



**GOVERNMENT POLYTECHNIC KORAPUT
DEPARTMENT OF ELECTRICAL ENGINEERING**

Pr. 1 ELECTRICAL MACHINE LAB-II

Name of the Course: Diploma in Electrical Engineering			
Faculty: Mr Ruhia Hansda			
Course code:	Th.4	Semester: W.E.F. 01/08/2023	5 th
Total Period:	90 Periods	Examination:	3 Hrs
Lab. Periods:	6P / Week	Term Work/Sessional:	25
Tutorial:	-	End Semester Examination:	50
Maximum marks:	75		

VISION:

To create competent & industry ready Electrical Diploma Engineers with professional and social values to meet future challenges.

MISSION:

- To prepare diploma holders through "qualitative competency based education system" to compete with national requirement along with core values.
- To produce dynamic Electrical Engineers to serve the society and industry.
- To develop leadership qualities, communication skills, critical thinking and attitude for lifelong learning.

PROGRAM EDUCATIONAL OBJECTIVES:

PEO1	Apply technical knowledge and skills learned in the field of Electrical Engineering to excel in Professional and/or higher education.
PEO2	To provide students an excellent academic environment and make them aware the needs of Society and Industry to become a successful Professional/Entrepreneur.
PEO3	To engage in lifelong learning, career enhancement to adopt emerging technologies

Course outcomes:-

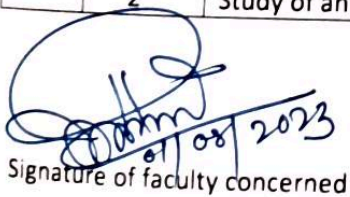
Co1	Operate the ac machines with the ac starter.
Co2	Determine efficiency, regulations of different machines.
Co3	Measure the power of a 3-phase Load by energy meter and wattmeter.
Co4	Understands Starting, Speed control and direction of motion of 3-phase and 1-phase motors.



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LESSON PLAN

Week	Day (Each 3 Period)	Experiments
1 st	1 st	Study of (Manual and Semi automatic) Direct on Line starter, Star-Delta starter, connection and running a 3-phase Induction motor and measurement of starting current
	2 nd	Study of (Manual and Semi automatic) Direct on Line starter, Star-Delta starter, connection and running a 3-phase Induction motor and measurement of starting current
2 nd	1 st	Study of (Manual and Semi automatic) Auto transformer starter and rotor resistance starter connection and running a 3-phase induction motor and measurement of starting current.
	2 nd	Study of (Manual and Semi automatic) Auto transformer starter and rotor resistance starter connection and running a 3-phase induction motor and measurement of starting current.
3 rd	1 st	Study and Practice of connection & Reverse the direction of rotation of Three Phase Induction motor.
	2 nd	Study and Practice of connection & Reverse the direction of rotation of Three Phase Induction motor.
4 th	1 st	Study and Practice of connection & Reverse the direction of rotation of Single Phase Induction motor.
	2 nd	Study and Practice of connection & Reverse the direction of rotation of Single Phase Induction motor.
5 th	1 st	Heat run test of 3-phase transformer.
	2 nd	Heat run test of 3-phase transformer.
6 th	1 st	OC and SC test of alternator and determination of regulation by synchronous impedance method
	2 nd	OC and SC test of alternator and determination of regulation by synchronous impedance method
7 th	1 st	Determination of regulation of alternator by direct loading.
	2 nd	Determination of regulation of alternator by direct loading.
8 th	1 st	Parallel operation of two alternators and study load sharing.
	2 nd	Parallel operation of two alternators and study load sharing.
9 th	1 st	Measurement of power of a 3-phase Load using two wattmeter method and verification of the result using one 3-phase wattmeter
	2 nd	Measurement of power of a 3-phase Load using two wattmeter method and verification of the result using one 3-phase wattmeter
10 th	1 st	Connection of 3-phase energy meter to a 3-phase load.
	2 nd	Connection of 3-phase energy meter to a 3-phase load.
11 th	1 st	Study of an O.C.B.
	2 nd	Study of an O.C.B.
12 th	1 st	Study of induction type over current / reverse power relay.
	2 nd	Study of induction type over current / reverse power relay.
13 th	1 st	Study of Buchholz's relay
	2 nd	Study of Buchholz's relay
14 th	1 st	Study of an earth fault relay
	2 nd	Study of an earth fault relay
15 th	1 st	Study of an earth fault relay
	2 nd	Study of an earth fault relay


Signature of faculty concerned

H.O.D. Electrical