

# CS653A: Introduction to VLSI Design

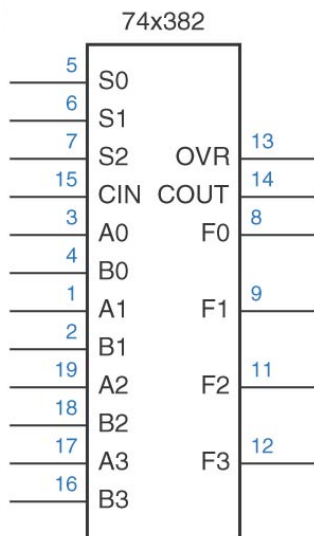
## Homework #4

**Deadline:** Thursday, January 7<sup>th</sup>, 2010

Please complete the schematic and the physical layout of a 4-bit ALU whose logic function is the same as the 74x382.

Requirements:

- (1) You must use HSPICE to verify the logic functions of your schematic.
- (2) Your layout design must pass DRC, LVS, and post-layout simulations.



<i>Inputs</i>			<i>Function</i>
S2	S1	S0	
0	0	0	F = 0000
0	0	1	F = B minus A minus 1 plus CIN
0	1	0	F = A minus B minus 1 plus CIN
0	1	1	F = A plus B plus CIN
1	0	0	F = A ⊕ B
1	0	1	F = A + B
1	1	0	F = A · B
1	1	1	F = 1111