

Industrial Drives - Power Electronics - Video course

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| 1. Introduction | (4 hours) |
| a. Classification of Electric Drives | |
| b. Requirements of Electric Drives | |
| c. Some Applications | |
| 2. Converters and control | (6 hours) |
| a. Phase controlled converters | |
| b. Four quadrant operation | |
| c. Choppers | |
| d. AC to DC converters | |
| 3. DC motor drives | (4 hours) |
| a. Speed-torque characteristics DC shunt, PMDC and series motors | |
| b. Dynamic model | |
| c. Speed and position control methods | |
| 4. Inverters and PWM techniques | (8 hours) |
| a. voltage source inverters (1h) | |
| b. current source inverters (1h) | |
| c. PWM techniques | |
| i. sine-triangle comparison (1h) | |
| ii. harmonic elimination (1h) | |
| iii. hysteresis current controllers (1h) | |
| iv. space vector pwm (3h) | |
| 5. AC motor drives | (10 hours) |
| a. d-q model of induction motor (2 h) | |
| b. constant flux speed control structure (2h) | |
| c. vector control model (3h) | |
| d. vector control structure (3h) | |



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