



Electrical Machines

3-0-0-6 EE385

Magnetic circuits and transformer including 3-phase transformers; modeling of D.C. machines; phasor diagram of cylindrical rotor and salient pole machines- electromagnetic and reluctance torque, response under short circuit conditions; modeling of induction machines- derivation of equivalent circuits, dynamics under load change, speed reversal and braking, unbalanced and asymmetrical operation; single phase induction motor and applications in domestic appliances; modeling of synchronous machines – equivalent circuit, d-q transformations, short circuit studies in synchronous machines; variable reluctance, permanent magnet, stepper motors and their applications.

Texts:

1. S. Chapman, Electric Machinery Fundamentals, 4th Ed., McGraw-Hill, 2003.
2. R. K. Rajput, Electrical Machines, 3rd Ed., Laxmi Publications (P) Ltd., 2003.

References:

1. L. Kosow, Electrical Machinery and Transformers, 2nd Ed., Prentice- Hall of India Pvt. Ltd., 2003.
2. B. S. Guru and H. R. Hiziroglu, Electrical Machinery and Transformers, 3rd Ed., Oxford University Press, 2003.