

Broadband Mobile Communications

Syllabus

Logistics

- Instructor: Jung-Chun Kao (高榮駿)
 - Email: jungchuk@cs.nthu.edu.tw
 - Office hour: Thu. 4:30-5:30pm (台達館 609)
- TA:
 - Email: (see the class website)
 - Office hour: (see the class website)
- Meeting times
 - Tuesdays 15:30 – 17:20
 - Thursdays 15:30 – 16:20
 - 台達館 108
- Class web page
 - eeclass (<https://eeclass.nthu.edu.tw>)

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Textbook and grading

- My handouts
 - No textbook
- References
 - A. Kumar, D. Manjunath, and J. Kuri, "Wireless Networking," 2008, Morgan Kaufmann Publication
 - J. G. Andrews, A. Ghosh, and R. Muhamed, "Fundamentals of WiMAX," Prentice Hall
- Tentative grading policy
 - Midterm exam: 40%
 - Final exam: 40%
 - Homework: 10%
 - Participation: 10%

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Tentative syllabus

- Basic topics
 - Review of engineering math, communication systems, wireless channel impairments (e.g., co-channel interference, path loss, shadowing, inter-symbol interference, channel fading, noise) and models, modulation and signal constellation, multiple access, cellular network concept
- Core topics
 - OFDM (Orthogonal Frequency Division Multiplexing)
 - Resource allocation
- Advanced topics
 - MIMO (multiple-input and multiple-output)
 - Performance modeling and analysis, network coding, advanced transmission control technology, ...

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Pre-requisites

- Required
 - Undergrad-level engineering mathematics
 - Calculus, probability, ...
- Recommended but not required
 - Introduction to computer networks, ...