No	Course Information Semester I	
1	Unit name:	Electrical Machine and Operation
2	Code:	EP-31021
3	Classification:	Engineering subject
4	Credit value:	2.5
5	Semester/ Year Offered:	1/3
6	Pre-requisite:	EP-21021& 22021 Electromechanics
7	Mode of delivery:	Lecture, Practical
8	Assessment system and breakdown of marks:	
	Test	20%
	Mid-term Examination	30%
9	Academic staff teaching unit:	
10	Course outcome of unit: In this course students will be able - To explain the characteristics of the D.C shunt generator and the function of D.C motor - To calculate the problems of D.C shunt generator and D.C motor - To computethe problems of D.C machineby using various control methods - To identify losses and calculate the efficiency of the D.C machine - To apply the tools for measuring the speed of DC machines	
11	Synopsis of unit: The course covers Electrical Machine and Operation. The course introduces students to direct current generator characteristic, direct current motor, speed control of DC motor, loss efficiency and testing of DC machine.	

12	Topic:
	
	Chapter Title
	
	1. Direct Current Generator Characteristics
	     -Characteristics of DC generators
	     -Separately excited generator
	     -Building up the voltage of self-excited shunt generator
	     -Shunt generator characteristics
	     -Series generator
	     -Compound wound generator
	     -Applications of DC generator
	
	2. Direct Current Motor
	     -General aspects
	     -Principle of operation of DC motor
	     -Back or counter E.M.F
	     -Comparison between motor and generator action
	     -Torque developed in motor
	     -Mechanical power developed by motor armature
	     -Types of DC motor
	     -Speed of a DC motor
	     -Speed regulation
	     -Armature reaction and commutation
	     -Motor characteristics
	     -Comparison of DC motor characteristics
	     -Summary of characteristics and applications of DC motors
	     -DC motor reversing
	     -Starting DC motors
	     -Self-governing properties of DC motor
	
	3.Speed Control of DC Motors
	     -Factors controlling the speed
	     -Field control method
	     - Rheostatic control

	-Voltage control
	-Thyristor control of DC motor
	- Electric braking
	4. Losses, Efficiency and Testing of DC Machines
	-Losses and efficiency
	- Testing of DC machines
14	Main references:
	ELECTRICAL MACHINES 2nd Edition ; R.K. Rajput
15	Additional references:
	http://mysite.du,edu> tech>elmotors
	http://www.explainthatstuff.com>how-regener....

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