EL6603 – Power Electronics

Week 1: Principles of thyristor devices
Week 2: DC choppers – forced commutation w/ aux. capacitors
Week 3: DC choppers – forced commutation w/ resonance circuits
Week 4: DC/DC converters – filters and load characteristics
Week 5: Switched-mode power supplies -- principles
Week 6: Switched-mode power supplies – design and applications
Week 7: DC/AC inverters – forced commutation
Week 8: Midterm examination
Week 9: DC/AC inverters – pulse-width modulation
Week 10: AC/DC rectifiers – one-pulse rectifiers
Week 11: AC/DC rectifiers – two-pulse and three-pulse rectifiers
Week 12: AC/DC rectifiers – six-pulse rectifiers
Week 13: AC/DC rectifiers – power quality and effect on the main transformer
Week 14: AC/DC rectifiers – bi-directional (inverter) operation
Week 15: Final exam

Text book: M.H. Rashid, "Power Electronics – Circuits, Devices, and Applications," Prentice Hall, 3rd Ed., 2003

Prerequisite: EL5613