Course Content

Category of Course	Course Title	Course Code	Credits –4C			Theory Papers (ES)
			L	T	P	
Departmental Core DC – 12	ELECTRICAL MACHINE III	EE603	3	1	0	Max.Marks-100 Min.Marks-35 Duration-3hrs.

UNIT:

1. Induction Machine - characteristics, starting , Operation of induction motor on unbalanced supplies. Production of time and space harmonics. Their effect, harmonic torques, motor derating, speed control of 3 phase induction motors. Double cage and deep bar rotor motors.

2. Constructional features, operating principle, characteristics and applications of special induction machine:
   (I) Induction voltage regulator
   (ii) Induction generator
   (iii) synchronous induction motor
   (iv) linear induction motors
   (v) eddy current slip coupling.
   Testing of electrical machines, statutory testing procedures.

3. Single phase induction motor , contruction, operation and methods of starting. Double revolving field theory. Equivalent circuit. Performance evaluation and study of relevant BIS. Principle of working of stepper motors, various construction techniques, control of stepper motors, static and dynamic characteristics.

4. Control of induction motor by emf injection in rotor circuit. Constructional features,operation characteristics and control of schrage motor.Constructional features, analysis and operation of AC series motor, application of AC series motor.

5. Construction and principle of switched reluctance motor and PMBL d.c. motor , Reluctance motor ,Hysteresis motor,modeling of stepper motor, SRM, PMBL motor, AC series motor.

BOOKS:

1. Generalised Theory of Machines - P S Bimbhra
2. Electric Machines - Dr.P.C.Sen