

The Lesson Plan

SYNERGY POLYTECHNIC, BBSR

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Discipline: EE		Semester: 5th	Name of the Teaching Faculty: Prof. D.D. Sahu	
Subject: EC-II		No of Days/per week class allotted:	Semester from Date: 1.8.23 to Date: 20.11.23	
Week		Class Day	No of Weeks:	
			Theory/Practical Topics	
1st	1st		Effect of excitation on armature ct & p.f.	
	2nd		Hunting of Synchronous motor & function of damper winding in Sy motor	
	3rd		& generator. Method of starting of Sy motor	
	4th		Application of Sy. Motor. Discussion of MCA	
	5th			
2nd	3- $\phi$ Induction Motor (I/M)		1st	Explanation of rotating magnetic field
	2nd		2nd	Construction of 3- $\phi$ three-phase I/M.
	3rd		3rd	Working principle of 3- $\phi$ I/M.
	4th		4th	Definition of slip, slip speed & relation of slip with Rotor quantities
	5th		5th	
3rd	1st		1st	Derivation of torque equation at starting & running condition.
	2nd		2nd	Condition of max torque & to solve numerical problems.
	3rd		3rd	Torque-slip characteristics
	4th		4th	Derivation of relation between full load torque & starting torque.
	5th		5th	Solve numerical problems.
4th	1st		1st	Establishment of relation between Rotor Cu loss, rotor output, Gross Torque & relationship of slip with Rotor Cu loss. Numerical problem.
	2nd		2nd	
	3rd		3rd	Method of starting of I/M. Different types of starters used on 3- $\phi$ I/M.
	4th		4th	
	5th		5th	
5th	1st		1st	Speed control of 3- $\phi$ I/M. by (a) voltage control method (b) Rotor resistance control method (c) Pole changing method (d) frequency changing method.
	2nd		2nd	
	3rd		3rd	Plugging of 3- $\phi$ I/M & different type of enclosers.
	4th		4th	Principle of Induction Generator & applications.
	5th		5th	

Sign of Faculty

*D.D.S*  
HOD 26/11/23

*D.Sahu*  
20/11/23  
Principal

The Lesson Plan

Discipline: EE		Semester: 5th	Name of the Teaching Faculty: Prof. D.D. Sahu
Subject: EG-II		No of Days/per week class allotted:	Semester from Date: 01/8/23 to Date: 30/11/2023 No of Weeks:
Week	Class Day	Theory/Practical Topics Alternator	
1st	1st	Construction & classification of Alternator	
	2nd	Working Principle and relation between Speed & Frequency	
	3rd	Armature winding, their terminology & Winding factors (Kd & Kp).	
	4th	Explain Harmonics, its causes & Impact on Winding Factor.	
	5th		
2nd	1st	Derivation of EMF equation & to solve numerical problem.	
	2nd	Armature reaction & its effects on emf at diff power factor of load	
	3rd	Drawing of Vector Diagram of loaded alternator & to solve numerical problems	
	4th	Testing of Alternator a) OC test b) SC Test.	
	5th		
3rd	1st	Determination of Voltage regulation by a) Direct loading method.	
	2nd	b) Synchronous Impedance method.	
	3rd	Solve numerical problems.	
	4th	Parallel operation of alternators a) Synchroscope method	
	5th	b) Bright lamp method.	
4th	1st	Solving of numerical Problems.	
	2nd	Distribution of load by parallel connected alternators	
	3rd	Discussion on M.C.R.	
	4th	Syn motor	Construction & working principle & concept of load angle.
	5th		
5th	1st	Derivation of torque, power developed	
	2nd	Effect of varying load with constant excitation.	
	3rd	Effect of varying excitation with constant load.	
	4th	Explain power angle characteristic of cylindrical rotor motor.	
	5th	Discussion on different types of M.C.R.	

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Principal 26/7/23

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Discipline: EE		Semester:	Name of the Teaching Faculty: Prof. D. D. Sahu
Subject: EC-II		No of Days/per week class allotted:	Semester from Date: 1.8.22 to Date: 20.11.22 No of Weeks: 18
Week	Class Day	Theory/Practical Topics	
1st	1st	1- $\phi$ Induction Motor Explanation of Ferraris principle. Doubt revolving <del>the</del> field	
	2nd	Theory of cross-field theory of 1- $\phi$	
	3rd	Working principle, Torque-Speed characteristics, performance	
	4th	Characteristics & application of 1- $\phi$ P.M.	
	5th		
2nd	1st	a) Split phase motor b) Capacitor start motor	
	2nd	c) Capacitor start capacitor run motor	
	3rd	d) Permanent capacitor type motor	
	4th	e) Shaded pole motor, method of change of direction of rotation	
	5th	Internal Assessment	
3rd	1st	Construction, working principle of 1- $\phi$ Series motor.	
	2nd	Construction, working principle of Universal motor & its application.	
	3rd	Construction, working principle of Repulsion Start Induction run motor.	
	4th	Repulsion Induction Motor, M.C.Q.	
	5th		
4th	1st		
	2nd		
	3rd	Puja vacation.	
	4th		
	5th		
5th	1st		
	2nd		
	3rd		
	4th		
	5th		

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*D. D. Sahu*  
HOD

*D. D. Sahu*  
26/7/22  
Principal

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Discipline:	Semester:	Name of the Teaching Faculty:
Subject:	No of Days/per week class allotted:	Semester from Date: to Date: No of Weeks:
Week	Class Day	Theory/Practical Topics
1st	1st	Special Electrical Machines classification & working principle of Stepper Motor
	2nd	Principle of variable reluctance Stepper motor.
	3rd	Working principle of Permanent magnet Stepper Motor.
	4th	Hybrid Stepper motor.
	5th	Application of Stepper Motor.
2nd	1st	<del>App</del> MCR. discussion.
	2nd	Grouping of winding of 3-φ transformers
	3rd	and Advantages.
	4th	Parallel operation of 3-φ $\frac{1}{5}$
	5th	
3rd	1st	Explain tap changer
	2nd	Maintenance schedule of Power Transformers.
	3rd	Monthly Test
	4th	
	5th	
4th	1st	
	2nd	
	3rd	
	4th	
	5th	
5th	1st	
	2nd	
	3rd	
	4th	
	5th	

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*D. A. S.*  
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*John*  
26/7/23  
Principal