ECE 421/521 Study Guide #2 5 October 2015

Quote of the week: Phil Bolger “It’s apparently a basic human instinct, when presented with something that does one thing really well, to instantly want to use it for something else...”

Tasks for this week:

Study the 250 mW amplifier design amplifier presented in class, and modify it for higher power supply voltage, more power output, Darlington output stages...
Sketch a 5 watt battery powered portable audio amplifier design.

Focus on the output stage, using basic dc and ac transistor models.

A general rule--design for good performance, then add automated corrections.

Circuit schematics and simulation tutorials will be presented in class.

Homework--Sketching and simulating a design

1. Simulate the frequency response of the basic classroom amplifier using the ideal op-amp model shown in class.

2. Simulate crossover distortion of the complementary symmetry output stage with and without feedback, and investigate ways to reduce it.

Using the Textbook and other resources--Layers of the Onion metaphor.

Read: Quick overview of material to acquire basic understanding
Study: Understand the basic concepts, math models, and expressions
Practice: Do the homework problems
Reference: Create new circuits using the text material as reference

Midterm exam date:

In Class November 2. Closed book, no notes, no calculators.

Final exam content:

Standard Analog IC Design Interview Questions.