

LE202: Basic Electrical Engineering Design II

Instructor: Songyot Nakariyakul, Supachai Vorapojpisut

Prerequisite: LE201

Course description:

Laboratory work and design projects on basic electronic circuits, digital systems, and electrical machines.

Course topics

Digital Circuit Lab (Songyot Nakariyakul) -- Room 508

Website: <http://songyot.ece.engr.tu.ac.th/LE202/>

Lab 1	Introduction to Logisim and digital board
Lab 2	Magnitude comparator
Lab 3	7-segment display
Lab 4	Flip-flops and synchronous sequential circuits
Lab 5	Counter

MATLAB Lab (Supachai Vorapojpisut) -- Room 507

Lab 1	MATLAB desktop; Using variables
Lab 2	Vectors and matrices computation; Writing scripts
Lab 3	Data import; Using table, text and logic data
Lab 4	Advanced plotting; Flow control; Writing function
Lab 5	Data analysis; GUI

Digital Circuit Lab

Software: We will use Logisim (<http://www.cburch.com/logisim/index.html>) to simulate circuits in this lab. Logisim is a freeware and it is easy to use.

References:

1. Stephen Brown and Zvonko Vranesic, *Fundamentals of Digital Logics with Verilog Design*, 3rd Ed., McGraw-Hill, 2013.
2. M. Morris Mano and Michael D. Ciletti, *Digital Design*, 4th Ed., Prentice Hall, 2007.

Grading: > 80% = A
< 50% = F

Lab Policy: Copying and using another person's work is not allowed.

Schedule

Date	Digital Circuits (Songyot)	Matlab (Supachai)
19 Jan 2018	Group 1	Group 2
9 Feb 2018	Group 1	Group 2
23 Feb 2018	Group 1	Group 2
2 Mar 2018	Group 1	Group 2
9 Mar 2018	Group 1	Group 2
Midterm		
23 Mar 2018	Group 2	Group 1
30 Mar 2018	Group 2	Group 1
20 Apr 2018	Group 2	Group 1
27 Apr 2018	Group 2	Group 1
4 May 2018	Group 2	Group 1