Field Effect Transistors

Read all of Chapter 4 in the Textbook

Topics this week: MOSFET Models, Curves, Load Line

The lectures this week will cover the most basic MOSFET circuit, with just a load resistor and the FET. The most primitive models will be used this week. We will expand them next week for more detail on how FETs are built.

Homework, due in class November 3

A MOSFET has $V_{tn} = 1.2$ volts and $K_n = 1/1\text{kohm}$. Plot curves in the Triode region and Pinch-off region on the same plot, for currents from 0 to 10 mA and volts from 0 to 12. Find at least $V_{gs}$ values that result in maximum current of 8 mA and reasonably spaced curves. Connect the two regions by sketching curved lines.

Now plot a load line representing a 9 volt power supply and 1k load resistor. Find the values of $V_{gs}$ that will result in a quiescent current of 2mA, 4A, and 6mA.

Quiz 2:

In Class Thursday November 12. 1 Hour Closed book, no notes, no calculators. Quiz 2 covers Chapter 4 material and laboratory work using diodes circuits.