



EECS 42 – Introduction to Electronics for Computer Science

Spring 2002,
Dept. EECS,
UC Berkeley
Course Web Site <http://www-inst.EECS.Berkeley.EDU/~ee42/>

Prof. A. R. Neureuther
510 Cory 642-4590
OH M, Tu, W, (Th), F 11

Midterm Wed. Mar. 5th

Review Session 5-7PM, Mon. Mar 3rd, 241 Cory Hall
Old Exams on the web site (Fall 2001 is the most similar set)

Topical Coverage First Midterm

Schwarz and Oldham Material followed by skills

Chapter 0: all

Terminology: devices, circuits, systems
Advantages of digital systems

Chapter 1: all

Electrical quantities: charge, current, voltage power, energy
Electrical circuit diagrams
Kirchhoff current and voltage laws to analyze basis circuits.

Chapter 2: all except 2.4 Loop Analysis, 2.6 and 2.7, light on 2.5

Independent Ideal Sources and simple circuit analysis
Ideal resistors and resistors in series and parallel
Node analysis of circuits with up to 8 branches
Voltage and current dividers

Chapter 3: all

Equivalent circuits: simplest is Thevenin and Norton
Shortcut for finding R_{EQ} by turning sources to zero
Nonlinear loads and load lines
Power calculations

Chapter 5: all light on 5.3 and no inductor circuits.

Ideal capacitors and inductors and their 8 properties
Big ones: V continuous on capacitor, I continuous on inductor; energy

Chapter 8.1: Only 8.1

EE 40/42 simple solution method
use intuition about starting and ending values and time constant
Application to switching and pulses
KCL to get differential equation for capacitor voltage and inductor current

Likely Exam Emphasis

Basic circuit analysis with simple sources and resistors

Standard circuit analysis and equivalent circuits

Nonlinear load with a load line technique

Transient analysis

Nodal analysis of a sizeable circuit