

Course Name - Industrial Drives - Power Electronics

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Course Syllabus -

1. Introduction

- a. Classification of Electric Drives
- b. Requirements of Electric Drives
- c. Some Applications

2. Converters and control

- a. Phase controlled converters
- b. Four quadrant operation
- c. Choppers d. AC to DC converters

3. DC motor drives

- a. Speed-torque characteristics DC shunt, PMDC and series motors
- b. Dynamic model
- c. Speed and position control methods

4. Inverters and PWM techniques

- a. voltage source inverters
- b. current source inverters
- c. PWM techniques i. sine-triangle comparison ii. harmonic elimination iii. hysteresis current controllers iv. space vector pwm

5. AC motor drives

- a. d-q model of induction motor
- b. constant flux speed control structure
- c. vector control model
- d. vector control structure