Audio Amplifier Design

Topic for this week: Design scrutiny of 10dB gain 100 mW audio amplifier for a 32 ohm load. Techniques for two-tone intermod and harmonic distortion simulation and measurements.

Exercises:

1. Starting with a blank sheet of paper, draw the schematic of your amplifier design.

2. List the areas where your design needs improvement, and list the strategy you will use to address each shortcoming.

3. Starting with a blank whiteboard or back of an envelop in a coffee shop, explain your design to at least one other student in the class.

4. Consult with at least one other student in the class while running an LTspice simulation of your design.

Most of your amplifier designs should be ready to build in the Tek and Capstone Labs and at home. Use prototype construction that facilitates making changes at the bench during measurements.

The goal is to have something functional this week, and make changes during the next two weeks. Use the scientific method--observe some behavior, come up with a theory that explains what you see, design an experiment to test your theory, use the results of your experiment to modify the theory...repeat.

There are more than forty students registered in these two classes. There are over forty amplifier designs. Over the next three weeks, observe as many of the other designs as possible, take notes, and think about how your observations might impact your own design.