:

After the completion of the course the student should be able to:

- assess the performance of single phase and three phase induction motors.
- control the speed of three phase induction motor.
- predetermine the regulation of three–phase alternator by various methods.
- find the X_d/ X_q ratio of alternator and asses the performance of three–phase synchronous motor.
- determine the performance single phase AC series motor.