Course Learning Objectives: Graduate-Level Course on Advanced Electric Drives

1. Modeling the dynamic behavior of ac machines in a-b-c phases.
2. Justification for the need for d-q axes representation.
3. Dynamic modeling of an induction machine using d-q axes representation.
4. Vector control of an induction machine using d-q axes representation.
5. Effect of parameter variations in vector control
6. Space Vector Pulse Width Modulation.
7. Direct Torque Control of Induction Motors.
8. Encoder-less control of induction motors.
9. Vector control of Permanent Magnet AC (PMAC) motors.
10. Switched Reluctance Machines.
11. Synchronous Reluctance Machines.

Textbook: Advanced Electric Drives: Analysis, Control and Modeling using Simulink®, Ned Mohan, Year 2001, www.MNPERE.com.