# Learning Material - Experiment in ICT 2

# Week 7

## Goal of week

Student will be known how to use some equipment like breadboard, oscilloscope, multimeter, switch, lamp, and function generator. Practice assembling circuit and define its activity.

## Content and requirement

Using IC 74LS00 design a schematic circuit for the following function, after that assemble it and using oscilloscope, function generator and multimeter define output state for each input state.

$$F = A.B + C + D$$

## Experimental Equipment

| | | | |
|---|---|---|---|
| 1. Equipment Guideline | | 5. 74LS00 (4x NAND2) | x2 |
| 2. 5V Power | | 6. Led | x5 |
| 3. Breadboard | x1 | 7. Resistor 330Ω | x5 |
| 4. Multimeter | x1 | 8. Button A, B, C, D (or switch) | x4 |

## Experimental Steps

1. Test all ICs, and equipment
2. Convert above function to approximate function using NAND gate only.
3. Design a schematic for this function you have approximated
4. Using breadboard, IC and conductor assemble the circuit
5. Supply 5V power for the circuit
6. Changing each input gate and define output state for each situation.

## Experimental Report

All students must write down a report, explain everything you do in this experiment with the content:

- Draw circuit's schematic.
- Inform all result getting from this experiment
- Give some remark