

# 4312 Analog Electronic Circuits

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## Textbook:

Microelectronic Circuits, 8th Edition  
by Sedra, Smith, Carusone, Gaudet

## Review:

### Chapter 1: Signals and Amplifiers

Review of section 1.6 Freq. Response can be delayed till about  $\frac{1}{3}$  into the semester

### Chapter 2: Operational Amplifiers

We will mainly focus on the design of the internals of the operational amplifiers, but students are expected to know basic applications of operational amplifiers

### Chapter 3: Semiconductors

This is background material for students to understand the basic operation of semiconductor devices that is the basis for the device characteristics (DC, AC) for junction diodes, BJTs and MOSFETs that we will use in this course

### Chapter 4: Diodes

This is mostly background material but students need to master terminal characteristics and small signal models of junction diodes since they form key parasitic elements in transistors

### Chapter 5: MOSFETs

It is critical that students have a strong understanding of MOSFET operation and modeling

### Chapter 6: BJTs

It is critical that students have a strong understanding of MOSFET operation and modeling

The material in chapters 1, 5 and 6 will be reviewed in the first lectures of the course.

### Chapter 7: Transistor Amplifiers

### Chapter 8: Building Blocks of Integrated-Circuit Amplifiers

### Chapter 9: Differential and Multistage Amplifiers

### Chapter 10: Frequency Response

### Chapter 11: Feedback

### Chapter 12: Output Stages and Power Amplifiers

### Chapter 13: Operational-Amplifier Circuits