Basic Electrical Engineering
ECS 203

Asst. Prof. Dr. Prapun Suksompong

prapun@siit.tu.ac.th

Announcements

Office Hours:

BKD 3601-7

Tuesday	**9:30–10:30**
Tuesday	**13:30–14:30**
Thursday	**13:30–14:30**

Tutorial Session

- Wednesday, 16:15-17:15

- BKD 2501-2 (same room as lecture).

- Start: Jan 21.

- No tutoring on Jan 14.

Jan 15

- Course materials from Jan 14 are posted

- HW1 to be posted by Friday. Due: Jan 23.

More Examples

- Check these references
- C.K. Alexander and M.N.O. Sadiku, Fundamentals of Electric Circuits, 5th ed., McGraw-Hill, International Edition, 2013. (TK454 A452 2013)
- J. D. Irwin, Basic Engineering Circuit Analysis, John Wiley & Sons, 2002 (TK454 I78 2002).
- A. Agarwal and J. Lang, Foundations of Analog and Digital Electronic Circuits, Morgan Kaufmann, 2005
- J. O'Malley, Schaum's Outline of Theory and Problems of Basic Circuit Analysis, 2nd Edition, 1992 (TK454 O46 1992).
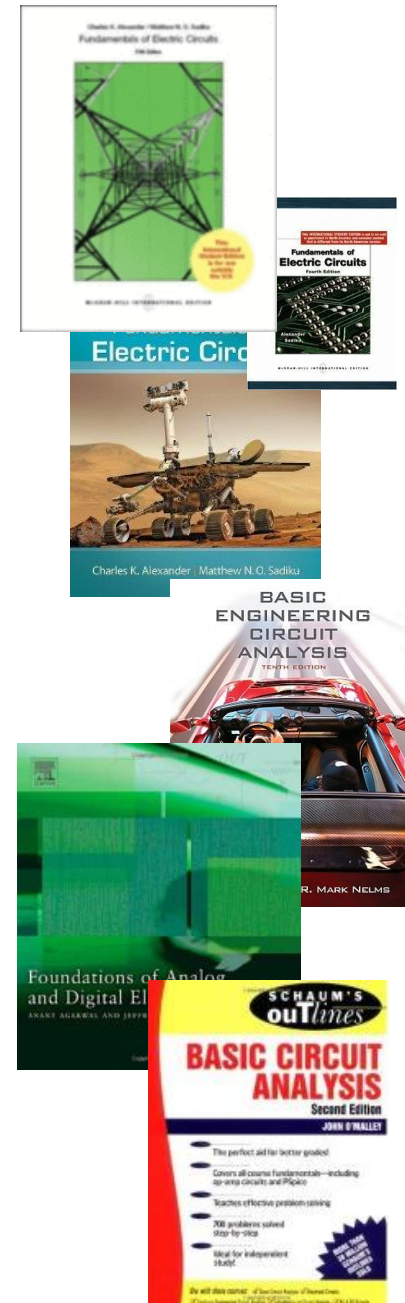
Jan 21

- Tutorial: Wednesday, 16:15-17:15
  - A bus back to Rangsit will depart at 17:30.
- HW 1 was posted last week.
  - Due: Jan 23, 5PM, in HW box (inside EC office)

  - The tutor can also answer questions you may have about HW as well.
- Part 1B of Lecture Notes is available.

Course Organization

- **Course Web Site:**

  http://www2.siit.tu.ac.th/prapun/ecs203/

- **Lectures:**

Type	Time	Room
Lecture	Wednesday 13:00-14:20	BKD 2501-2
Lecture	Thursday 09:00-10:20	BKD 2501-2
Tutorial	Wednesday 16:15-17:15	BKD 2501-2

- **Textbook:**
  - Fundamentals of Electric Circuits
    - By C.K. Alexander and M.N.O. Sadiku
    - 5th ed., International Edition, 2013.
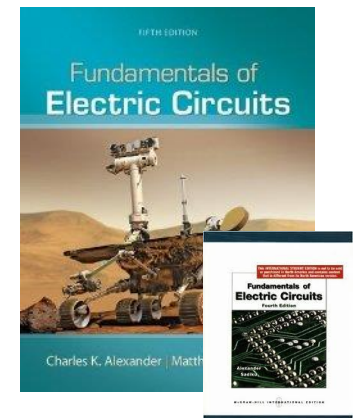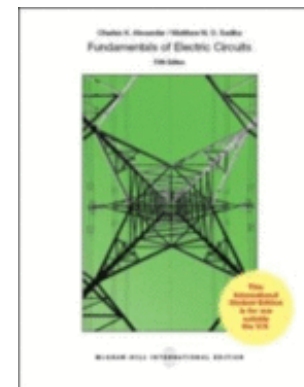
Jan 22

- HW 1 was posted last week.
  - Due: Jan 23, 5PM, in HW box (inside EC office)

- Part 1B of Lecture Notes is available.
- HW2 is to be posted.
  - Due: Jan 30, 5PM

Jan 28

- HW 2 was posted last week.
  - Due: Jan 30, 5PM, in HW box (inside EC office)

  - **Not in Dr.Prapun mailbox.**
- HW3 is to be posted by the end of this week.
  - Due: Feb 6, 5PM

"Free Energy Game!"

- Top five players

Panaya	1073
Benjamas	1053
Phannin	1014
Narut	982
Kanasuan	963

937	920	919	762	749	662	656	612	604	604	587	576	552	530	342	211

Jan 29

- HW1 was graded (by my grader).
  - 5 pt. for the graded part. (This is the score shown.)
  - 5 pt. for doing every parts (excluding the optional part(s)).
  - 1 extra credit.
- HW 2 was posted last week.
  - Due: Tomorrow, 5PM, in HW box (inside EC office)
  - **Not in Dr.Prapun mailbox.**
- HW3 is to be posted by the end of this week.
  - Due: Feb 6, 5PM

3601-1

Policy

- We will start the class on time and will finish on time.
  - I recommend arriving at least 3 minutes before the start time.
  - Raise your hand and tell me immediately if I go over the time limit.
    - Does NOT mean that I will leave the room immediately after lecture.
    - I will stay and answer questions.
- Mobile phones *must* be turned off or set in silent mode.
- We may have some **pop quiz**zes (without prior warning or announcement) and in-class activities.
- Attendance and pop quizzes will be taken/given irregularly and randomly.
- Cheating will not be tolerated.

Feb 4

- Tutorial: Wednesday, 16:15-17:15
- HW 3 was posted last week.
  - Due: Feb 6, 5PM, in HW box (inside EC office)
  - The tutor can also answer questions you may have about HW as well.
- Graded HW1 is available in the HW box.
- We are using Part 1B of the Lecture Notes.

Feb 11

- Tutorial: Wednesday, 16:15-17:15
- HW 4 was posted last week.
  - Due: Feb 13, 5PM, in HW box (inside EC office)
  - The tutor can also answer questions you may have about HW as well.
- Graded HW1 and HW2 are available in the HW box.
- We are using Part 1B of the Lecture Notes.

Feb 12

- HW 4 was posted last week.
  - Due: Feb 13, 5PM, in HW box (inside EC office)
- HW 5 is to be posted by the end of this week.
- Graded HW1 and HW2 are available in the HW box.
- We are using Part 1B of the Lecture Notes.
- Part 1C is now available.
  - To be used next week.

Feb 19

- HW 5 was posted last week.
  - Due: Feb 20, 5PM, in HW box (inside EC office)
- HW 6 is to be posted by the end of this week.
- No office hour today.
- 2009 Midterm Exam was posted on the course website.
- Tutorial next week will be replaced by a special discussion about the midterm exam.

ECS203: Basic Electrical Engineering

Synopsis

This course introduces basic electrical engineering principles and technology to students outside the electronics and communication curriculum.

Announcements

- **Information regarding midterm exam**
  - Check this course website regularly for breaking news about the midterm.
  - Date: 5 Mar 2015
  - TIME: 09:00 – 12:00
  - ROOMs: BKD 3xxx
  - ? pages + 1 cover page
  - ? Questions
  - Closed book. Closed notes. No cheat/study sheet.
  - Basic calculators (fx-991) are permitted, but borrowing is not allowed. You will need it for solving simultaneous equations.
  - Cover all the materials that we discussed in class and practice in the HWs.
  - Sample exam (from 2009)

Current version →

Previous version →

Asst. Prof. Dr.Prapun Suksompong (ผศ.ดร.ประพันธ์ สุขสมปอง) is currently a fac[ulty]... received the King's Scholarship to study in the School of Electrical and Computer... engineering students. He then received the Cornell's fellowship for his graduate s[tudy]...

Right after his graduation, he started his teaching career at SIIT. His research inte[rest]... (along with two other faculty members in the Wireless Communication Research...

นักวิจัยรุ่นใหม่ดีเด่นระดับคณะ ประเภทอาจารย์) from Thammasat University.

Ajarn Prapun always highly values the teaching aspect of his career and his life. Many of his no[...] the Cornell IEEE Student Branch "for exemplary teaching in ECE". In 2010 and in 2014, he als[o]...

For more information, here is his CV. (Download pdf version.)

Teaching

- For 2/2014, he teaches
  - ECS203 (Basic Electrical Engineering) (For non-major students)
  - ECS455 (Mobile Communications)
  - ECS204 (Basic Electrical Engineering Laboratory) (For non-major students)
- For 1/2014, he taught
  - ECS315 (Probability and Random Processes)
  - ECS452 (Digital Communication Systems)
- In 2014, Dr.Prapun received the 2013 Best Teaching Award from SIIT.
- Slides for EC Talk: Introducing ECS 452, ECS 455, and tentative senior project topics
- For 2/2013, he taught
  - ECS204 (Basic Electrical Engineering Laboratory) (For non-major students)
  - ET601 (Computer Applications for Engineers) (For PEA students)
- In 2014, he received the 2013 Outstanding Young Researcher Award (รางวัลนักวิจัยรุ่นใหม่...
- For 1/2013, he taught
  - ECS315 (Probability and Random Processes)
  - ECS203 (Basic Electrical Engineering) (For non-major students)
  - ECS452 (Digital Communication Systems)
- For 2/2012, he taught
  - ECS204 (Basic Electrical Engineering Laboratory) (For non-major students)
  - ECS455 (Mobile Communications)
  - SCS139 (Applied Physics II) (Last 5 weeks)
- For 1/2012, he taught
  - ECS315 (Probability and Random Processes)
  - ECS332 (Principles of Communications)
  - 3.2 Wireless Communication Engineering (as a co-lecturer)
- For 2/2011, he taught
  - ECS204 (Basic Electrical Engineering Laboratory) (For non-major students)
  - ECS455 (Mobile Communications)

Midterm Results

ECS203 Midterm 2014/2
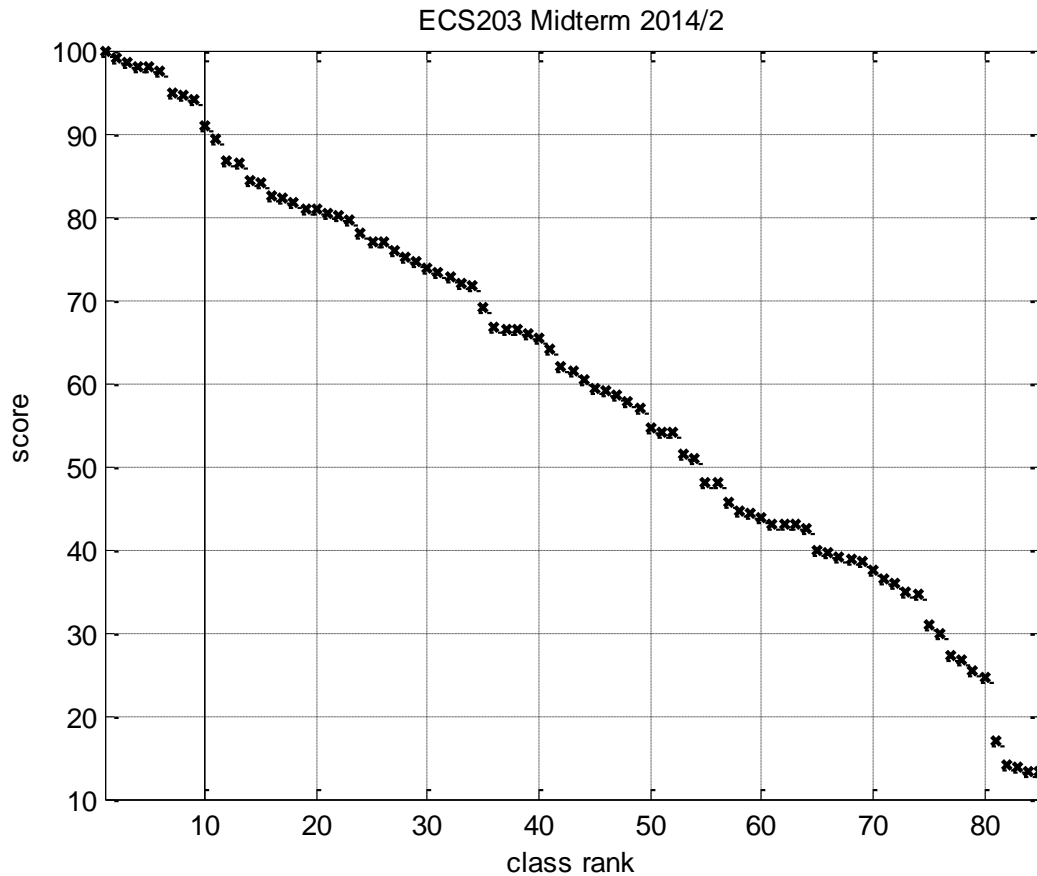
Mean: 60
Std: 24

ECS203: Basic Electrical Engineering

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This course introduces basic electrical engineering principles and technology to students outside the electronics and communication curriculum.

Announcements

- Midterm Results : Mean 60, Std 24
- **Information regarding midterm exam**
    - Check this course website regularly for breaking news about the midterm.
    - Date: 5 Mar 2015
    - TIME: 09:00 – 12:00

No tutorial today...

- Visit Aj.Prapun's office to take a look at your graded midterm exam.

March 19

- New set of lecture notes (Chapters 6, 7, 8) is available.
- Online self-evaluation
  - Due: This Friday (Mar 20)
- HW8
  - To be posted this afternoon.
  - Due: Next Friday (Mar 27)

March 25

- New set of lecture notes (Chapters 6, 7, 8) is available.
- HW8
  - Due: Friday (Mar 27)

March 26

- HW8
  - Due: Friday (Mar 27)
- HW9
  - To be posted by this Friday
  - Due: Friday (Apr 3)

April 1

- HW9
  - Due: Friday (Apr 3)

April 2

- HW9
  - Due: Friday (Apr 3)
- HW10
  - To be posted by Friday
  - Due: Friday (Apr 10)

Grading System

- Coursework will be weighted as follows:

Assignments
Class Participation and Quizzes
Midterm Examination •5 Mar 2015 TIME 09:00 - 12:00
Final Examination (comprehensive) •14 May 2015 TIME 09:00 - 12:00

Please Double-Check Exam Days!

Grading System

- Coursework will be weighted as follows:

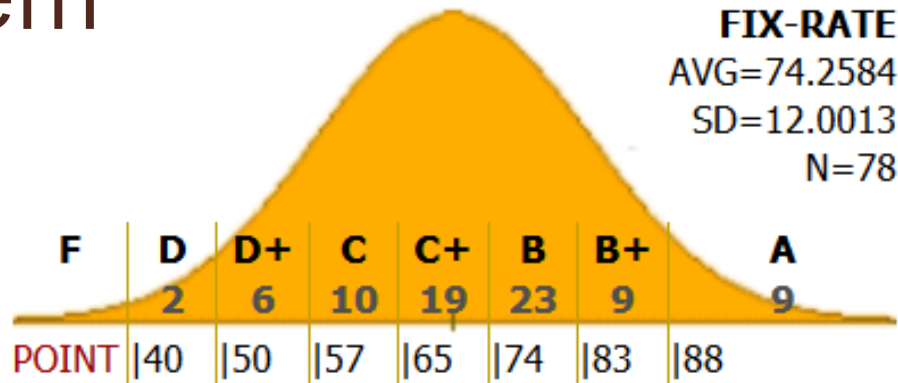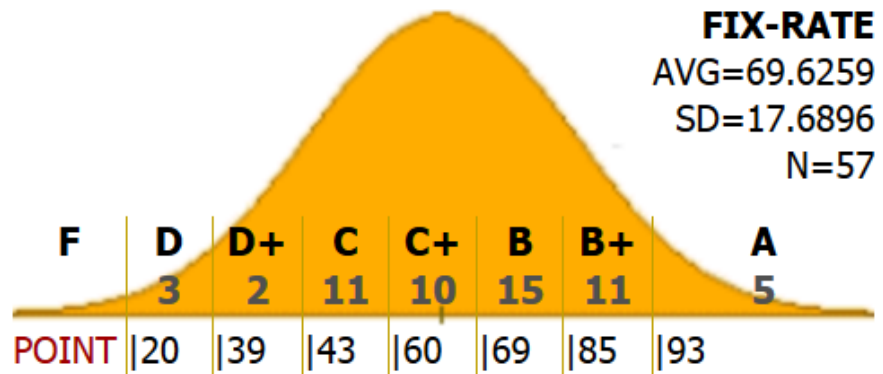|	
Assignments	5%
Class Participation and Quizzes	15%
Midterm Examination •5 Mar 2015 TIME 09:00 - 12:00	40%
Final Examination (comprehensive) •14 May 2015 TIME 09:00 - 12:00	40%

Please Double-Check Exam Days!

Grading System

ECS203: 2013

CLASS GPA.: 2.76

ECS203: 2010

CLASS GPA.: 2.73

ECS303: 2009

CLASS GPA.: 2.75

FIX-RATE
AVG=74.2584
SD=12.0013
N=78

	F	D	D+	C	C+	B	B+		A
		2	6	10	19	23	9		9
POINT	|40	|50	|57	|65	|74	|83	|88		

FIX-RATE
AVG=69.6259
SD=17.6896
N=57

	F	D	D+	C	C+	B	B+		A
		3	2	11	10	15	11		5
POINT	|20	|39	|43	|60	|69	|85	|93		

FIX-RATE
AVG=71.6159
SD=13.1959
N=22

	F	D	D+	C	C+	B	B+		A
		1	1		11	5	2		2
POINT	|40	|50	|55	|60	|75	|85	|90		
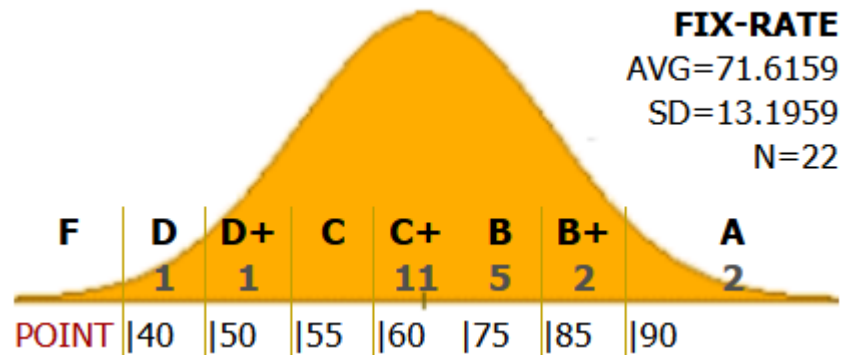
Help and Office Hours

- Get some help!
  - Do not wait until the final exam time or after the grade is out.
  - Right after lecture is always a good time to ask question.
- Office Hours (BKD-3601-7)
  - Time: T9:30-10:30, T13:30-14:30, W13:30-14:30
  - Appointment can be made.
  - Tutorial session can be arranged.
  - Feel free to come to my office and chat!
  - Don't be shy.

Office Hours:
BKD 3601-7

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Tuesday	**13:30-14:30**
Thursday	**13:30-14:30**

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- **Lectures:**

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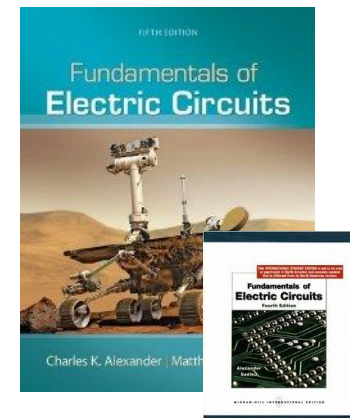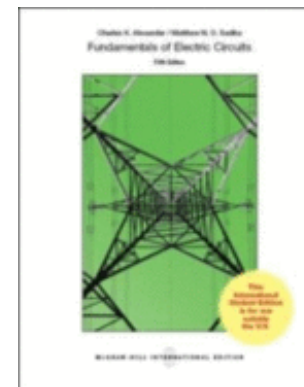
April 8

- HW10
  - Due: Friday (Apr 10)
- Note: Make sure that you learn how to use your calculator to work with complex numbers during the tutorial session today.

April 9

- HW10
  - Due: Friday (Apr 10)
- Next week,
  - No lecture on Wednesday
  - Normal lecture on Thursday
- HW11
  - To be posted by this Friday
  - Due: Friday (Apr 24)

April 22

- HW11
  - Due: Friday (Apr 24)
- Lecture notes part 2B (Chapter 9) and part C (Chapter 10) are now available at the copy center and on the course website.
  - To be used tomorrow.

April 29

- HW12
  - Due: Friday (May 1)
  - Typo:
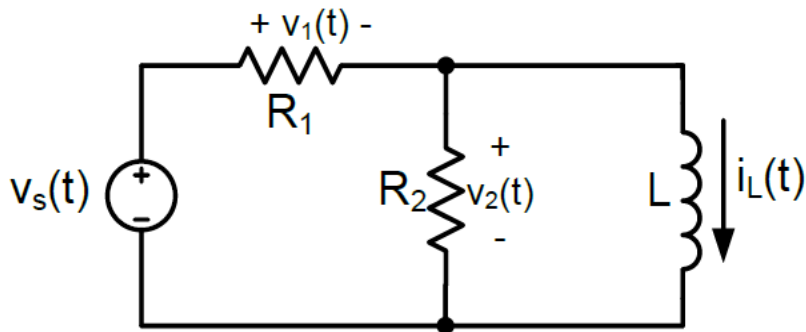
4. [F2010] Consider the circuit below.

Figure 2

Suppose

$$v_s(t) = 7\cos\left(200t + 30^\circ\right) \text{ V},$$

$R_1 = 6\ \Omega$, $R_2 = 4\ \Omega$, and $L = 5$ mH.

Remark: Note that this is a continuation of a question from the previous assignments. Find the instantaneous power absorbed by R_1.   a

b a. Find the average power absorbed by R_1

c b. Find the average power absorbed by L

d c. Find the average power **absorbed** by the voltage source.

April 30

- HW12
  - Due: Friday (May 1)
- HW13
  - Due: Friday (May 8)
- HW14
  - Free
- When http://www2.siit.tu.ac.th/prapun/ is down, new content will be posted to the SIIT lecture note system.

May 6

- HW13
  - Due: Friday (May 8)
- HW14
  - Free
- Self-Evaluation Form (2)
  - Due: May 15
- When http://www2.siit.tu.ac.th/prapun/ is down, new content will be posted to the SIIT lecture note system.

Final exam

- 14 May 2015 TIME 09:00 - 12:00
- ROOM BKD 2501-2, 2506, 2601, 2602
- Check the course website regularly.
  - Material distributions
  - Cover page of exam
- You will need a calculator (fx-991). Make sure that you can work quickly with calculation involving complex numbers.
- Closed book. Closed notes.
- One A4 sheet allowed.
  - Must be hand-written. No small pieces of paper notes glued/attached on top of it.
  - Indicate your name and ID on the upper right corner of the sheet (in portrait orientation).
  - **Submit your formula sheet with your final exam**. (You can get it back from me next semester.)