ECE 419/619, Electric Machines and Drives, Spring 2013
Exam #1, March 14th

5 Questions, 1 sheet of notes allowed

Exam Topics

Dc Machines
- Construction and operation
- Dc machine model
- Steady-state operation
- Simulation methods
- Transfer functions and linearization

SCR Dc Drives
- SCR drive operation and waveforms
- Steady-state average-value calculations
- Skip material on
  - Negative voltage operation
  - Regenerative operation
  - Four-quadrant drives

PWM Dc Drives
- Two- and four-quadrant
- Voltage and current control
- Basic operation and waveforms
- Steady-state calculations
- Skip material on
  - Discontinuous operation
  - Non-regenerative sources and braking resistance
  - Dc drive examples 3 and 4
  - Dc control system examples 1 and 2