

Objektif Kursus

1. Memahami konsep asas elektronik kuasa dan pemicu motor
2. Mendalami teknik penukaran tenaga yang biasa dan terkini
3. Memahami aplikasi penukaran tenaga dalam industri

Kandungan Kursus.

1. Fundamental concepts of Power Electronics (4 jam)
Introduction, Review of Basic Power Concepts, Application, Power Devices, Device Switchings and Related Issues
2. AC to DC Conversion (8 jam)
Diode Rectifiers, Controlled Rectifiers, Half-wave, Full-wave, Single Phase, Three Phase, R load, R-L load, R-C load, Harmonic Pollution and Standards.
3. DC to DC Conversion (8 jam)
Buck, Boost, Buck-boost Regulators, DC switched-mode power supply, Flyback, Full-bridge topologies, EMI Standards and Practices.
4. DC to AC Conversion (8 jam)
Inverters, Half-bridge, Full-bridge, Three-phase, Fourier Series and Harmonics, Voltage and frequency control, PWM Modulation.
5. Motor Drives (12 jam)
Basic motor equations, Torque production, DC Motor Drive, Induction Motor Drive. Fixed speed operation, Variable speed operation.

Penilaian:

Ujian 1 Jam	x2	40% (Selepas bab 3 dan 5)
Tugasan	x2	10%
Peperiksaan Akhir		50%

Nota

Pengkuliah akan berdasarkan kepada Nota Kuliah diwebsite <http://encon.fke.utm.my/notes/nota.html>
Setiap pelajar perlu melayar laman ini dan mencetak nota sendiri.

Teks (Pelajar dikehendakki membeli buku ini)

1. *Introduction to Power Electronics*, Daniel W. Hart, Prentice Hall International Inc., 1997

Rujukan

1. *Power Electronics: Converters, Applications and Design*. 2nd Edition, Mohan, Undeland and Robbins, John Wiley and Sons Inc., 1995.