

ENEE 417 Experiments Week 4
Week starting 09/21/05
VLSI Layout

1. Learn VLSI layout and Spice extraction – for this you can use MAGIC which is a UNIX program and available through the use of XWIN on the 417 Lab computers.

You can run the MAGIC Tutorial of Mr. J. Wilinski which is available at <http://www.ee.umd.edu/newcomb/mslab-vlsi.html>

For this you will probably want to load into your magic directory the main palette available on the same web page.

The MAGIC tutorials can also be run on the Unix computers in Room 1442 or on XWIN in the Jasmine Lab

2. Layout a CMOS inverter

3. Make a corresponding Spice inverter using the MOSIS 1.6u CMOS transistor models and plot the output versus input voltage.

4. Do a Spice extraction from your layout, insert the above transistor models and required sources. Run Spice and obtain the input versus output voltage curves for your layout and compare with that from your Spice design of part 3. Make any modifications needed to make the two sets of input-output curves closely correspond.

5. Write-up a short (1 to 3 page) report on your work for week 4.

If you have not submitted a parts list for your base paper please do it right away so that you will not be handicapped later.