UNIVERSITY OF CALIFORNIA
College of Engineering
Department of Electrical Engineering and Computer Sciences

EE 105 Prof. Pister
Spring 2012

Names of lab partners: _____ and _____

LAB 4 NMOS - Prelab

Prelab is **due at the beginning of your lab section**. Partial credit will be given for late prelabs. Show the TA the following page completely filled out to get checked off at the beginning of your lab.
Find a copy of the ALD1106 datasheet online, and use it to answer the following questions.

1. Estimate r_o when V_{DS}=5V and I_{DS}=10mA. [hint: on the datasheet the relevant parameter is called "output conductance"]
2. From the first graph on page 3, estimate the gate bias necessary to achieve I_{DS}=10mA when V_{DS}=5V.
3. Under the bias conditions above, estimate the transconductance, g_m.
4. Estimate the voltage gain under these bias conditions, for the common source amplifier shown below.
5. How do you set the body voltage on the MOSFETs when using the ALD1106?

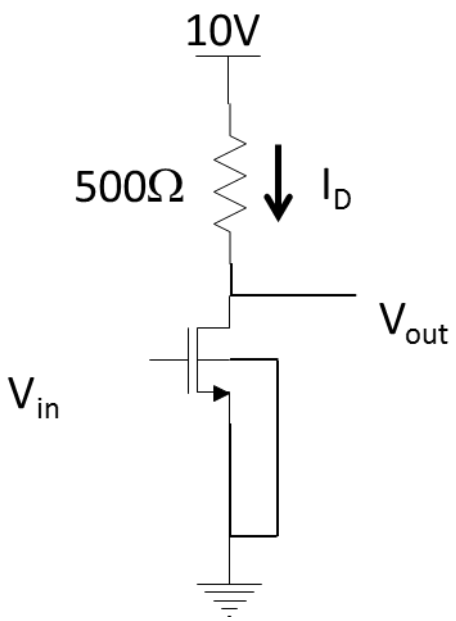

Figure 1 An NMOS common source amplifier.

r_o=	**V_{gs}=**	**g_m=**	**A_v=**