**CME1214 Logic Design**

**Lab 1**

# Preliminary Work

* Study Boolean Algebra and DeMorgan Theorems.
* Use Altera Max+Plus II software to implement your designs. Simulate your circuits and verify that they work correctly using the waveform.
* Prepare a preliminary report which should include logic diagrams, waveforms and all other preliminary works.
* The preliminary work and report are expected from each student **individually**.
* Bring the relevant datasheets with you to the lab, **1 per each group**.

# Equipments

* Necessary gates for the experiments (*AND – IC 7408, OR - IC 7432, NOT - IC 7414, XOR - IC 7486, NAND - IC 7400* etc. )
* Breadboard, connection cables
* Any other equipments necessary for the experiments

# Experiment 1

Construct the truth table and implement the equivalent logic circuit of

|  |  |  |  |
| --- | --- | --- | --- |
| A | B | C | F |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# Experiment 2

Design *OR (A+B)* gate entirely from **NAND** gates.

Truth Table for NAND Gate

|  |  |  |
| --- | --- | --- |
| A | B | F |
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |