Name: _____
Date: _____
Section: _____

Introduction to Discrete Digital Logic

Note: In this first lab, the laboratory manual will also be your worksheet. Follow the steps, fill out the blanks and turn it in!

Part 1: Create a 2- Input NAND from a 3-Input NAND

You are to design a circuit for the function F = (AB)' using a 3-Input NAND gate.

1. Draw the 3-input gate truth table.

2. Implement this circuit on the breadboard. Ask your T.A to check your implementation and sign your report.

Part 2: A function with four variables

You are to simplify the function F = A'B'C' + AB'C' + BCD + A'B'CD' + AB'CD' and design a circuit for the simplified function using any 7400 logic you wish.

1. Draw the function truth table.

A	*B*	*C*	*D*	

2. Draw the function K-map and simplify it.

3. Draw a logic diagram of the function implementation.

4. Draw a layout diagram of the implementation

5. Implement this circuit on the breadboard. Ask your TA to check your implementation and sign your report.