EE321 – Fall 2002

Tentative Syllabus

Web Site: http://www.ee.nmt.edu/~rison/ee321


We will cover most of Chapters 1 through 5. If time permits we will cover some topics from Chapter 6.

1. Brief Review of Circuit Theory
   (a) Amplifier Models
   (b) Analysis of Amplifier Models
   (c) Frequency Response of Simple Amplifiers

2. Operational Amplifiers
   (a) The Ideal Op-Amp (review)
   (b) Analysis of Ideal Op-Amp Circuits (review)
   (c) Basic Op-Amp Circuits (review)
   (d) Non-Ideal Op-Amp Effects
      i. Finite Open-Loop Gain
      ii. Finite Bandwidth
      iii. DC Imperfections

• Exam 1

3. Diodes
   (a) Simple Diode Theory
   (b) I-V Relationship of Diodes
   (c) Analysis of Diode Circuits
   (d) Small-Signal Model of Diodes
   (e) Diode Circuits
      i. Zener Diodes
      ii. Rectifiers
      iii. Limiting Circuits

• Exam 2
4. Bipolar Junction Transistors
   (a) Simple BJT Theory
   (b) DC Analysis of BJTs
   (c) Small-Signal Analysis of BJTs
   (d) Biasing of BJTs
   (e) Analysis and Design of BJT Amplifier Circuits
   (f) BJTs in Saturated Mode — The BJT Switch

• Exam 3

5. Field-Effect Transistors (FETs)
   (a) Simple FET Theory
   (b) Metal Oxide Substrate FETs (MOSFETs)
      i. MOSFET Models
      ii. Biasing MOSFETs
      iii. MOSFET Amplifiers
      iv. MOSFET Switches
   (c) Junction FETs (JFETs)
      i. JFET Amplifiers
      ii. JFET Switches

6. Differential Transistor Amplifiers

7. Multistage Transistor Amplifiers

• Exam 4