

Government Polytechnic Arwal
(Temporary campus G.P Asthwan, Nalanda).
(Department of Electrical Engineering)

Lesson Plan

Name of the Faculty		RAJA AZAD KUMAR MISHRA			
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Semester/Branch		3rd / Mechanical Engg.			
Subject Name(Subject Code)		ELECTRICAL ENGINEERING (MECHANICAL ENGINEERING) (1625305)			
Lecture/Week		3Periods/Week = 3 hrs per week			
Theory					
Units	Week	Lecture Day	Topics	Methods of Teaching	Remarks
UNIT-01 Introduction to Electrical power supply system	1	1	Introduction to Electrical power supply system Generation, Transmission, Distribution & Utilization.	PPT/Video/Hand written notes(PDF)	
		2		PPT/Video/Hand written notes(PDF)	
		3	AC supply & DC supply	PPT/Video/Hand written notes(PDF)	
UNIT-02 AC Fundamentals	2	1	cycle, frequency, phase, period, max, average,	PPT/Video/Hand written notes(PDF)	
		2	r.m.s. value. Concept of current, voltage	PPT/Video/Hand written notes(PDF)	
		3	power & energy in R, L, & C circuits	PDF/Google form	
Unit 3 Three phase supply:	3	1	Star & Delta circuit,	PPT/Video/Hand written notes(PDF)	
		2	Line & Phase relationship	PPT/Video/Hand written notes(PDF)	
		3	power equation.	PPT/Video/Hand written notes(PDF)	
Unit 4 Measuring Instruments	4	1	Introduction to construction, operation and use of AC & DC ammeter voltmeter,	PPT/Video/Hand written notes(PDF)	
		2	Electrodynamic Wattmeter	PPT/Video/Hand written notes(PDF)	
		3	energy meter & digital multimeter.	PPT/Video/Hand written notes(PDF)	

Unit 5 DC Motor:	5	1	, Clip on meter.	PPT/Video/Hand written notes(PDF)	
		2	Construction	PPT/Video/Hand written notes(PDF)	
		3	principle of operation	PDF/Google form	
	6	1	Speed torque characteristics. Types,	PPT/Video/Hand written notes(PDF)	
		2	specifications & ratings and applications.	PPT/Video/Hand written notes(PDF)	
		3	& ratings and applications.	PPT/Video/Hand written notes(PDF)	
7	1	Types of insulation used.	PPT/Video/Hand written notes(PDF)		
	2	: Construction and principle of operation	PPT/Video/Hand written notes(PDF)		
	3	EMF equation and transformation ratio	PPT/Video/Hand written notes(PDF)		
Unit 6 A. C .Machines ,AC motor: Alternator, Synchronous Motor	8	1	Load test, efficiency and regulation.	PPT/Video/Hand written notes(PDF)	
		2	Specifications & rating.	PPT/Video/Hand written notes(PDF)	
		3	Auto transformer	PPT/Video/Hand written notes(PDF)	
		1	& 3 phase transformer concept only.	PDF/Google form	
	9	2	Applications of transformers	PPT/Video/Hand written notes(PDF)	
		3	Construction and principle of operation of 3 phase induction motor	PPT/Video/Hand written notes(PDF)	
		1	Speed torque characteristics,	PPT/Video/Hand written notes(PDF)	
	10	2	slip, speed control (VFD),	PPT/Video/Hand written notes(PDF)	
		3	reversal of rotation,	Video/ Hand written notes(PDF)	

	11	1	starters. Single phase motor, universal motor,	PPT/Video/Hand written notes(PDF)	
		2	stepper motor & servo motor. Motor specification & ratings	PDF/Google form	
		3	. Applications of these motors in various fields. Testing of motors.	PPT/Video/Hand written notes(PDF)	
	12	1	: Construction, principle of operation & applications. Self and separate excitation.	PPT/Video/Hand written notes(PDF)	
		2	. Construction, principle of operation, methods of starting & applications	PPT/Video/Hand written notes(PDF)	
		3	Classification of drives,	PPT/Video/Hand written notes(PDF)	
UNIT-07 Utilisation of Electrical Energy Industrial applications, Electric heating & welding, Electrometallurgical & Electro Agro Systems:::	13	1	factors for selection of motor for different drives, Enclosures & Mountings	PPT/Video/Hand written notes(PDF)	
		2	Working principle & types selection of system	PPT/Video/Hand written notes(PDF)	
		3	specifications & rating	PPT/Video/Hand written notes(PDF)	
	14	1	Concept & principle used in electroplating	PDF/Google form	
UNIT-08 Electric wiring & Illumination:	15	2	Electrical machines used in electro-agro systems (irrigation pumps)	PPT/Video/Hand written notes(PDF)	
		3	. Simple Electric Installations with 2 sockets ,2 fans, 2 lamps,	PPT/Video/Hand written notes(PDF)	
		1	fuses.	PPT/Video/Hand written notes(PDF)	
	2	Introduction to different accessories like MCCB, ELCB	PPT/Video/Hand written notes(PDF)		
UNIT-09 Electric safety	16	3	wires & cables Different types of lamps their specifications,	PPT/Video/Hand written notes(PDF)	
		1	tariff & power conservation	PPT/Video/Hand written notes(PDF)	
		2	necessity of Earthing, types safety tools,	PPT/Video/Hand written notes(PDF)	
	17	3	s, first aid measures, types of tariff	PDF/Google form	
		1	pf improvement only methods, energy conservation & audit,		
		2	fire extinguishing methods adopted in electrical engineering		
	Aprox	50			
	Total	49			

