GOVERNMENT CO-ED POLYTECHNIC,JAGDALPUR BASTAR(C.G)

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

Session: - **July - Dec 2024**
Semester: - **3rd**
Session start date as per University Calendar: - **02/09/2024**
Course Name: - **DC Machines & Transformers**
Course Code: - **2024373(024)**
Name of Subject teacher:- **AJAY KUMAR SWARNKAR**

Unit-1 Basics of DC Machines				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
1.1 Law of Conservation of Energy	2	**1.1** Illustrate the principle of lector mechanical energy conversion using BLV method.	2	
1.2 Electromagnetic Induction, Faraday's Laws of electromagnetic induction, Lenz's Law-Concept and applications	2	**1.2** Identification of parts of a DC machine by dismantling the cut section model.	2	
1.3 Fleming's right and left hand rule	1	**1.3** Measure Resistance of a series, shunt field winding and armature winding of DC compound machine and comment on their relatives resistances	2	
1.4 DC machines construction, its parts	2			
1.5 EMF equations: EMF, Back EMF	2			

Number of periods planned (CI + LI) : 15
Number of periods actually taken :

Unit 2 DC generators				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
2.1 Working and application of DC generators	1	**2.1** Perform load test on DC shunt generator.	2	
2.2 EMF equation	1			
2.3 Performance of DC generators- Efficiency, losses	2	**2.2** Perform a test to analyse the effect of speed and field flux on generated voltage of DC shunt generator.	2	
2.4 Condition for building up EMF in self-excited generator	1	**2.3** Perform load test on DC series generator.	2	
2.5 Internal and External Characteristics	1			
2.6 Concept of armature reaction and its effects	2			
2.7 Concept of commutation	1			
Number of periods planned (CI + LI) : 15 **Number of periods actually taken :**				

Unit 3 DC MOTOR				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
3.1 Working and application different types of DC motors (DC series and DC Shunt motors)	2	**3.1** Start a DC shunt motor and reverse its direction of rotation.	2	
3.2 EMF equation, Back EMF, Torque speed, Output power, losses and efficiency	2	**3.2** Control the speed of DC shunt motor by flux and armature control method.	2	
3.3 Need of starters and types (two and three point only)	1	**3.3** Perform load test on DC shunt motor and plot its performance characteristics.	2	
3.4 Compare the performance of series and shunt.	1	**3.4** Perform load test on DC series motor and plot its performance characteristics.	2	
3.5 Speed control methods of DC Shunt and series motor	1	**3.5** Perform brake test on DC shunt motor and plot its performance characteristics.	2	
Number of periods planned (CI + LI) : 17 **Number of periods actually taken :**				

Unit 4 Single Phase Transformer				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
4.1 working principle, construction, types- shell and core	1	**4.1** Perform test to determine voltage and current ratio of a given single phase transformer.	1	
4.2 Emf equation, Voltage and current transformation ratio. Equivalent circuit parameters, phasor diagram of practical transformer under no load and lagging load conditions in brief	1	**4.2** Perform polarity test on single phase transformer.	1	
		4.3 Perform Open circuit and short circuit test on a single phase transformer and determine the equivalent circuit parameters.	1	
4.3 Losses: Iron loss-hysteresis and eddy current, copper loss	1	**4.4** Perform direct load test to determine efficiency and regulation of a single phase transformer.	1	
4.4 Efficiency, Condition for maximum efficiency and voltage regulation for lagging load only (No derivation)	1	**4.5** Verify the use of single phase auto transformer as a step up and step down transformer.	1	
4.5 OC & SC test	1			
4.6 Concept of All Day Efficiency and its significance	1			
4.7 Parallel operation of two single phase transformers, essential and desirable conditions	1			
4.8 Construction and application of autotransformer.	1			

Number of periods planned (CI + LI) : 15
Number of periods actually taken :

Unit 5 Poly phase transformer				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
5.1 Formulation of three phase transformation by three single phase transformers	1	**5.1** Perform parallel operation of two three phase transformers	2	
5.2 3 phase star delta connection	1			

5.3 Constructional Details: Accessories of 3 phase transformers	1			
5.4 Parallel operation of two three phase transformers	1			
5.5 Cooling methods of power transformers	1			
5.6 Maintenance procedures of different types of 3 phase transformers	1			

Number of periods planned (CI + LI) : 08
Number of periods actually taken :

Number of Total periods planned : 68
Number of Total periods actually taken :

Subject Teacher : AJAY KUMAR SWARNKAR

(Name and Signature)

HOD
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# GOVERNMENT CO-ED POLYTECHNIC,JAGDALPUR
BASTAR(C.G)

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

Session: - **Nov-Dec 2024**
Semester: - **3rd**
Session start date as per University Calendar: - 02/09/2024
Course Name: - **Electrical Circuit**
Course Code: - **2024371(024)**
Name of Subject teacher:- **ONKAR DEWANGAN**

Unit -1 Principles of Electrical Circuit				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
1.1 Classification Of Electrical Elements: Active & Passive, Unilateral and bilateral, Independent and Dependent Source	1	1.1 Identify the commonly used components and materials in an electric circuit. 1.2 Observe Voltage and Current in an incandescent lamp and comment on your observation. 1.3 Measure Voltage and current in a given linear electric circuit.	2	
1.2 Passive Element/Components(R,L and C) : Steady State behavior in DC Circuit	2			
1.3 Simple Series and Parallel Resistive Circuit	1	1.4 Measure current and voltage in a particular branch of the given electrical circuit using kirchhoff's Current Law. **1.5** Measure voltage Drop in a closed loop of the given electrical circuit using kirchhoff's Voltage Law **1.6** Determine the current and voltage in a given electrical Circuit.	2	
1.4 Ohm's Law, Kirchhoff's Voltage and Current Law	2			
1.5 Numerical	2			
1.6 Source Transformation	1			
1.7 Mesh & Nodal Analysis	2			

Number of periods planned (CI + LI) : 15
Number of periods actually taken :

Unit – 2 Circuit Analysis and Network Theorems

Class Room Instruction (CI)	No. of Periods	Laboratory Instruction (LI)	No. of Periods	Remark
2.1 Star Delta Transformation of Passive Network	1	**2.1** Connect star connected resistance to its equivalent Delta connection and determine the equivalent resistance.		
2.2 Superposition Theorem	1	2.2 Connect Delta connected resistance to its equivalent Star connection and determine the equivalent resistance.	2	
2.3 Thevenin's Theorem	1	2.3 Measure Current through and voltage across a circuit element of a given electric Circuit and verify applying mesh and nodal Analysis.		
2.4 Norton's Theorem	1			
2.5 Maximum Power Transfer Theorem	1			
2.6 Application of Theorem to Solve DC Network	6			
		2.4 Measure current in a branch of the given electrical circuit having two or more input sources using Super position theorem.	2	
		2.5 Measure load current in the load resistance using Thevenin's theorem in a given circuit.		
		2.6 Measure load current in the load resistance using Norton's theorem in a given circuit.		
		2.7 Determine the maximum power and load resistance for which circuit has maximum power using maximum power transfer theorem.		

Number of periods planned (CI + LI) : 15
Number of periods actually taken :

Unit – 3 Single Phase AC Circuit

Class Room Instruction (CI)	No. of Periods	Laboratory Instruction (LI)	No. of Periods	Remark
3.1 Generation of an alternating EMF	1	3.1 Measure peak value, RMS value, Period and frequency of a sinusoidal voltage using CRO.	2	
3.2 AC circuit quantities: Peak value, RMS Value and Average value of a Sinusoidal voltage waveform		3.2 Observe the behavior of current and voltage wave form in CRO for Resistive load and comment on it.		
3.3 J-operator	1	**3.3** Observe the behavior of current and voltage wave form in CRO for R-L Load and comment on it.		
3.4 AC Series and parallel circuits, Phasor diagrams and impedance triangle	7			
3.5 Active, reactive, apparent power and power factor in RLC circuit.		3.4 Measure voltage, current, power and power factor in a series RLC circuit and draw phasor diagram.	2	
3.6 Vector representation of an alternating quantity, addition, subtraction, multiplication and division.	2	**3.5** Measure voltage, current, power and power factor in a RLC parallel circuit and draw phasor diagram. **3.6** Determine the power and power factor in AC circuit using three ammeter methods.		

Number of periods planned (CI + LI) : 15
Number of periods actually taken :

Unit – 4 Series and Parallel resonance

Class Room Instruction (CI)	No. of Periods	Laboratory Instruction (LI)	No. of Periods	Remark
4.1 Definition of resonance and its importance in electrical circuit	1	**4.1** Determine the current at series Resonance. **4.2** Observe the variation of power factor for varying inductance for a series RLC circuit.	1	
4.2 Series and Parallel resonance: Derivation of Resonance frequency and simple numerical.	6			
4.3 Definition: Quality factor, bandwidth and selectivity in series RLC circuit.(No derivations)	1	**4.3** Determine the current at parallel resonance. **4.4** Determine the impedance of a Circuit during parallel resonance.	1	
4.4 Effect on current and power factor in series resonance circuit.	2			

Number of periods planned (CI + LI) : 12
Number of periods actually taken :

Unit – 5 Three phase A C circuits				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
5.1 Generation of three phase voltage	1	**5.1** Measure the line/phase current, line voltage/phase voltage for the given three phase load connected to a three phase source.	1	
5.2 Three phase three wire source and three phase four wire source, Phase sequence and phasor diagram	2			
5.3 Connection of three phase winding in Star/Delta	2	5.2 Measure neutral displacement voltage of the given three phase Unbalanced load connected to a three phase source Measure three phase power for the given star connected load.	1	
5.4 Line and phase electrical quantity relationship: Star/Delta	4			
5.5 Three phase load: Balanced /Unbalanced	1			
5.6 Measurement of power in three phase circuits	4	5.3 Measure three phase power for the given star/delta connected load.	2	

Number of periods planned (CI + LI) : 18
Number of periods actually taken :

Number of Total periods planned : 75
Number of Total periods actually taken :
Subject Teacher : ONKAR DEWANGAN

(Name and Signature)
Onkar Dewangan

HOD
(Department of Electrical Engineering)

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GOVERNMENT CO-ED POLYTECHNIC,JAGDALPUR BASTAR(C.G)

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

Session: - **July - Dec 2024**
Semester: - **3rd**
Session start date as per University Calendar: -
Course Name: - **Basic Electronics**
Course Code: - **2025375(025)**
Name of Subject teacher:- **ARVIND DINKAR PATIL**

Unit -1 Use semiconductor diodes in various electronics circuits.				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
1.1 PN Junction diode: working, formation of depletion layer, construction symbol and equivalent circuits of pn junction diode.	3	**1.1** Test the performance of pn-junction diode in the forward and reverse biased condition. **1.2** Test the performance of the given LED diode.	4	
1.2 Barrier potential voltage, forward and reverse biasing, V-I characteristics of diode.	2			
1.3 Diode current equation, Static and Dynamic resistance, Diode capacitance.	3	**1.3** Test the performance of the given Photo Diode.	2	
1.4 Symbol, working and characteristic of other diodes like: LED, Photodiode, Varacter diode	3			

Number of periods planned (CI + LI) : 17
Number of periods actually taken :

Unit – 2 Test the performance of different types of rectifiers and filters.				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**

ed for rectification, rectifier ameters, PIV, Ripple factor, efficiency, Peak Inverse Voltage(PIV), Transformer utilization factor(TUF) of rectifiers.	2	**2.1** Test the input and output waveform of Half Wave Rectifier a) without filter b) with filter **2.2** Test the input and output waveform of Full Wave Center tapped Rectifier a) without filter b) with filter **2.3** Test the input and output waveform of Full Wave Bridge Rectifier a) without filter b) with filter .	4	
2.2 Types of rectifier: Half Wave Rectifier, Full Wave Rectifier, Centre Taped and Bridge type full wave rectifier.	4			
2.3 Filter Circuits; L- filter, C-filter, LC-filter, CLC-filter	3			

Number of periods planned (CI + LI) : 13
Number of periods actually taken :

Unit – 3 Test function of Zener diode, clipper and clamper circuit

Class Room Instruction (CI)	No. of Periods	Laboratory Instruction (LI)	No. of Periods	Remark
3.1 Zener diode: working, construction and equivalent circuits of zener diode.	2	**3.1** Test the performance of zener diode. **3.2** Test the output of the given Zener voltage regulator. **3.3** Test the output waveform of a) Positive Clipper b) Negative Clipper **3.4** Test the output waveform of a) Positive Clamper b) Negative Clamper	4	
3.2 Zener and Avalanche breakdown phenomenon, zener diode as voltage regulator	2			
3.3 Clipper: Function of clipper circuit, types of clipper: positive and negative clipper circuits	3			
3.4 Clamper: Function of clamper circuit, types of clamper: positive and negative clamper circuits	3			

Number of periods planned (CI + LI) : 14
Number of periods actually taken :

Unit – 4 Test the working of Bipolar Junction Transistor(BJT) and FET

Class Room Instruction (CI)	No. of Periods	Laboratory Instruction (LI)	No. of Periods	Remark
4.1 BJT: Working, types of BJT: NPN and PNP, construction and operation of NPN and PNP transistor.	2	**4.1** Determine the current gain of CE configuration with the help of input and output, characteristics of CE configuration.	2	
4.2 Modes of operation: active, saturation and cut-off, current amplification factor ß and α	2	**4.2** Determine the current gain of CB configuration with the help of input and output, characteristics of CB configuration.		
4.3 Transistor Biasing: need for biasing, types of biasing, thermal runaway	1	**4.3** Determine the current gain of CC configuration with the help of input and output, characteristics of CC configuration. . **4.4** Build and test the operation of BJT as a switch	2	
4.4 Transistor configurations: Common Emitter(CE), Common Base(CB) and Common Collector(CC) configuration circuit, working and input and output characteristics	4	**4.5** Bias the given NPN transistor in the active region by voltage divider biasing method. **4.6** Test the performance of the given FET	1	
4.5 Field Effect Transistor(FET): Working, construction, input and output characteristics, drain current, pinch-off voltage	2			

Number of periods planned (CI + LI) : 16
Number of periods actually taken :

Unit – 5 Use OP-AMP for various applications

Class Room Instruction (CI)	No. of Periods	Laboratory Instruction (LI)	No. of Periods	Remark
5.1 Basics of differential amplifier, working principle, input and output characteristics	2	**5.1** Test the performance of the given Op-Amp IC in inverting mode.	2	

...s of Op-Amp: OP-AMPIC-...unctional block diagram, ...al ground, configurations of ...orking: inverting and non-inverting, parameters: I/O, resistance, gain, slew rate, bamndwidth	4	**5.2** Build and test OP-AMP based summing amplifier.		
5.3 Applications of op-amp: Summing, multiplier and divider amplifier, integrator and differentiator, Log and Anti-log amplifier.	4	**5.3** Test the output of non-inverting amplifier. **5.4** Test the performance of the given Op-Amp based integrator and differentiator circuit **5.5** Build and test the performance of Instrumentation amplifier.	3	

Number of periods planned (CI + LI) : 15
Number of periods actually taken :

Number of Total periods planned : 75
Number of Total periods actually taken :
Subject Teacher : ARVIND DINKAR PATIL

(Name and Signature)

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DEPARTMENT OF ELECTRICAL ENGINEERING

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LESSON PLAN

Name of the faculty :- Mr. Bholenath Tamboli
Semester :- 3rd
Subject :- **Electrical and Electronic Measurements (2024372(024))**
Lesson Plan Duration (CL+LI+SL) :- 75 Hrs (From Sept. To Dec. 2024)

S.No.	No. Of Periods	Topic Name	Practical	Remarks
	(Approx.Hrs: CI+ LI =15)	**Unit-1.0 Basics of Measurements and Measuring Instruments**		
1	2	Block Diagram of measuring systems, requirements	1. Selection of indicating, Recording and Integrating Instruments the laboratory and writing their specifications. 2. Demonstration of construction and working principle of moving iron and moving coil type instruments. 3. Demonstration of construction and working principle of Induction type and dynamometer type instruments.	
2	2	Production of deflecting, controlling and damping torques		
3	1	Accuracy, precision, Error, Resolution, Sensitivity and tolerance: Only Definition		
4	2	Indicating , Recording and Integrating Instruments, Typical uses		
5	5	Electromechanical measuring instruments: General description including working principle, construction applications, merits and demerits of- PMMC, Moving iron, Induction, Dynamometers type instruments		
	(CL-12,LI-3)			
	(Approx. Hrs: CI+ LI =18)	**Unit-2.0 Electromechanical measuring Instruments**		
1	1	Principle of current and voltage measurement	1. Measurement of DC, AC voltage and current using analogue meter. 2. Conversion of a given galvanometer to DC/AC current-meter. 3. Conversion of a given galvanometer to DC/AC Voltmeter. 4. Measurement of high value of current and voltages using shunt resistance and multiplier. 5.Measurement of high value of current and voltages using Current and Potential Transformer. 6.Measurement of single and three phase power using wattmeter 7. Measurement of three phase power using two and three wattmeter method 8. Calibration of ammeter, voltmeter with a standard meter. 9. Calibration of wattmeter with a standard wattmeter. 10.Demonstration of working of a digital energy meter	
2	1	Galvanometer, Ammeter, Voltmeter		
3	2	Range Extension of ammeter and voltmeter using Shunts and Multipliers, Current Transformer (CT) and Potential Transformer (PT)		
4	1	Principle of Power and energy Measurement, effect of power factor		
5	2	Measurement of single and three phase power using wattmeter		
6	2	Measurement of single phase energy using watt-hour meter		
7	2	Calibration of ammeters, voltmeters, wattmeter's and energy meters		
8	2	Working of Digital energy meter, Block diagram		

	(CL-13,LI-5)			
	(Approx. Hrs: CI+ LI =17)	**Unit-3.0 Measurements using Bridges/meters**		
1	1	Classification of resistances-Low, Medium, High	1. Measurement of low Resistance using Kelvin's double bridge 2. Measurement of medium Resistance using wheat stone bridge. 3. Measurement of insulation resistance using Megger 4. Measurement of earth resistance using Earth tester 5. Measurement of inductance using Maxwell's Bridge 6. Measurement of capacitance using Schering's Bridge	
2		Concept of bridge, balancing		
3	2	Low resistance Measurement –Kelvin double bridge		
4	2	Medium resistance measurement Wheatstone bridge		
5	2	High resistance measurement using Megger.		
6	2	Earth resistance measurement using earth tester		
7	1	Inductance\Measurement using Maxwell's Bridge		
8	1	Capacitance Measurement: Schering Bridge		
	(CL-11,LI-6)			
	(Approx. Hrs: CI+ LI =15)	**Unit-4.0 Electronic instruments**		
1	1	Essentials and advantages of electronic instruments	1. Measurement of voltage, current, resistance using Digital Multi meter 2. Continuity test using digital Multi meter 3. Measurement of resistance Inductance and Capacitance using LCR meters. 4. Measure quality Factor of given Inductor and Capacitor using LCR Q Meter 5. Demonstration of various analog/digital recorders.	
2	1	True RMS reading voltmeter.		
3	2	Digital Voltmeters(DVM) and its types		
4	2	Digital multi meters		
5	2	Digital LCR meter- Block diagram, Working principle		
6	2	Analog/Digital recorders, Graphic recorder, Strip Chart recorder, XY recorder (Only block diagram)		
	(CL-10,LI-5)			
	(Approx. Hrs: CI+LI = 10)	**Unit-5.0Cathode Ray Oscilloscope and Digital Storage Oscilloscope**		
1	5	CRO-basic clock diagram, Cathode Ray Tube, Electrostatic and magnetic deflection, X & Y Amplifiers, Controls on CRO and their functions, Lissajous pattern	1. Measurement of amplitude, Frequency, time period and Phase difference of different signals generated by function generator using CRO. 2. Measurement of Unknown frequency, phase angle using Lissajous patterns. 3. Demonstration of Digital Storage Oscilloscope.	
2	2	Digital Storage Oscilloscope- Basic block diagram and working		
	(CL-7,LI-3)			

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GOVT. CO-ED POLYTECHNIC JAGDALPUR
ADAWAL, DIST - BASTAR (C.G.) 494001
DEPARTMENT OF ELECTRICAL ENGINEERING
LESSON PLAN **SESSION-(NOV-DEC) 2024**

NAME OF FACULTY : TEJESHVARYA
SUBJECT : ELECTRICAL DRAWING AND CAD
SUBJECT CODE : 2024374(024)
SEMESTER : DIPLOMA III SEM

TEXT BOOKS	**BASIC ENGINEERING DRAWING : M.L.ANWANI**
	ENGINEERING MECHANICS: RAMAMRUTHAM, S.
REF. BOOKS	**ELECTRICAL ENGINEERING DRAWING:BHATTACHARYA,S.K.**
	COMPUTER AIDED ELECTRICAL DRAWING :B.S.NANDAN

Serial N0.	UNIT	TOPIC TO BE COVERED	Expected No of Lectures	REMARKS
		UNIT-1 SYMBOLS AND CODES	**4**	
1	1	ISI Symbols in electrical engineering	1	
2		Conventions for circuit	1	
3		Schematic repesentation of electrical components	1	
4		Schematic representation of electronic components	1	
		UNIT-2 INSTALLATION,MOUNTING AND LAYOUT OF POWER AND SAFETY EQUIPMENT	**5**	
5	2	Different types of mounting for transformer	1	
6		Mountings for dynamic equipment	1	
7		substation layout with circuit breaker,isolators	1	
8		substation layout with protective devicesof transformers		
9		Plate earthing	1	
10		Pipe earthing		
11		Extension of range using shunt,multiplier	1	
12		Extension of range using CT,PT		
		UNIT-3 CONSTRUCTIONAL FEATURES OF ELECTRICAL MACHINES	**6**	
13	3	Parts of transformer	1	
14		DC Machines:pole,pole shoe	1	
15		simlex lap and wave winding	1	
16		Alternators:salient rotor		
17		Alternators: cylindrical rotor	1	
18		Induction motor:squirrel cage rotor	1	
19		Induction motor: slip ring rotor		
20		AC Machine winding: full and short pitch winding	1	
		UNIT -4 DOMESTIC AND COMMERCIAL WIRING FOR LV EQUIPMENT	**7**	
21	4	Types and internal circuit diagram	1	
22		control wiring of godown		
23		staircase wiring	1	
24		control wiring of street light	1	
25		control wiring for houses		
26		wiring of energy meters for domestic loads	1	
27		wiring of energy meters for commercial loads		
28		internal wiring of refrigerators	1	
29		internal wiring of air conditioners		
30		starter,4-point starter	1	
31		wiring diagram of submersible and centrifugal pumps	1	
		UNIT-5 COMPUTER AIDED ELECTRICAL DRAWING (CAD)	**11**	
32	5	Draw command , edit command,coordinate entry ,osnap	1	
33		layers , dimensioning,text in a drawing ,ortho command ,zoom command , plot command	1	
34		layouts of domestic , commercial and industrial wiring	1	
35		cross sectional view of : fuse and cables	1	
36		DC motors and their parts	1	
37		single phase transformer	1	
38		power transformer	1	
39		Induction motor	1	
40		insulators,circuit breakers,lightning arresters	1	
41		11kv pole mounted substation	1	
42		single line diagram of 11/33 kv substation.	1	

TOTAL CLASSES SCHEDULED : 33

Serial No	UNIT	TOPIC TO BE COVERED	Expected No of Lectures	REMARKS
TOTAL CLASSES TAKEN:			Signature of Faculty	HOD Signature

Tejeshvaaya

GOVERNMENT CO-ED POLYTECHNIC,JAGDALPUR BASTAR(C.G)

DEPARTMENT OF ELECTRICAL ENGINEERING

LESSON PLAN

Session: - **July - Dec 2024**
Semester: - **3rd**
Session start date as per University Calendar: - 02/**09/2024**
Course Name: - **Electrical Workshop**
Course Code: - **2024365(024)**
Name of Subject teacher:- **AJAY KUMAR SWARNKAR**

Unit-1

Class Room Instruction (CI)	No. of Periods	Laboratory Instruction (LI)	No. of Periods	Remark
		1.1 Identify different type of measuring tools available in workshop.	1	
		1.2 Use hand tools in a given situation.	1	
		1.3 Measure the wire gauge size for the given application	1	
		1.4 Identify different type of meters used for measurement of voltage, current and energy consumed	1	

Number of periods planned (CI + LI) : 04
Number of periods actually taken :

Unit 2

Class Room Instruction (CI)	No. of Periods	Laboratory Instruction (LI)	No. of Periods	Remark
		2.1 Identify cables of different current ratings and voltage grade.	1	
		2.2 Identify the accessories /materials used for house wiring	1	
		2.3 Identify the different types of illumination sources and their control gear	1	
		2.4 Identify the different types of switches and circuit breakers used for control of low power loads	1	

Number of periods planned (CI + LI) : 04
Number of periods actually taken :

Unit 3				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
		3.1 Perform wiring connection on a switch board	1	
		3.2 Perform the PVC conduit wiring for control of a given load.	1	
		3.3 Prepare switch board for control of a given load.	1	
		3.4 Connect a given load from the main supply using Circuit breakers	1	
		3.5 Prepare series testing board	2	

Number of periods planned (CI + LI) : 06
Number of periods actually taken :

Unit 4 Single Phase Transformer				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
		4.1 Prepare wiring installation on a board showing control of one lamp, one fan and one socket from one switch board in PVC surface conduit wiring system	1	
		4.2 Prepare the wiring installation for control of two Lamps by Series - Parallel connection using one 1-way switch &2-way switches	1	
		4.3 Prepare the wiring installation for control and practice of a given lighting load.	1	
		4.4 Prepare the wiring installation using sub circuits for control of a given heating and illumination load through energy meters, switches, cut outs/ breakers	1	
		4.5 Measure voltage and current for single and three phase Supply using multimeter and clip on meter.	1	
		4.6 Perform continuity and polarity test of given electrical wiring component using Multimeter.	1	
		4.7 Test wiring installation using megger	2	

Number of periods planned (CI + LI) : 8
Number of periods actually taken :

Unit 5				
Class Room Instruction (CI)	**No. of Periods**	**Laboratory Instruction (LI)**	**No. of Periods**	**Remark**
		5.1 Identify Safety Signs and symbols	1	
		5.2 Conduct mock artificial respiration and first Aid exercises to learn about safety procedures of first Aid in case of electrical hazards.	1	
		5.3 Identify different types of fire extinguishers	1	
		5.4 Use Fire extinguisher to extinguish the fire in a given situation.	1	

Number of periods planned (CI + LI) : 04
Number of periods actually taken :

Number of Total periods planned : 26
Number of Total periods actually taken :

Subject Teacher : AJAY KUMAR SWARNKAR

(Name and Signature)

HOD
(Department of Electrical Engineering)

Principal
Govt Co-ed Polytechnic , Bastar