

# 204529 Wireless Local Area Networks 3(3-0)

1<sup>st</sup> semester 2014 (August – December)

## Instructor Information

Instructor: Assoc.Prof.Dr. Anan Phonphoem  
Office: Building 15, Room # 407, #710 (IWING Lab)  
Office Hours: Monday 11:00 – 13:00 (Walk-In) or by appointment  
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## Course Information

Lecture: Friday 6 – 9 PM Building 15, Room 507  
Class URL: <http://www.cpe.ku.ac.th/~anan/>  
Prerequisite: 204325 Data Communication and Computer Networks  
Course Description: Introduction to wireless networks, Wireless Local Area Networks (WLANs), WLAN technologies, standards, and components, IEEE 802.11 standard, Wireless medium access control, Wireless Physical layer architecture, WLAN system design, integration and implementation, WLAN security, Related topics such as WPAN (Bluetooth), WMAN (WiMax), Long Term Evolution (LTE), Introduction to Mobile Adhoc Network  
Course Objective: Students become familiar with Wireless Local Area Network topics and some WLAN simulation tools. Students should understand the researches and be able to conduct further researches in the fields.  
Text Book: -  
Supplement: 1. “แลนไร้สาย” ฉบับดัดแปลงเพิ่มเติม, ซีเอ็ดดูเคชั่น, 2007, ISBN: 978-974-212-581- 3  
2. “802.11 Wireless Networks”, Matthew S.Gast, O’Reilly & Associates, Inc., April 2002, ISBN 0-596-00183-5  
3. **Standards and Recent related publications**

## Grades

Midterm exam:	40 %	Final exam:	40 %
Project report & presentation:	10 %	HW and assignment:	10 %

## Attendance Score

Description	Score (0 – 1)
0 – 15 min	1
15.01 – 100 min	(100 – MinLate)/100
> 100 min	0
If missing class	
• with “letter of leave of absence in advanced”	0.5
• without “letter of leave of absence in advanced”	0

## Grading Policy

- Your Grade is based on the overall class performance.
- An “F” grade will be given to any form of cheating (for all parties).
- You are not allowed to take the exam (or quiz) if > 15 min late.
- Make-up exam will only be provided for restrict circumstances such as severe illness.
- If ((Attendance Score  $\geq$  87% ) and (You are the 1st rank for the particular grade))  
Then (one stop adjustment automatically) /\* e.g. “B+” becomes “A” \*/

## Assignment Policy

- All hard-copy assignments must be handed in at the beginning of the class (> 15 min. is considered late). For soft-copy will be timed by the local time stamp.
- No Late assignment will be graded.
- No credit for plagiarism and considered as cheating.
- No credit for copying assignment (for all copies) and considered as cheating.

## Tentative Course Schedule

Week	Description	NS-3 Simulation / Research / Project
1	Course orientation; Intro.to Wireless Networks; Intro. to WLAN	Intro to NS-3 Linux Preparation
2	WLAN Standards and Components	Compile and Install
3	WLAN MAC Layer	Basic Sim 1
4	WLAN Physical Layer	
5	WLAN Design and Implementation	Basic Sim 2
6	WLAN Security	
7	Hand-on and Demo (WLAN configuration; WLAN security)	Basic Sim 3
8	Midterm Exam	
9	IEEE 802.11 standards update	
10	Network Simulation for wireless network (NS-3)	WLAN SIM
11	WLAN performance analysis	Performance Analysis
12	WPAN (e.g. Bluetooth; Zigbee); WiMax	Wireless Research
13	LTE	Project Assignment
14	Adhoc Network (e.g. VANET; DTN; Sensor Net)	
15	Wireless Application	Project presentation
16	Final Exam	