

01204529 Wireless Local Area Networks 3(3-0)

1st semester 2020 (Aug – Dec 2020)

Instructor Information

Instructor: Assoc. Prof. Dr. Anan Phonphoem (อศ.ดร.อนันต์ ผลเพิ่ม)
Co-Instructor: Asst. Prof. Dr. Aphirak Jansang (ผศ.ดร.อภิรักษ์ จันทร์สวัสดิ์)
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Course Information

Lecture: Friday 6 – 9 PM Building 15, Room 504 (Mobile Dev. Center)
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 Long Term Evolution (LTE), Introduction to Mobile Adhoc Network, LoRA, IEEE802.11ah
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.” อนันต์ ผลเพิ่ม, 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 (Tentative, may be changed)

Midterm exam:	35 %	Final exam:	35 %
Project report & presentation:	15 %	HW / Simulation / Assignment:	15 %

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.

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	NS-3: 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	IEEE802.11 ah	Project Assignment
11	WLAN performance analysis	Performance Analysis
12	LoRA	
13	Adhoc Network (e.g. VANET; DTN; Sensor Net)	
14	Wireless Network Application and Implementation	Project presentation
15	Final Exam	