

### Lesson Plan

	Discipline:Electrical	Semester-4th SUMMER 2024	Name of the Teaching Faculty: Sri SIBANI SANKAR SWAIN
Sl. No	Subject-Energy Conversion-I	No. Of Days/Week class allotted:05	Semester From date: 16.01.2024 to date: 26.04.2024. No of weeks: 15
	Weeks/Months	Class Day	Topic
1	1st Week	1st (16/01/2024)	Operating principle of generator
		2nd (14/01/2024)	Constructional features of DC machine, Yoke, Pole & field winding, Armature, Commutator
		3rd (19/01/2024)	Constructional features of DC machine, Yoke, Pole & field winding, Armature, Commutator
		4th (20/01/2024)	Constructional features of DC machine, Yoke, Pole & field winding, Armature, Commutator
2	2nd Week	1st (22/01/2024)	Armature winding, back pitch, Front pitch, Resultant pitch and commutator- pitch Different types of D.C. machine
		2nd (24/01/2024)	Different types of D.C. machines (Shunt, Series and Compound)
		3rd (26/01/2024)	Derivation of EMF equation of DC generators.
		4th (27/01/2024)	Derivation of EMF equation of DC generators.
3	3rd Week	1st (29/01/2024)	Losses and efficiency of DC generator. Condition for maximum efficiency and numerical problems
		2nd (30/01/2024)	Armature reaction in D.C. machine
		3rd (31/01/2024)	Commutation and methods of improving commutation.
		4th (02/02/2024)	Role of inter poles and compensating winding in commutation
		5th (03/02/2024)	Characteristics of D.C. Generators Application of different types of D.C. Generators
4	4th Week	1st (05/02/2024)	Characteristics of D.C. Generators Application of different types of D.C. Generators
		2nd (06/02/2024)	Concept of critical resistance and critical speed of DC shunt generator
		3rd (07/02/2024)	important terms used for fuses and circuit breaker
		4th(09/02/2024)	Conditions of Build-up of emf of DC generator.
		5th(10/02/2024)	Conditions of Build-up of emf of DC generator.
5	5th Week	1st (12/02/2024)	Parallel operation of D.C. Generators Uses of D.C generators.
		2nd (13/02/2024)	Parallel operation of D.C. Generators Uses of D.C generators.
		3rd (16/02/2024)	Basic working principle of DC motor Significance of back emf in D.C. Motor
		4th (17/02/2024)	Voltage equation of D.C. Motor and condition for maximum power output(simple problems)
		1st (19/02/2024)	Derive torque equation (solve problems)
		2nd (20/02/2024)	Characteristics of shunt, series and compound motors and their application.

6	6th Week	3rd (21/02/2024)	Characteristics of shunt, series and compound motors and their application.
		4th (23/02/2024)	Starting method of shunt, series and compound motors.
		5th (24/02/2024)	Starting method of shunt, series and compound motors.
7	7th Week	1st (26/02/2024)	Speed control of D.C. series motors by Field Flux control method, Tapped field method and series-parallel method
		2nd (27/02/2024)	Speed control of D.C. series motors by Field Flux control method, Tapped field method and series-parallel method
		3rd (28/02/2024)	Determination of efficiency of D.C. Machine by Brake test method(solve numerical problems)
		4th (01/03/2024)	Speed control of D.C. series motors by Field Flux control method, Tapped field method and series-parallel method
		5th (02/03/2024)	Determination of efficiency of D.C. Machine by Brake test method(solve numerical problems)
8	8th Week	1st (04/03/2024)	Determination of efficiency of D.C. Machine by Swinburne's Test method(solve numerical problems)
		2nd (06/03/2024)	Losses, efficiency and power stages of D.C. motor(solve numerical problems) Uses of D.C. motors
		3rd (09/03/2024)	Losses, efficiency and power stages of D.C. motor(solve numerical problems)
9	9th Week	1st (11/03/2024)	Constructional feature of Transformer. Arrangement of core & winding in different types of transformer.
		2nd (12/03/2024)	Brief ideas about transformer accessories such as conservator, tank, breather, and explosion vent etc.
		3rd (13/03/2024)	Explain types of cooling methods
		4th (15/03/2024)	State the procedures for Care and maintenance.
		5th (16/03/2024)	EMF equation of transformer.
10	10th Week	1st (18/03/2024)	Ideal transformer voltage transformation ratio
		2nd (19/03/2024)	Operation of Transformer at no load, on load with phasor diagrams.
		3rd (20/03/2024)	Operation of Transformer at no load, on load with phasor diagrams.
		4th (22/03/2024)	Equivalent Resistance, Leakage Reactance and Impedance of transformer.
		5th (23/03/2024)	To draw phasor diagram of transformer on load, with winding Resistance and Magnetic leakage with using upf, leading pf and
11	11th Week	1st (27/03/2024)	To draw phasor diagram of transformer on load, with winding Resistance and Magnetic leakage with using upf, leading pf and
		2nd (30/03/2024)	Regulation of transformer.
12	12th Week	1st (02/04/2024)	Different types of losses in a Transformer. Explain Open circuit and Short Circuit test.(Solve numerical problems)
		2nd (03/04/2024)	Different types of losses in a Transformer. Explain Open circuit and Short Circuit test.(Solve numerical problems)
		3rd (05/04/2024)	Explain Efficiency, efficiency at different loads and power factors, condition for maximum efficiency (solve problems)
		1st (08/04/2024)	Determination of load corresponding to Maximum efficiency.
		2nd (09/04/2024)	Parallel operation of single phase transformer

13	13th Week	3rd (10/04/2024)	Constructional features of Auto transformer.
		4th (12/04/2024)	Working principle of single phase Auto Transformer.
		5th (13/04/2024)	Comparison of Auto transformer with an two winding transformer (saving of Copper).
14	14th Week	1st (15/04/2024)	Comparison of Auto transformer with an two winding transformer (saving of Copper).
		2nd (16/04/2024)	Uses of Auto transformer.
		3rd (19/04/2024)	Explain Tap changer with transformer (on load and off load condition)
		4th (20/04/2024)	Explain Tap changer with transformer (on load and off load condition)
15	15th Week	1st (22/04/2024)	Explain Current Transformer
		2nd (23/04/2024)	Explain Potential Transformer
		3rd (24/04/2024)	Define Ratio error, Phase angle error, Burden
		4th (26/04/2024)	Uses of C.T. and P.T