

EE 201

Electromechanics

Credits : 2.5-0.5-0-3

Approval: Convocation Adhoc Meeting

Prerequisites

Students intended for : B.Tech. (all branches)

Elective or Compulsory :

Semester : Odd/Even

Course contents:

Review of 1-phase, 3- phase circuits and magnetic circuits, transformers- 1-phase and 3-phase, special multiphase transformers and their applications, Electro mechanical Energy conversion principles and rotating machines, DC machines- construction, characteristics, commutation, armature reaction, speed control of DC motors and applications in drives; Synchronous machine- construction, characteristics, regulation, V-curves, parallel operation; Induction machines- 3-phase and 1- phase- construction, characteristics, starting, braking and speed control, Induction generators and applications. If time permits, Fractional kW motors, special machines- PM machines, SRM, stepper motors and their applications.

Text and Reference Books:

1. Kosow, I. L. , Electric Machinery & Transformers, PHI, India
2. Fitzgerald A. E., Kingsley C. and Kusko A., "Electric Machinery", 6th Ed., McGraw-Hill International Book Company.
3. Principles of Electric Machines and Power Electronics by P.C. Sen
4. Electric Machinery Fundamentals by Stephen J. Chapman
5. Nagrath I. J. and Kothari D. P., "Electrical Machines", 3rd Ed., Tata McGraw-Hill Publishing Company Limited.
6. Say M. G., "The Performance and Design of Alternating Current Machines", CBS Publishers and Distributors.
7. Clayton A. E. and Hancock N., "The Performance and Design of DC Machines", CBS Publishers and Distributors.