Introduction to Circuit Theory and Laboratory
2015 spring semster syllabus

Course:	Introduction to Circuit Theory and Laboratory
Course Number:	430.213A
Lecture Number:	001
Credits:	4
Instructor:	SungJune Kim (phone: 880 - 1812, email: kimsj@snu.ac.kr)
Teaching assisants:	Kyungsik Eom (phone: 010 - 7490 - 2690, email: kyungseom@gmail.com)
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Website:	Seung Hee Ahn (phone: 010 - 8633 - 6797, email: seeung12@snu.ac.kr)
Class room:	http://ee.snu.ac.kr/
Class hours:	Building 301-102
Laboratory:	Tue/Thu 14:00 ~ 15:15
	Building 301-308
Laboratory hours:	To be announced later.
Course outline:	- Learn basic knowledge of electric circuit by learning basic circuit theory and by laboratory experiment.
	- Introduce linear elements such as voltage source, current source, resistor, inductor, capacitor and their characteristics.
	- Introduce OP-Amp in linear regime and its applications in linear electric circuit.
	- Introduce Kirchhoff's current law and voltage law to interpret electric circuit.
	- Introduce The'venin's theory and Norton's theory to make equivalent circuit. Using these theory find out the maximum power delivered to the load.
	- Introduce RL circuit, RC circuit, RLC circuit and learn energy storage and release in transient time.
	- Introduce sinusoidal steady state circuit and learn about power and frequency response.
	- In the laboratory, basic electric circuit components and their usages are dealt, followed by measurement of voltage and current of each electric circuit component.
	- Design and make electric circuits from each topic. Measure and calculate the designed electric circuit and discuss the results.
	- Apply the electric circuit theory to make new creative circuit that can be implemented to real world.
Text book:	Richard C. Dorf and James A. Svobada, Introduction to Electric Circuits, 9th ed., John Wiley & Sons, Inc., New York, 2014.
Course scope:	Chapter 1 ~ 11, 13
Reference book:	[1] Raymond A. DeCarlo and Pen-Min Lin, Linear Circuit Analysis, Oxford University Press, New York, 2001
	[2] Charles K. Alexander and Matthew N.O. Sadiku, Fundamentals of Electric Circuits, 2dn ed., McGraw-Hill, New York, 2003.
	[3] Charles A. Desoer, Basic Circuit Theory, McGraw Hill, New York, 1969
	[4] Giorgio Rizzoni, Principles and Applications of Electrical Engineering, McGraw-Hill, New York, 2003.

[5] George B. Arfken and Hans-Jurgen Weber, Mathematical Methods for Physicists, Harcourt/Academic Press, 2001.

[6] Erwin Kreyszig, Advanced Engineering Mathemattics, John Wiley & Sons,Inc., New York,1993.

[7] Robert L. Boylestad, Introductory Circuit Analysis, 10th ed., Prentice Hall, Upper Saddle River, 2003.

[8] Raymond A. DeCarlo and Pen-Min Lin, Linear Circuit Analysis, Oxford University Press, New York, 2001

Grading:	- Exam 3 times, absense 7 times : F grade
	- Attendance 5pts, Homework 5pts, Midterm exam1 20pts, Midterm exam2 28pts, Final exam 32pts, Experiments 80pts, Total 170pts
	- Grades are given after summing up total points from four courses.
Notes:	- Use eTL as a course bulletin board.
	- Prerequisites: Engineering mathematics. Differential equations.
	- Laboratory hours are assigned from department.
Cheating	- Students who cheat will be dealt upon school regulations.