

**Specimen of lesson Plan**

**Discipline** ELECTRICAL ENGG.  
**Semester** 4TH  
**Subject** ELECTRICAL ENGINEERING DESIGN & DRAWING-II

**Lesson Plan Duration** 15 weeks

**Work Load (Lecture/Practical) per week (in periods): Lectures- Nil, Practicals- 06**

Week	Practical Periods	Drawings Topic (including test)
1st	1st	Discussion of Learning Outcomes, Introduction of Electrical Engg. Design. & Drawing.
	2nd	Unit 1 : (Contractor Control circuits) - To make the drawing sheet (Schematic diagram and power wiring diagram of DOL starting of 3-phase induction motor.
	3rd	
	4th	
	5th	
	6th	
2nd	7th	Unit 1 : (Contractor Control circuits) - To make the drawing sheet (Schematic diagram and power wiring diagram of Forwarding/ reversing of a 3-phase induction motor.
	8th	
	9th	
	10th	Revision of previous making drawing sheets for left out students if any and checking of making drawing sheets
	11th	
	12th	
3rd	13th	Unit 1 : (Contractor Control circuits) - To make the drawing sheet (Shemetic diagram and power wiring diagram of Two speed control of 3-phase induction motor.
	14th	
	15th	
	16th	Unit 1 : (Contractor Control circuits) - To make the drawing sheet (Shemetic diagram and power wiring diagram of Limit switch control of a 3-phase induction motor.
	17th	
	18th	
4th	19th	Unit 1 : (Contractor Control circuits) - To make the drawing sheet (Shemetic diagram and power wiring diagram of Sequential operating of two motors using time delay relay.
	20th	
	21st	
	22nd	Unit 1 : (Contractor Control circuits) - To make the drawing sheet (Shemetic diagram and power wiring diagram of Manually generated star delta starter for 3-phase induction motor.
	23rd	
	24th	
5th	25th	Unit 1 : (Contractor Control circuits) - To make the drawing sheet (Shemetic diagram and power wiring diagram of Automatic star delta starter for 3-phase induction motor.
	26th	
	27th	
	28th	Class test for preparation of 1st sessional exam and checking of previous drawing sheets.
	29th	
	30th	
6th	31st	Unit 2 : (Earthing) - Different types of earthing : To make the drawing sheet of plate earthing.
	32nd	
	33rd	
	34th	

	35th	
	36th	
7th	37th	
	38th	
	39th	Unit 2 : (Earthing) - To make the drawing sheet of Pipe earthing.
	40th	
	41st	Unit 2 : (Earthing) - Revision of previous making drawing sheets and check the making drawing sheets.
	42nd	
8th	43rd	
	44th	Unit 2 : (Earthing) - Procedure of earthing, test of materials required and costing and method of reducing earth resistance.
	45th	
	46th	
	47th	Unit 2 : (Earthing) - Relevant IS specifications of earth electrode for earthing a transformer, a high building.
	48th	
9th	49th	
	50th	
	51st	Unit 2 : (Earthing) - Earthing layout of distribution transformer.
	52nd	
	53rd	Unit 2 : (Earthing) - Substation earthing layout and earthing materials and key diagram of 11KV sub station.
	54th	
10th	55th	
	56th	
	57th	Unit 2 : (Earthing) - Key diagram of 33KV, 66KV sub stations.
	58th	
	59th	
	60th	Unit 2 : (Earthing) - Key diagram of 132KV sub station and preparation of 2 <sup>nd</sup> sessional exam.
11th	61st	
	62nd	
	63rd	Unit 3 : schematic diagram of lighting system of Conference Room
	64th	
	65th	
	66th	Unit 3 : schematic diagram of lighting system of theatre/sports stadium
12th	67th	
	68th	
	69th	Unit 3 : checking of sheets
	70th	
	71st	
	72nd	Unit 3 : revision and checking of sheets
13th	73rd	
	74th	
	75th	Unit 3 : timers circuits using CAD
	76th	
	77th	
	78th	Unit 3 : ABOVE.

14th	79th	Unit 3 : Repeat	
	80th		
	81st		
	82nd		Unit 3 : Discussion of Previous year hsbte question paper
	83rd		
	84th		
15th	85th	Preparation of Illrd sessional exam and checking of previous drawing sheets (If any)	
	86th		
	87th		
	88th	Revision of all above making drawing sheets and preparation of final Exam.	
	89th		
	90th		

**Government Polytechnic Nanakpur(Panchkula)**  
**Electrical Engg.Department**  
**Lesson Plan**  
**Name of Subject-E.M-I(Theory and Practical)**  
**Semester-4<sup>th</sup>(04 T+02Pr)**  
**15 weeks**

Theory		Practical	
Lecture Day	Topic(including assignment/test)	Practical day	Topic
1 <sup>st</sup> (Unit-1)	<ul style="list-style-type: none"> <li>Will Discuss Learning outcomes of Electrical Machine subject.</li> </ul>	1 <sup>st</sup>	<ul style="list-style-type: none"> <li>Introduction of EM lab various specifications of Motors, safety precautions etc.</li> </ul>
2 <sup>st</sup>	<ul style="list-style-type: none"> <li>Introduction to Electrical Machines</li> </ul>		
	<ul style="list-style-type: none"> <li>Definition of motor and generator, concept of torque</li> </ul>		
3 <sup>rd</sup>	<ul style="list-style-type: none"> <li>Electro-magnetically induced emf.</li> </ul>		
4 <sup>th</sup>	<ul style="list-style-type: none"> <li>Torque development due to alignment of two fields and the concept of torque angle</li> </ul>	2 <sup>nd</sup>	Measurement of the angular displacement of the rotor of a slip-ring induction motor on application of DC to stator of motor winding in sequence and simultaneously to each phase of rotor winding
5 <sup>th</sup>	<ul style="list-style-type: none"> <li>Elementary concept of an electrical machine</li> </ul>		
6 <sup>th</sup>	<ul style="list-style-type: none"> <li>Comparison of generator and motor</li> </ul>		
7 <sup>th</sup> (Unit-II)	<ul style="list-style-type: none"> <li>Introduction of DC machines, its types</li> </ul>		
8 <sup>th</sup>	<ul style="list-style-type: none"> <li>Construction of DC machines</li> </ul>	3 <sup>rd</sup>	Speed control of dc shunt motor
9 <sup>th</sup>	<ul style="list-style-type: none"> <li>Armature winding and its types</li> </ul>		
10 <sup>th</sup>	<ul style="list-style-type: none"> <li>Commutator and its function for generator and motor action</li> </ul>		
11 <sup>th</sup>	<ul style="list-style-type: none"> <li>Factors determining induced EMF</li> </ul>		
12 <sup>th</sup>	<ul style="list-style-type: none"> <li>Factors determining electromagnetic torque</li> </ul>	4 <sup>th</sup>	Evaluation of above practical's.
13 <sup>th</sup>	<ul style="list-style-type: none"> <li>DC generator and its types</li> </ul>		
14 <sup>th</sup>	<ul style="list-style-type: none"> <li>Voltage buildup in DC gen.</li> </ul>		

15 <sup>th</sup>	<ul style="list-style-type: none"> <li>Back emf, its significance, relationship between terminal voltage and back emf</li> </ul>		
16 <sup>th</sup>	<ul style="list-style-type: none"> <li>Armature reaction</li> </ul>		
17 <sup>th</sup>	<ul style="list-style-type: none"> <li>Commutation methods to improve commutation</li> </ul>	5 <sup>th</sup>	Study of dc series motor with starter (to operate the motor on no load for a moment)
18 <sup>th</sup>	<ul style="list-style-type: none"> <li>Types of DC Motors, its performance, Characteristic of DC motors</li> </ul>		
19 <sup>th</sup>	<ul style="list-style-type: none"> <li>Speed control of DC motors, starters for DC motors (3 point and 4 point)</li> </ul>		
20 <sup>th</sup>	<ul style="list-style-type: none"> <li>Application of DC Motors, losses in DC machines</li> </ul>		
21 <sup>th</sup>	<ul style="list-style-type: none"> <li>Swinburne's test to find out losses</li> </ul>	6 <sup>th</sup>	Study of 3 point starter for starting D.C. shunt motor.
	<ul style="list-style-type: none"> <li>First assignment will be given and tentative 1<sup>st</sup> sessional test/evaluation of sessional marks etc.</li> </ul>		
22 <sup>th</sup>	<ul style="list-style-type: none"> <li>Display and analysis of sessional marks</li> </ul>		
23 <sup>th</sup> (unit-3)	<ul style="list-style-type: none"> <li>Introduction of Transformers, types of T/Fm</li> </ul>		
24 <sup>th</sup>	<ul style="list-style-type: none"> <li>Construction of single phase transformer,</li> </ul>		
25 <sup>th</sup>	<ul style="list-style-type: none"> <li>Parts of a transformer</li> </ul>	7 <sup>th</sup>	To perform open circuit and short circuit test for determining: (i) equivalent circuit (ii) the regulation and (iii) efficiency of a transformer from the data obtained from open circuit and short circuit test at full load
26 <sup>th</sup>	<ul style="list-style-type: none"> <li>Working principle of transformer</li> </ul>		
27 <sup>th</sup>	<ul style="list-style-type: none"> <li>EMF equation of T/fm</li> </ul>		
28 <sup>th</sup>	<ul style="list-style-type: none"> <li>Transformer at no load and its phasor diagram</li> </ul>		
29 <sup>th</sup>	<ul style="list-style-type: none"> <li>Transformer – neglecting voltage drop in the windings – Ampere turn balance – its phasor diagram</li> </ul>	8 <sup>th</sup>	Evaluation of above practicals.
30 <sup>th</sup>	<ul style="list-style-type: none"> <li>Mutual and leakage fluxes, leakage reactance</li> </ul>		
31 <sup>th</sup>	<ul style="list-style-type: none"> <li>Transformer on load, voltage drops and its phasor diagram</li> </ul>		
32 <sup>th</sup>	<ul style="list-style-type: none"> <li>Equivalent circuit diagrams of T/fm, Relation between induced emf and terminal voltage, regulation of a transformer mathematical relation</li> </ul>		

33 <sup>th</sup>	<ul style="list-style-type: none"> <li>Losses in transformer, various tests OC/SC Test to find out these losses and efficiency etc.</li> </ul>	9 <sup>th</sup>	Revision of above practicals for left out students.
34 <sup>th</sup>	<ul style="list-style-type: none"> <li>Auto transformer, construction, working and its application</li> </ul>		
35 <sup>th</sup>	<ul style="list-style-type: none"> <li>Different type of transformer including dry type transformer</li> </ul>		
36 <sup>th</sup>	<ul style="list-style-type: none"> <li>second assignment will be given and tentative 2<sup>nd</sup> sessional test/evaluation of sessional marks etc</li> </ul>		
37 <sup>th</sup>	<ul style="list-style-type: none"> <li>display and analysis of sessional marks.</li> </ul>	10 <sup>th</sup>	Checking the polarity of the windings of a three phase transformer and connecting the windings in various configurations
38 <sup>th</sup> (unit-4)	<ul style="list-style-type: none"> <li>construction of 3-phase transformer</li> </ul>		
39 <sup>th</sup>	<ul style="list-style-type: none"> <li>accessories of transformers such as Conservator, breather,</li> </ul>		
40 <sup>th</sup>	<ul style="list-style-type: none"> <li>Buchholz Relay, Tap Changer (off load and on load) (Brief idea)</li> </ul>		
41 <sup>th</sup>	<ul style="list-style-type: none"> <li>Types of three phase transformer i.e. delta-delta, delta-star</li> </ul>		
42 <sup>th</sup>	<ul style="list-style-type: none"> <li>..star-delta, star-star.</li> </ul>	11 <sup>th</sup>	Finding the voltage and current relationships of primary and secondary of a three phase transformer under balanced load in various configurations conditions such as (a) Star-star (b) Star delta (c) Delta star (d) Delta-Delta configuring conditions
43 <sup>th</sup>	<ul style="list-style-type: none"> <li>Parallel operation of transformer, its need</li> </ul>		
44 <sup>th</sup>	<ul style="list-style-type: none"> <li>Parallel operation conditions will be discussed</li> </ul>		
45 <sup>th</sup>	<ul style="list-style-type: none"> <li>Any left out topic due to CI/leave etc.</li> </ul>		
46 <sup>th</sup>	<ul style="list-style-type: none"> <li>Same as above</li> </ul>	12 <sup>th</sup>	Evaluation of above practicals.
47 <sup>th</sup>	<ul style="list-style-type: none"> <li>Local visit to complaint centre to show parts /accessories of transformer</li> </ul>		
48 <sup>th</sup>	<ul style="list-style-type: none"> <li>On load/off load tap changer</li> </ul>		
49 <sup>th</sup>	<ul style="list-style-type: none"> <li>Distribution /power transformer</li> </ul>	13 <sup>th</sup>	Revision of above practicals for left out students if any.
50 <sup>th</sup>	<ul style="list-style-type: none"> <li>Cooling of transformer</li> </ul>		
51 <sup>th</sup>	<ul style="list-style-type: none"> <li>3<sup>rd</sup> assignment will be given</li> </ul>		
52 <sup>th</sup>	<ul style="list-style-type: none"> <li>Previous state boards question will be carried out, any other left out topic</li> </ul>		
53 <sup>th</sup>	<ul style="list-style-type: none"> <li>3<sup>rd</sup> sessional test</li> </ul>	14 <sup>th</sup>	Viva-voce/preparation of practical sessional marks.
54 <sup>th</sup>	<ul style="list-style-type: none"> <li>Evaluation of 3<sup>rd</sup> test</li> </ul>		

55th	<ul style="list-style-type: none"> <li>• Display/analysis of 3<sup>rd</sup> sessional test</li> </ul>		
56 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Remedial will be taken if any shortcomings found</li> </ul>		
57 <sup>th</sup>	<ul style="list-style-type: none"> <li>• Seminal/group discussion as per evaluation scheme</li> </ul>		
58 <sup>th</sup>	<ul style="list-style-type: none"> <li>• -do-</li> </ul>		
59 <sup>th</sup>	<ul style="list-style-type: none"> <li>• -do-</li> </ul>		
60 <sup>th</sup>	<ul style="list-style-type: none"> <li>• -do-</li> </ul>		
	<ul style="list-style-type: none"> <li>• Preparation of sessionals, practical award etc.</li> </ul>		

**Government Polytechnic Nanakpur**  
**Electrical Engineering Department**  
**Lesson plan**

<b>Discipline</b>		<b>Electrical Engineering</b>		
<b>Semester</b>		4 <sup>th</sup>		
<b>Subject</b>		<b>Digital Electronics</b>		
<b>Lesson Plan Duration</b>		<b>15 WEEKS</b>		
<b>Work load [Theory + Practical] Per Week</b>		<b>[04+02]</b>		
<b>Week</b>	<b>Day</b>	<b>Theory Topic/ Assignment/ Test</b>	<b>No.</b>	<b>Practical</b>
1 <sup>st</sup>	1	Unit1: Introduction to Number Systems	1	Verification and interpretation of truth table for AND, OR, NOT, NAND, NOR, X-OR gates
	2	Decimal, binary number system		
	3	octal, hexa-decimal number system		
	4	BCD and ASCII code number systems and their inter-conversion		
2 <sup>nd</sup>	1	Binary and Hexadecimal addition subtraction and multiplication	2	Construction of Half Adder/Full Adder using gates
	2	1's and 2's complement methods of addition		
	3	1's and 2's complement methods of subtraction		
	4	Class Test/Assignment		
3 <sup>rd</sup>	1	Unit2: Gates Definition, symbol and truth tables for	3	Revision/Checking of Files
	2	inverter, OR, AND,		
	3	NAND,NOR		
	4	Draw AND,OR using NAND GATE and X-OR, exclusive-AND gates		
4 <sup>th</sup>	1	Class Test/Assignment	4	To verify the truth table for JK flip flop
	2	Revision/Problem solution		
	3	Unit3: Introduction Boolean Algebra		
	4	Boolean Relations and their applications		
	5	De Morgan's Theorems		
5 <sup>th</sup>	1	K-Map up to four variables	5	Construction and testing of any counter
	2	Numerical based on Demorgan's /Boolean relation		
	3	Numerical based on K-Map		
	4	Class Test/Assignment		
6 <sup>th</sup>	1	Unit4: Combinational Circuits	6	Revision/Checking of Files
	2	Half adder, Full adder		
	3	Encoder, Decoder		
	4	Multiplexer/Demultiplexer		
7 <sup>th</sup>	1	Introduction to Display Devices ; LED LCD and 7-segment display	7	Mid-term viva-voice
	2	Class Test/Assignment		
	3	Revision/Problem solution		
	4	Unit5: Introduction to Flip-Flops		
8 <sup>th</sup>	1	J-K Flip-Flop R-S Flip-Flop	8	Verification of operation of a 8-bit D/A Converter
	2	D-Type Flip-Flop		
	3	T-Type Flip-Flop		
	4	Applications of Flip-Flops		



9 <sup>th</sup>	1	Revision/Problem solution	9	Revision/Checking of Files
	2	Unit6: Introduction to Shift Registers		
	3	and Counters		
	4	Class Test/Assignment		
10 <sup>th</sup>	1	Unit7: A/D and D/A Converters	10	Revision/Checking of Files
	2	A/D converter ,Counter ramp method		
	3	successive approximation method of A/D Conversion		
	4	D/A converters, Binary weighted method		
	5			
11 <sup>th</sup>	1	R-2R D/A Converter method	11	Revision/Checking of Files
	2	Revision/Problem solution		
	3	Unit8:Semi-conductor Memories introduction		
	4	Types, merits, demerits and applications		
12 <sup>th</sup>	1	Class Test/Assignment	12	Revision/Checking of Files
	2	Revision/Problem solution		
	3	Unit9 : introduction to Microprocessor		
	4	8085 microprocessor architecture pin configuration		
13 <sup>th</sup>	1	Instruction set of 8085 microprocessor	13	Revision/Checking of Files
	2	Data transfer and arithmetical instructions		
	3	Instruction format		
	4	Addressing modes		
		Assembly language programmes including debugging.		
14 <sup>th</sup>	1	Use of stacks and sub-routines in programming	14	Revision/Checking of Files
	2	Interfacing and data transfer between peripheral		
	3	I/O and microprocessor		
	4	Study of peripheral chips-		
15 <sup>th</sup>	1	8251,8155	15	Revision/Checking of Files
	2	8051		
	3	8257		
	4	8259		
16 <sup>th</sup>	1	Introduction of 16-bit, 32-bit microprocessor	16	Internal Practical
		their advantages over 8-bit microprocessor		
	2	Class Test/Assignment		
	3	Revision/Problem solution		
4	Previous year HSBTE Question Paper Solution			

Govt.Polytechnic Nanakpur

Electrical Engineering Department  
Lesson plan

Discipline		Electrical Engineering		
Semester		4 <sup>th</sup>		
Subject		EMII		
Lesson Plan Duration		15 WEEKS		
Work load [Theory + Practical] Per Week		[04T+02Pr]		
Week	Day	Theory Topic/ Assignment/ Test	No.	Practical
1 <sup>st</sup>	1	discussion of learning outcomes	1	Use of analog and digital multimeter.
	2	Unit-1 Concept of measurement and instruments		
	3	Concept of measurement and instruments		
	4	Sources of error in instruments Types of electrical measuring instruments-Indicating,integrating and recording		
2 <sup>nd</sup>	1	Essential of indicating instruments	2	Measurement of pressure by using LVDT.
	2	Revision of above		
	3	Unit-2 introduction of moving coil and moving iron instruments		
	4	Difference between ammeters and voltmeters		
3 <sup>rd</sup>	1	Construction and working of moving iron and moving coil instruments	3	Revision/Checking of Files
	2	Merits and demerits of above		
	3	Sources of error in above instruments		
	4	Application of moving iron and moving coil instruments		
4 <sup>th</sup>	1	Unit-3 wattmeter's construction	4	To measure of earth resistance by using of earth tester.
	2	Working and principle of wattmeter		
	3	Merits and demerits of dynamometer wattmeter		
	4	Digital wattmeter		
5 <sup>th</sup>	1	Unit-4 Energymeter- Introduction	5	To measure power, power factor in a single phase circuit , wattmeter and power factor meter and to verify results.
	2	Construction and principle of EM		
	3	Merits and demerits of EM.		
	4	Errors in EM,MDI		
6 <sup>th</sup>	1	Revision/Problem solution	6	Revision/ left out of above.
	2	Digital Energy Meter its construction and diagram.		
	3	Unit -5 Miscellaneous Measuring Instruments		
	4	Megger -construction working and principle.		
7 <sup>th</sup>	1	Earth tester analog and digital ,Single phase power factor meter	7	Mid-term viva-voice
	2	synchroscope		
	3	Revision/Problem solution		
	4	Phase sequence indicator Clamp on meter		
	1	Class test.	8	Measurement of VOLTAGE and draw
	2	Instrument transformers-CT and PT.		

8 <sup>th</sup>	3	Unit-6 Electronic Instruments		wveshape of by using CRO.
	4	Introduction of EI. CRO Block Diagram		
9 <sup>th</sup>	1	Working principle of CRO	9	Revision/Checking of Files
	2	Application of CRO		
	3	Digital multi meter only block diagram and its application.		
	4	Class Test/Assignment		
10 <sup>th</sup>	1	Unit 7 introduction of LCR Meters.	10	Measurement of power in a 3 phase circuit by using CT AND PT.
	2	Applications of LCR meter.		
	3	Previous year question paper discussed of above chapters.		
	4	Surprise class test.		
11 <sup>th</sup>	1	Class Test/Assignment	11	Revision/Checking of Files
	2	Unit-8 power measurements in 3 phase circuit introduction		
	3	Two wattmeter method		
	4	Three wattmeter method.		
12 <sup>th</sup>	1	Class Test/Assignment	12	Use of LCR meter.
	2	Revision/Problem solution		
	3	Unit9 : introduction to transducers.		
	4	Types of transducers.		
13 <sup>th</sup>	1	Pressure measurement ,Flow measurement	13	Measurement of temperature by using thermistor.
	2	Level measurement.		
	3	Displacement measurement.		
	4	Evaluation of home assignments.		
14 <sup>th</sup>	1	Unit -10 Measurement of temperature	14	To record all electrical quantities from the meters installed in the Institute.
	2	Types of thermometer.		
	3	Thermocouple and resistance temperature.		
	4	Thermal imager etc.		
15 <sup>th</sup>	1	Any left out topic.	15	Calibration of single phase energy meters.
	2	Students problem discussion.		
	3	Students problem discussion/previous hsbte paper discussion.		
	4	Revision/Problem solution		
16 <sup>th</sup>	1	Checking of copies .	16	Internal Practical
	2	Checking of copies .		
	3	Revision/Problem solution		
	4	Previous year HSBTE Question Paper Solution		

**Govt.Polytechnic Nanakpur**  
**Electrical Engineering Department**  
**Lesson plan**

<b>Discipline</b>	<b>Electrical Engineering</b>
<b>Semester</b>	4 <sup>th</sup>
<b>Subject</b>	<b>IMEE</b>
<b>Lesson Plan Duration</b>	<b>15 WEEKS</b>
<b>Work load [Theory + Practical] Per Week</b>	<b>[04]</b>

<b>Week</b>	<b>Day</b>	<b>Theory Topic/ Assignment/ Test</b>
<b>1<sup>st</sup></b>	<b>1</b>	<b>discussion of learning outcomes</b>
	<b>2</b>	<b>Unit-1 Tools and accessories introduction Tools required for maintenance and repair work</b>
	<b>3</b>	<b>IER rules</b>
	<b>4</b>	<b>Safety codes ,accidents and its causes. Artificial respiration.</b>
<b>2<sup>nd</sup></b>	<b>1</b>	<b>Unit 2- Installation of transmission and distribution lines.</b>
	<b>2</b>	<b>Erection of steel structures, jumpers tee off points and dead ends.</b>
	<b>3</b>	<b>Crossing of roads, streets, power/telecommunication lines, railway line crossings.</b>
	<b>4</b>	<b>Earthing of transmission lines and guarding, spacing of conductors.</b>
<b>3<sup>rd</sup></b>	<b>1</b>	<b>Suspension and strain insulators, birds guards. Anticlimbing devices.</b>
	<b>2</b>	<b>Danger plates etc.</b>
	<b>3</b>	<b>Laying of service lines, earthing provision of service lines, installation of energy meters.</b>
	<b>4</b>	<b>Laying of underground cable, transportation and handling of cables</b>
<b>4<sup>th</sup></b>	<b>1</b>	<b>Laying of cable methods.</b>
	<b>2</b>	<b>Laying of cables.</b>
	<b>3</b>	<b>Laying of cables cont.</b>
	<b>4</b>	<b>Revision/problem solution.</b>
<b>5<sup>th</sup></b>	<b>1</b>	<b>Handling of transformer.</b>
	<b>2</b>	<b>Substation and its types.</b>
	<b>3</b>	<b>Above will continue.</b>
	<b>4</b>	<b>Testing of electrical motors.</b>
<b>6<sup>th</sup></b>	<b>1</b>	<b>Revision/Problem solution</b>
	<b>2</b>	<b>Motor control centres, power control centres.</b>
	<b>3</b>	<b>Lighting arrangements., pre installation checks drying out.</b>
	<b>4</b>	<b>Any left out topic/students problem discussion</b>
<b>7<sup>th</sup></b>	<b>1</b>	<b>Class test</b>
	<b>2</b>	<b>Evaluation and display of marks.</b>
	<b>3</b>	<b>Unit 3 introduction of maintenance</b>
	<b>4</b>	<b>Authorized person, danger notice and caution notice.</b>
<b>8<sup>th</sup></b>	<b>1</b>	<b>Permit to work.</b>
	<b>2</b>	<b>Temporary earthing cancellation of permit to work.</b>
	<b>3</b>	<b>Patrolling and inspection of lines.</b>
	<b>4</b>	<b>Special and night inspections.</b>
<b>9<sup>th</sup></b>	<b>1</b>	<b>Fault location using meggar.</b>
	<b>2</b>	<b>Fuses on service lines, dim and flickering lights.</b>
	<b>3</b>	<b>Revision of above.</b>
	<b>4</b>	<b>Class Test/Assignment</b>
	<b>1</b>	<b>Evaluation and Display of marks.</b>

10 <sup>m</sup>	2	Maintenance of distribution of transformers
	3	Checking of insulation resistance, BDV oil test.
	4	Grid substations, busbars.HT/LT.
11 <sup>th</sup>	1	Power transformers.
	2	Students any problem.
	3	Any other left out topics
	4	Sub station visit. Tentative class/ sessional test -2
12 <sup>th</sup>	1	Evaluation/display of marks.
	2	Over hauling of motors. Preventive maintenance.
	3	Trouble shooting of electric motors.
	4	Domestic installation introduction.
13 <sup>th</sup>	1	Testing of electrical installation.
	2	Testing of electrical insulation to earth.
	3	Testing of insulation and resistance between conductors.
	4	Continuity or open circuit test.
14 <sup>th</sup>	1	Any left topic.
	2	Students problem solution.
	3	Home assignment copy checking.
	4	Home assignment copy checking.
15 <sup>th</sup>	1	Class/sessional 3
	2	Evaluation and display of marks.
	3	Students problem discussion/previous hsbte paper discussion.
	4	Revision/Problem solution
16 <sup>th</sup>	1	PTM.
	2	Checking of copies .
	3	Revision/Problem solution
	4	Previous year HSBTE Question Paper Solution
	5	Previous year HSBTE Question Paper Solution

Govt. Polytechnic Nanakpur

LESSON PLAN

**Discipline** : ELECTRICAL ENGINEERING  
**Semester** : 4th  
**Subject** : EWP-II  
**Lesson Plan**  
**Duration** : 15 WEEKS  
**Work Load** : Practical: 06  
**(Lecture/Practical)**  
**per week (in hours)**

<b>Week</b>	<b>Topic</b>
1st	(i) Introduction to the Subject learning outcomes. (ii) Introduction of the nature of the examination and marks distribution of different topics
2nd	To carry out pipe/plate earthing for a small house and 3-phase induction motor. Testing the earthing using earth tester
3rd	Connections of single phase and 3-phase motors, through an appropriate starter and to change their direction of rotation
4th	Wiring, testing and fault finding of the following contactor control circuits operating on 3-phase supply: a) Remote control circuits b) Time delay circuits c) Inter locking circuits Sequential operation control circuits
5th	Continued

6th	Continued
7th	Winding/re-winding of a fan (ceiling and table)/ motor
8th	Power cable jointing using epoxy based jointing kits
9th	Demonstration of laying of underground cables at worksite
10th	Dismantling/assembly of star-delta and DOL starter
11th	Dismantling and assembly of voltage stabilizers
12th	Repair and maintenance of domestic electric appliances, i.e. electric iron, geyser, fan, heat convector, desert cooler, room heater, electric kettle, electric oven, electric furnace etc.
13th	Dismantling/assembly/maintenance of motor operated appliances such as mixer, blender, drill machine etc.
14th	Continued
15th	Design a printed circuit Board (PCB) for voltage regulator using zener diode.

**Govt.Polytechnic Nanakpur**  
**Electrical Engineering Department**  
**Lesson plan**

<b>Discipline</b>	<b>Electrical Engineering</b>
<b>Semester</b>	4 <sup>th</sup>
<b>Subject</b>	<b>Soft Skills-II</b>
<b>Lesson Plan Duration</b>	<b>15 WEEKS</b>
<b>Work load [Theory + Practical] Per Week</b>	<b>[01 Pr.]</b>

<b>WEEK</b>	<b>DATE</b>	<b>TOPIC</b>
1		Learning outcomes and Concept of team building.
2		Behavior in a team.
3		Interpersonal relations-empathy,sympathy.
4.		Communication skills- improving non verbal communication.
5.		Conflict management.
6.		Continued above.
7.		Various stories will be discussed.
8.		Stories from you tube/google.
9.		Motivation.
10.		Quizzes/practice.
11.		Leadership.
12.		Group discussion/seminar.
13.		Professional ethics.
14.		Health hygiene.
15.		Safety and cleanliness.
16.		Swachh abiyaan in institute.