

PC LABORATORY PROCEDURE FOR RUNNING PSPICE:

- A) IBM or Compatible personal computer
1. The Division of Engineering Computer Services (DECS) has PCs for your use in Rooms 1307, 1312, 1318 and 1328. Please read the signs on the doors to see when the rooms are reserved. Select a PC.
 2. DECS has a user id system and you will need to follow the dialog box to log in. Your id will also be your Unix id for the computers in the college. If you find that when you sit down at a PC that the Windows desktop is available to you then this means that the last user forgot to logout. **ALL OF THEIR WORK IS STILL AVAILABLE TO YOU.** Please log them out by hitting Ctrl-Alt-Del and respond to the dialog box that appears. Re-login with your name and password. **LIKewise FOR YOU, MAKE SURE YOU FOLLOW THE LAST STEP OF THIS HANDOUT WHICH IS TO LOG OUT !**
 3. After logging in, the Windows desktop will appear.

B) Editing a File

1. There are many possible editors for creating and saving files. With PSpice, there is a user interface built into the program. You can find this program under: **Start, Programs, Cadence PSD, PSpice AD.**
2. To create a new file called **ch1_p3.cir**. Select **File** from the Menu bar and select **New, Text File**. Begin to type the following PSpice input file,


```
Curve Tracer
VDS 2 0
VGS 1 0
VSS 0 3 10
M1 2 1 0 3 MOS W=100U L=10U
* D G S B
.MODEL MOS NMOS (VTO=1 KP=17U
+ LAMBDA=.01 GAMMA=1.3 PHI=.7)
.DC VDS -10 10 0.1 VGS 0 8 1
.PROBE
.END
```


3. When you logged onto your account it became your hard disk and is drive M: under you login name. To save your file, select from the Menu bar **File**. Select **Save As...** and in **Look in** select drive M: . Under **File name** type **ch1_p3.cir** . You should print this file. Select from the Menu bar **File** and then select **Print**.

You can use a wordprocessor to do the above but you must save your file as ASCII text only. PSpice does not recognize wordprocessor formats.

4. You must close this file before you can run it the first time. Select from the Menu bar **File** and then select **Close**.

C) Running PSpice

1. Remaining in this editor. Select from the Menu bar **F**ile and **O**pen.
2. In **L**ook **i**n select drive M: . Under **F**ile **n**ame type **ch1_p3.cir** or under **F**iles of **t**ype select *.cir and then select **ch1_p3.cir**. The file name will now be displayed on the Menu bar in a dialog box. To run this file click on the arrow  to the right of the file name in the dialog box.
3. Some of your output will be placed in a file named **M:ch1_p3.out**.
4. If your program has errors, the program will not run. If this has happened proceed with the following, if not go to step 5.

What is wrong will appear on the screen in the file named **ch1_p3.out** or whatever you have named your input file. Read the comments. To fix the problem you do not need to reopen the file, just select it from one of the tabs below the black box and edit it. When finished save the file and click on the arrow  to run again.

5. A black box will appear. Select from the Menu bar **T**race and **A**dd **T**race.. . You can type ID(M1) in the **T**race **E**xpression dialog box or select it. In the **S**imulation **O**utput **V**ariables there are things like V2(VSS). This is *not* the voltage across VSS but the second node specified in the input file, that is, V(3).
6. To read data points off the screen using the Cursor control select from the Menu bar **T**race, **C**ursor, **D**isplay. Two cursors are now on your upper curve. Use the right arrow key (→) to move the cursor forward. On the bottom of the screen you will now see the values of the X and Y axis for each cursor and their difference. To move the cursor backward, use the left arrow key (←). Use the mouse for gross placement and the arrow keys for exact placement. The second cursor is controlled by holding down the Shift key and using the arrows as above.
7. Change the y-axis as indicated in the plot in the notes. Read off the value of ID(M1) at $V_{GS} = 8V$ and $V_{DS} = 5V$ or as close as you can come. This should be 1.3128 mA or something close. You can also label the value on the plot by selecting from the Menu bar **P**lot, **L**abel, **M**ark.
8. To obtain a hard copy, exit the Cursor control by selecting from the Menu bar **T**race, **C**ursor, **D**isplay. Select from the Menu bar **F**ile, **P**rint. Your output will appear on the printer in a few seconds. Please pick it up.
9. Exit the program by selecting from the Menu bar **F**ile, **E**xit.

E) Logging Off

1. Exit by hitting Ctrl-Alt-Del and respond to the dialog box that appears.