ELECTRICAL MACHINE ANALYSIS & CONTROL

Module-1(10 hrs)
Generalized transformations, Physical model, Different reference frame, Primitive machine, dynamic variable, Formulation of dynamic equations of a generalized machine in arbitrary reference frame

Module-2(12 hrs)
Analysis of induction machines, Space vector, induction motor modeling in arbitrary reference frame and in field oriented frame, Performance analysis.

Module-3(8 hrs)
Analysis of synchronous machine, Modeling, Operational impedances, Time constants, torque expression, Asynchronous damping,

Module-4(12 hrs)
Steady state and transient performance, Phasor diagram and power angle characteristics, Symmetrical and asymmetrical short circuit analysis, Measurement of reactances and time constants

TEXT BOOKS:

1. Herbert Schildt: Java The Complete Reference, 7th Edition, Tata McGraw Hill, 2007.

2. Robert W. Sebesta: Programming the World Wide Web, 4th Edition, Pearson Education, 2008.

Text/References:

- Concordia, Charles, "Synchronous Machines- Theory and Performance", Wiley, New York. 1989
- Kimbark E.W., Power System Stability: Synchronous Machines", Vol.3, Cover Publication, New York. 1976
- Adkins B., Harley R.G., "The Generalized Theory of Alternating Current Machines", Chapman & Hall, London. 1979
- Leonard W., "Control of Electrical Drives", 3rd Edition. Springer Press, New York. 2002
- Murphy J.M.D., Turnbull F.G., "Power Electronics Control of AC Motors", Pergamon Press, New York. 1988
- C. V. Jones, "The Unified theory of Electrical machines".,Butterworth , London, 1967.