

# Principles of Communications

ECS 332

Dr. Prapun Suksompong

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## Introduction



### Office Hours:

BKD 3601-7

Monday 9:30-10:30  
Monday 14:00-16:00  
Thursday 16:00-17:00

2

## Course Web Site

[prapun.com](http://prapun.com)



### Teaching

- For 1/2015, he teaches
  - ECS315 (Probability and Random Processes)
  - ECS332 (Principles of Communications)
  - ECS204 (Basic Electrical Engineering Laboratory) (For non-major students)
- For 2/2014, he taught
  - ECS203 (Basic Electrical Engineering) (For non-major students)



- For 1/2012, he taught
  - ECS315 (Probability and Random Processes)
  - ECS332 (Principles of Communications)
  - 3.2 Wireless Communication Engineering (as a co-lect)
- For 2/2011, he taught
  - ECS204 (Basic Electrical Engineering Laboratory) (For non-major students)
  - ECS455 (Mobile Communications)
  - IES302 (Engineering Statistics)
- For 1/2011, he taught
  - ECS315 (Probability and Random Processes)
  - ECS332 (Principles of Communications)
  - 3.2 Wireless Communication Engineering (as a co-lect)
  - TU130: A lecture on "Next-Generation Wireless Com

6

## Getting Info About This Course

- The **syllabus** contains tentative information.
- I will announce **in class** and on the **web site** if there is any change.
- You are **responsible** for making sure that you obtain this information.
- Come to classes **on time** and listen carefully for **announcement(s)**.
- For those who want a preview of the class materials, old slides along with the notes and HWs from earlier years are available on my web site ([prapun.com](http://prapun.com)).

Announcements



5

## RSS Feed



<http://page2rss.com/page?url=www2.siiit.tu.ac.th/prapun/ecs332/index.html>

ECS 332: Principles of Communications 8+1 0  
<http://www2.siiit.tu.ac.th/prapun/ecs332/index.html> - Last Checked 08/08/15 20:07:10 - Added: 06/08/11 07:39:07

23 Jul 2015 22:08

- Office:
- Course Introduction
  - Section 1 (Intro. to Commu. Systems)
  - Section 2 (Frequency-Domain Analysis)
- 1. HW 1 (Due: )

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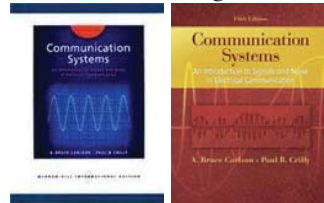


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9

## Course Organization

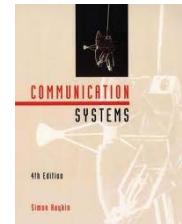
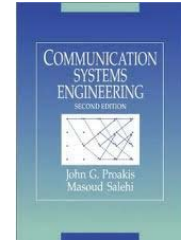
- **Course Website:**  
<http://www2.siit.tu.ac.th/prapun/ecs332/>
- **Lectures:**
  - **Tuesday 10:40-12:00 BKD 2601**
  - **Thursday 13:00-14:20 BKD 2506**
- Tutorial/Quiz/Make-up sessions:
  - **Wednesday 09:20-10:20 BKD 2601 (Shared with ECS315)**
- **Textbook:** Communication Systems: An Introduction to Signals and Noise in Electrical Communication
  - By A. Bruce Carlson and Paul B. Crilly
  - 5th International edition
  - Call No. TK5102.5 C3 2010
  - ISBN: 978-007-126332-0



10

## More references

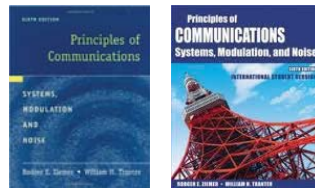
- J. G. **Proakis** and M. **Salehi**,  
Communication Systems Engineering,  
2nd Edition, Prentice Hall, 2002. ISBN:  
0-13-095007-6
- S.S. **Haykin**, Communication Systems,  
4th Edition, John Wiley & Sons, 2001.  
Call Number: TK5101 H38 2001.



12

## More references

- Principles of Communications
  - By Rodger E. **Zierner**  
and William H. **Tranter**
  - 6th International student edition
  - ISBN 978-0-470-39878-4
  - Library Call No. TK5105 Z54 2010
  - **Student Companion Site:** <http://bit.ly/mN18kQ>
- Modern Digital and Analog Communication Systems
  - By B.P. **Lathi** and Zhi **Ding**
  - 4th Edition
  - Library Call No. TK5101 L333 2009



11

## Another Reference (in Thai)



- รศ. ดร. ลัญฉกร วุฒิลิทธิกุลกิจ และคณะ, หลักการไฟฟ้าสื่อสาร, พิมพ์ครั้งที่ 2, สำนักพิมพ์แห่งจุฬาลงกรณ์มหาวิทยาลัย, 2554. ISBN: 978-974-03-2770-7
  - หนังสือ หลักการไฟฟ้าสื่อสาร เล่มนี้กล่าวถึง ทฤษฎีการแปลงฟูเรียร์ (Fourier transform) ระบบเชิงเส้น สหสัมพันธ์ (Correlation) ความหนาแน่นสเปกตรัม (Spectral density) การมอดูเลตเชิงแอมพลิจูด (amplitude modulation) การมอดูเลตเชิงมุม (angle modulation) กระบวนการสุ่ม (random process) สัญญาณรบกวน (noise) ทฤษฎีการซีกตัวอย่าง (sampling theory) การมอดูเลตโดยใช้พัลส์ (pulse modulation) การส่งผ่านพัลส์แบบแบนด์ (baseband pulse transmission) การมอดูเลตแบบตพาส (digital passband transmission) และทฤษฎีข่าวสาร (information)
  - หนังสือเล่มนี้เป็นผลจากความร่วมมือทางวิชาการของคณาจารย์จากหลายสถาบันการศึกษาที่มีชื่อเสียงของประเทศหลายแห่ง

13

[<http://www.chulabook.com/description.asp?barcode=9789740327707>]

## Grading System

- Coursework will be weighted as follows:

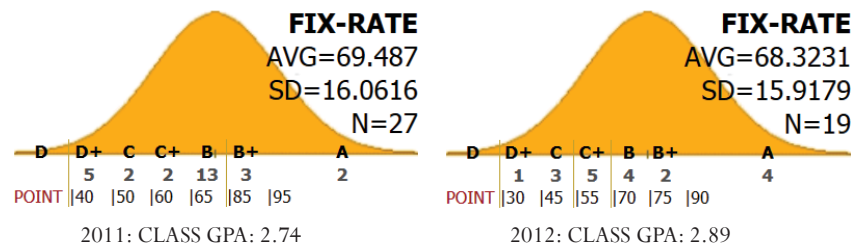
Assignments	5%
Class Participation and Quizzes	15%
Midterm Examination •5 Oct 2015 TIME 09:00 - 12:00	40%
Final Examination (comprehensive) •11 Dec 2015 TIME 09:00 - 12:00	40%

- Mark your calendars now!
- Late HW submission will be rejected.

## Class Participation

- NOT the same as class attendance!
- If you come only to **receive**, you will fall **asleep**.
  - Do not simply sit quietly in the class.
- Need **interaction** between lecturer and students.
- Ask question** when there is something that you don't understand.
  - Don't be shy!
  - It is very likely that your friends don't understand it as well.
- If you already understand what I'm presenting, **SHOW ME!**
  - Point out the errors/typos.
  - I will raise many issues/questions in class. Try to comment on them.

## Grading System



## Class Participation (2)

- Record what you have done.
  - Submitted before the midterm and before the final.

**ECS 332: Self-Evaluation 2015**

1. The class participation score for this class is judged by how much you actively participate in the class discussion both inside and outside of the classroom.

2. Please honestly answer the following questions. Please provide as much information as possible. Do not include the activities that you have already stated in the first self-evaluation form.

Name

Student ID

How many times have you been absent from the class? Are there any specific reason(s)? Please explain.

How many times have you been late (> 30s) for the class? Are there any specific reason(s)? Please explain.


How many times have you participated (provided comments, asked questions, answered questions, etc) in the lectures? Be specific. Provide some short description for each event. Number alone does not count.

How many times have you correctly informed the instructors the typo or mistake on the whiteboard/slides/hw/etc? Please provide some short description about each of the issues.

How many times have you discussed with the instructor outside of class? (Ask questions, express concerns, etc.) Be specific.

## Policy

Which clock?

- 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 quizzes** (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.

## 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)
  - Time: M 9:30-10:30, M 14:00-16:00, R 16:00-17:00
  - Appointment can be made.
  - Feel free to come to my office and chat!
  - Don't be shy.

Office Hours:	
BKD 3601-7	
Monday	9:30-10:30
Monday	14:00-16:00
Thursday	16:00-17:00

## Policy (con't)

- Feel free to stop me when I talk too fast or too slow.
- I will surely make some **mistakes** in lectures / HWs / exams.
  - Some amount of class participation scores will be reserved to reward the **first** student who inform me about each of these mistakes.
    - Grammatical errors are best informed/corrected after class.
- Points on quizzes/ exercises/ exams are generally based on your entire solution, not your final answer.
  - You can get full credit even when you have the wrong final answer.
  - You may get **zero** even when you write down a right answer without justification.

## Remarks

- Get as much **legitimate** help as you can
- **Participate actively in class** and outside of class
  - Record what you have done.
- If you feel that the class is very easy, you might overlook something.
- If you feel that the class is very difficult, you are probably not the only one who feel that way.
  - Don't give up. Chat with me.
  - It takes me a long time to feel comfortable with these materials; yet, I still make mistakes.
- My notation can be different from the textbook.
  - Every notation has some advantages and disadvantages.