무선네트워크와응용
(Wireless Networks and Applications)

* 공지 주기적으로 확인
* 추가적인 개인공부를 추천합니다.

- **강좌소개**
  Course Introduction

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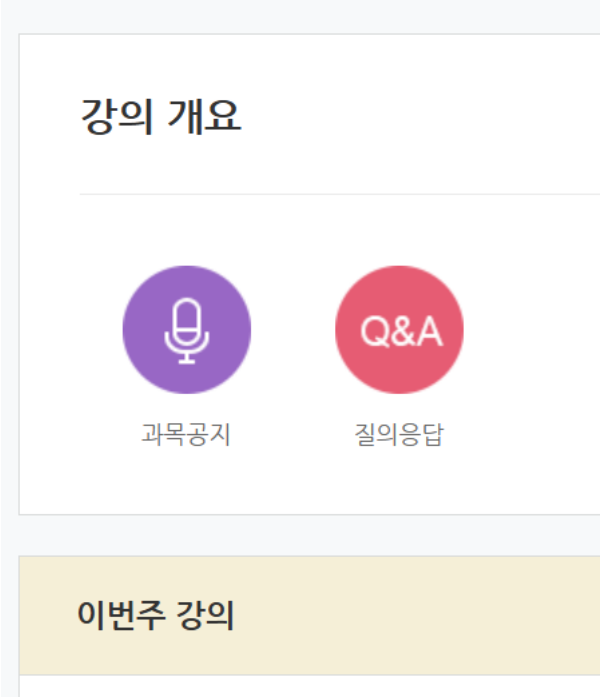
- **Lectures:** 목 14:00~14:50,
  금 13:00~14:50

  (5공학관 505)

- Check notice regularly

- Possible Special Lectures by Industry Experts



What is this course about? (이 강의는 무엇에 관한 것인가요?)

- Introductory (first) course in computer networking (컴퓨터 네트워킹의 기초(첫 번째) 과정)
- Basic understanding of common modern wireless networking technology and terminology (현대 무선 네트워킹 기술과 용어에 대한 기본 이해)
- Learn principles of wireless networking (무선 네트워킹의 원리를 학습)
- Learn practice of wireless networking (무선 네트워킹의 실무를 학습)
- Internet architecture/protocols (인터넷 아키텍처 및 프로토콜)
- Glimpses into the future of networking (네트워킹의 미래 전망)

Not Goals of Class

- **This is a course on**
  - Understanding and analyzing protocols and algorithms in wireless networking systems

- 이 강의는 무선 네트워크 시스템에서 프로토콜과 알고리즘을 이해하고 분석하는 과정입니다.

Resources/Textbooks

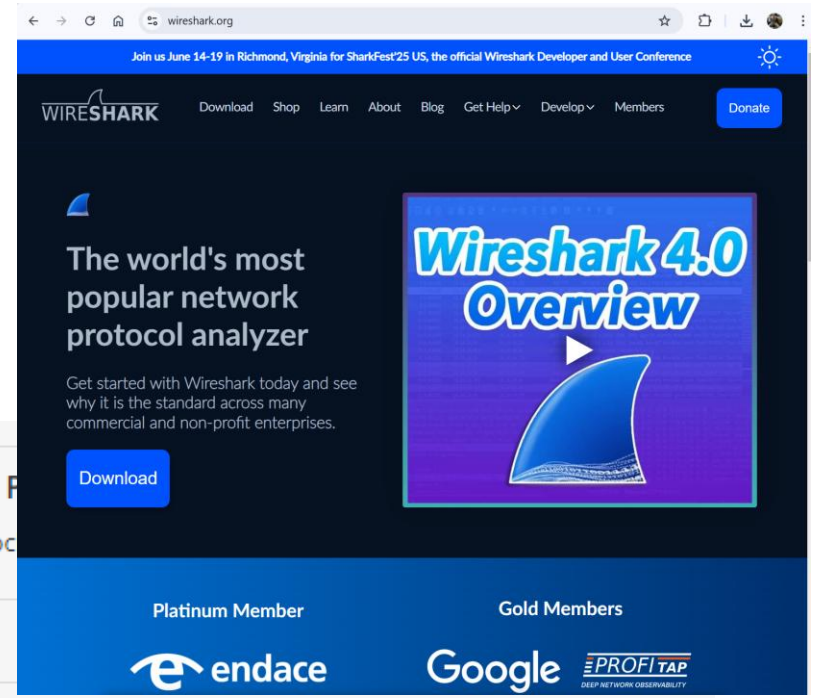
- The course materials for this class are compiled from a variety of sources, including **books, research articles, and online sources**. (이 수업의 교재 자료는 책, 연구 논문, 온라인 자료 등 다양한 출처에서 수집되었습니다.)
- A textbook is not required, as I will upload all necessary materials to the online lecture support system (e-Ruri). (교과서는 필요하지 않으며, 필요한 모든 자료는 온라인 강의 지원 시스템(e-Ruri)에 업로드할 예정입니다.)
- Please download and utilize them as needed. (필요한 자료를 다운로드하여 사용해 주세요.)
  - **Reference books:**
    - Computer Networking - a Top-Down Approach by James Kurose, Keith Ross, Pearson Education
    - Wireless Communications & Networks by William Stallings, Pearson College Div

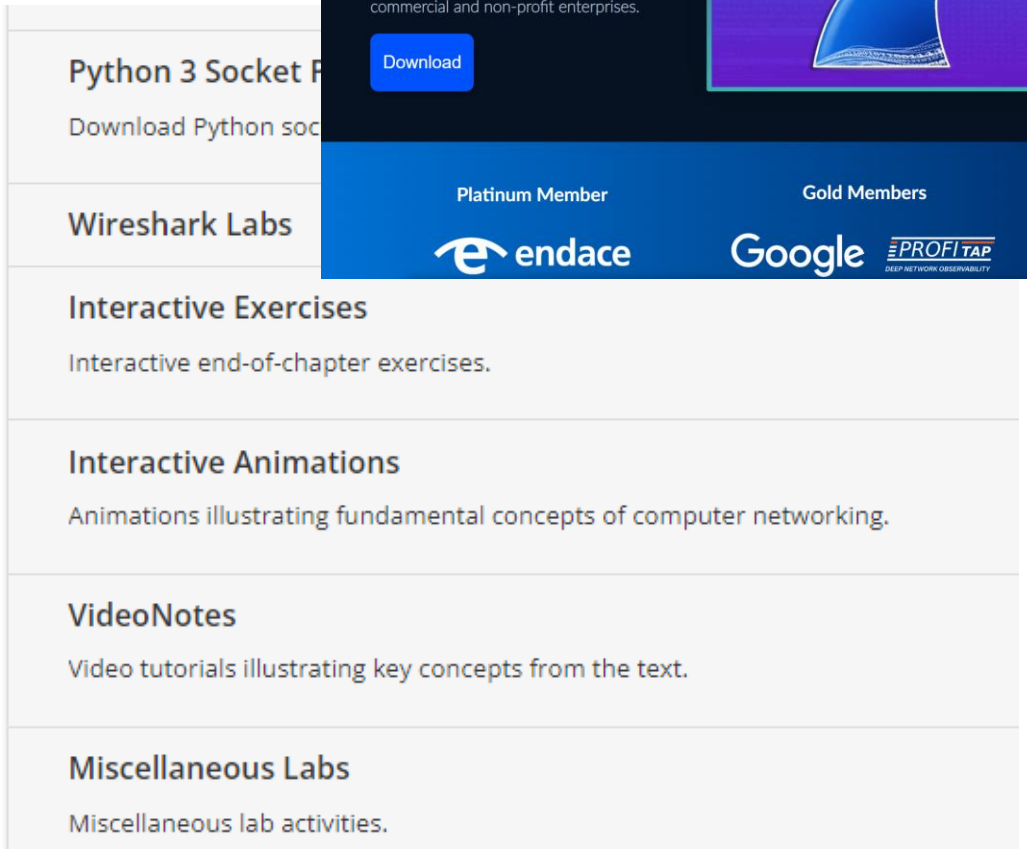
Resources

The Web Site:

https://media.pearsoncmg.com/ph/esm/ecs_kurose_compnetwork_8/cw/, which includes:

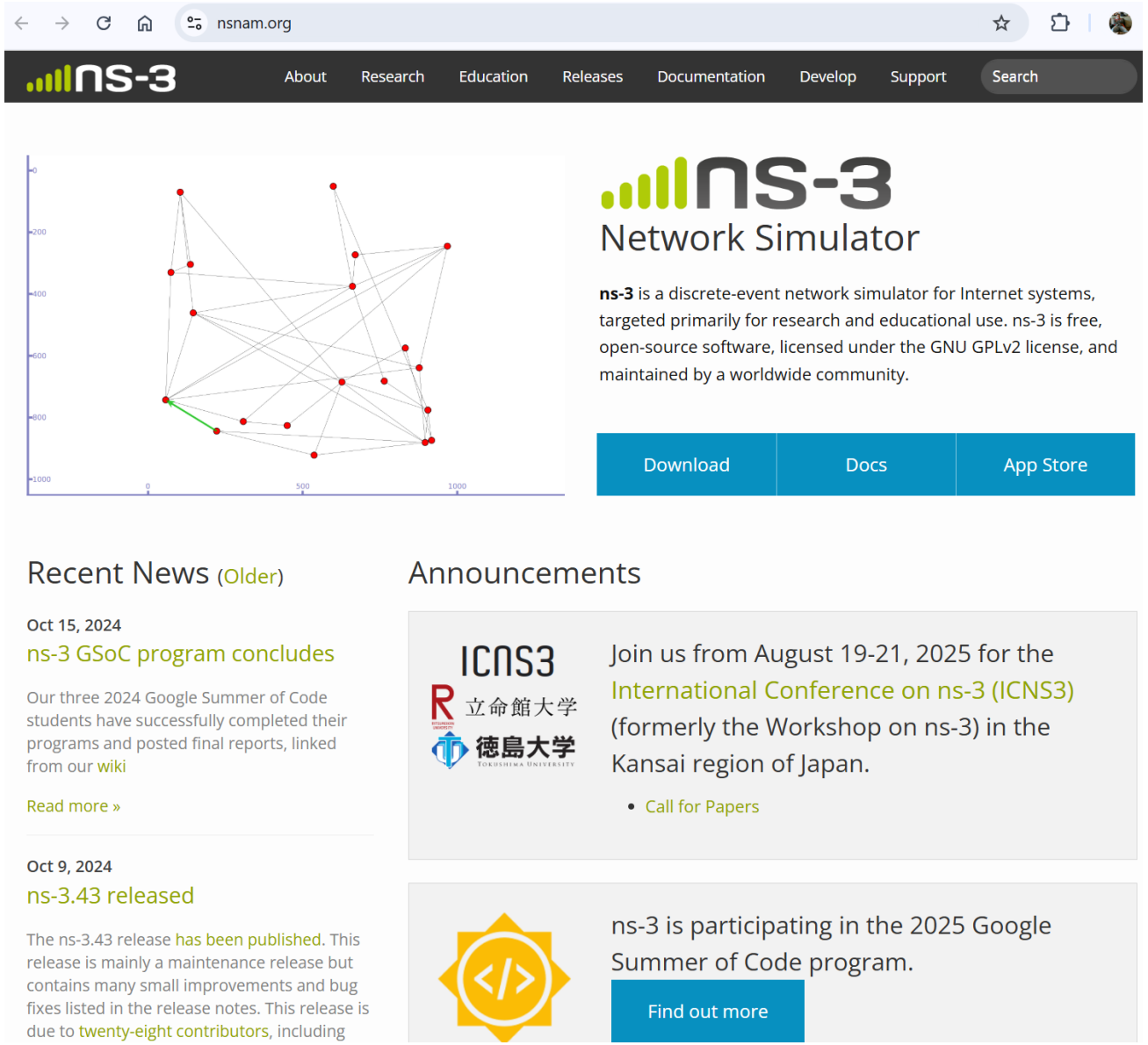
- *Programming examples*
- *Wireshark labs*





Resources

For Wi-Fi, 5G, IoT, and ad-hoc networks

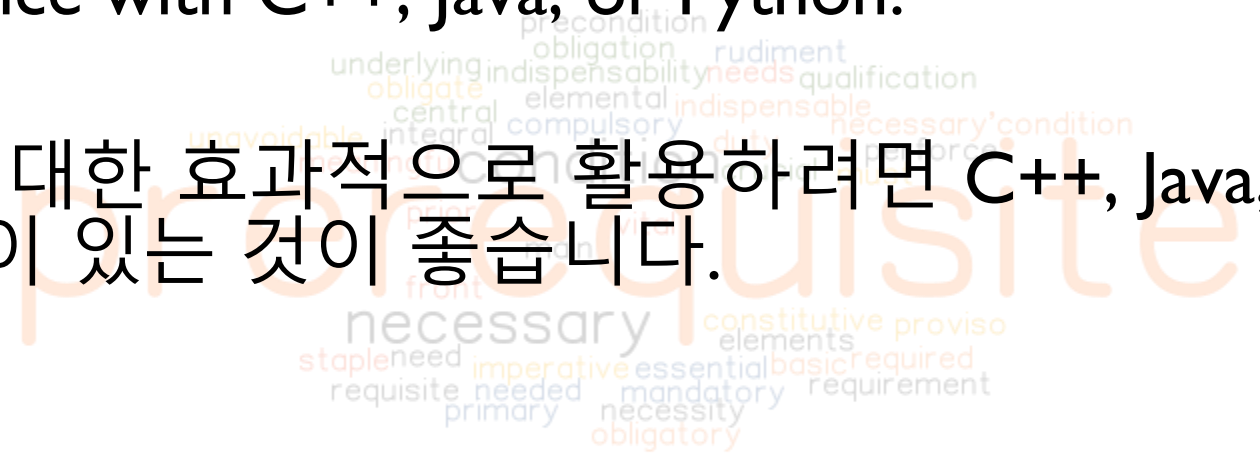


Prerequisites (선수 과목)

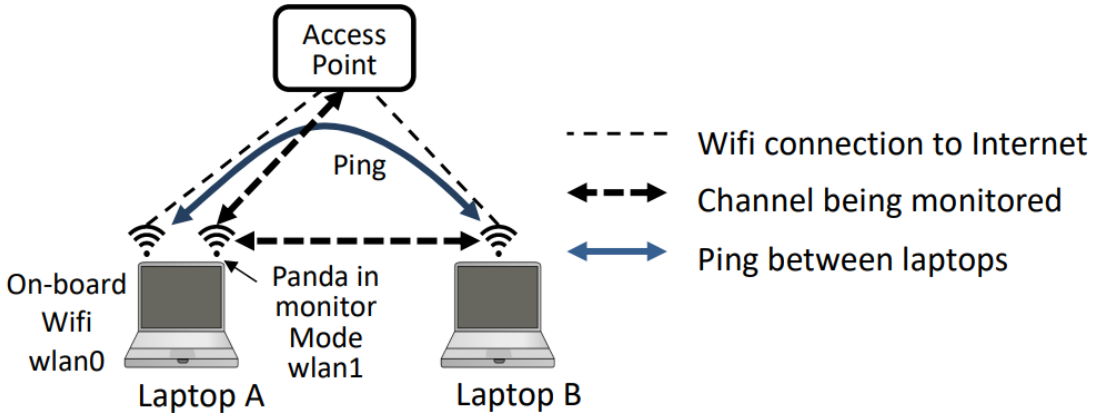
You will get the most out of this course if you:

- have experience with C++, Java, or Python.

- 이 강의를 최대한 효과적으로 활용하려면 C++, Java, 또는 Python 경험이 있는 것이 좋습니다.



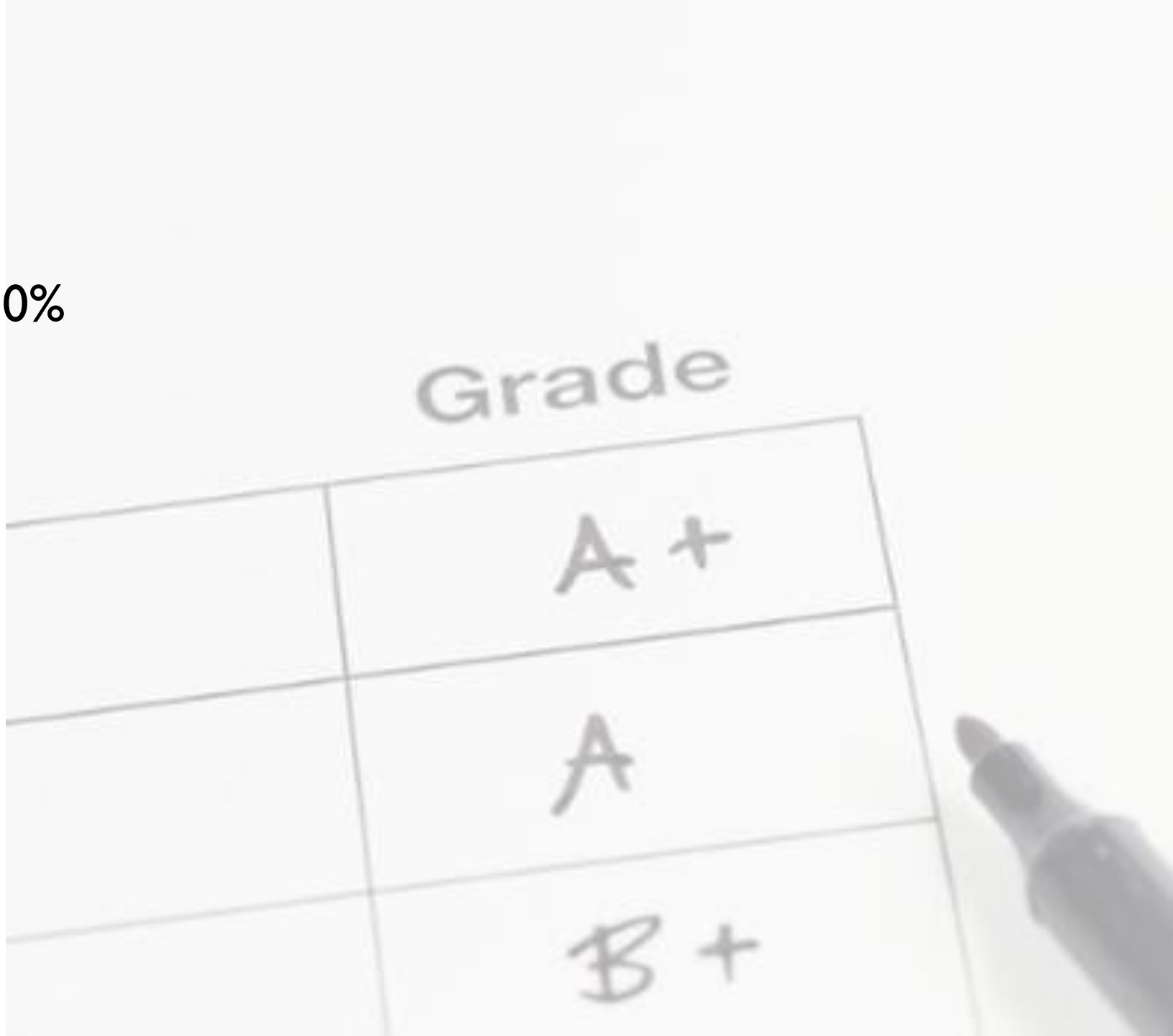
Example Projects



- **Experiment 1 -** Signals in Line of Sight (LOS) (실험 1 - 가시선(LOS) 내 신호)
- **Experiment 2 -** Signals in Non-Line of Sight (NLOS) (실험 2 - 비가시선(NLOS) 내 신호)
- **Experiment 3 -** Impact of distance and frequency bands on Effective Throughput (실험 3 - 거리 및 주파수 대역이 유효 처리량에 미치는 영향)

Evaluation

- Attendance: 10%
- Assignment/Projects: 30%
- Midterm: 30%
- Final: 30%



What we will cover (다룰 내용)

- Wireless networking challenges (무선 네트워킹의 도전 과제)
- Wireless communication overview (무선 통신 개요)
- Wireless MAC concepts (무선 MAC 개념)
- Overview of cellular standards (셀룰러 표준 개요)
- Overview of wireless MAC protocols: WiFi, Bluetooth, personal area networks, etc. (무선 MAC 프로토콜 개요: WiFi, Bluetooth, 개인 영역 네트워크 등)
- Wireless in today's Internet: TCP over wireless, mobility, security, etc. (오늘날 인터넷의 무선: 무선상의 TCP, 이동성, 보안 등)
- Advanced topics, e.g., sensor networks, RFIDs, localization, sensing, dynamic spectrum access, GPS, etc. (고급 주제: 예를 들어, 센서 네트워크, RFID, 위치 추적, 센싱, 동적 스펙트럼 접근, GPS 등)

- **Office Hours:**
  - Monday: 9:00 AM - 11:00 AM (no appointment necessary)
  - Or, anytime by appointment (Please email me in advance to schedule a meeting)
- **Office:** 5공학관 612호
- **Phone:** 033-570-6588
- **Contacting me:** joshi@kangwon.ac.kr
  - Please write your name and ID in your email.
  - You can expect a reply within at least one working day.

- Any questions on lecture overview?