

무선네트워크와응용 (Wireless Networks and Applications)

★ 공지 주의적으로 랑인

★ 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

강의 개요



과목공지



질의응답

이번주 강의

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/cwl/, which includes:

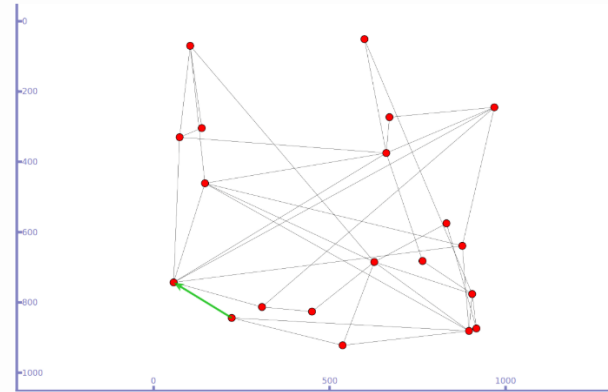
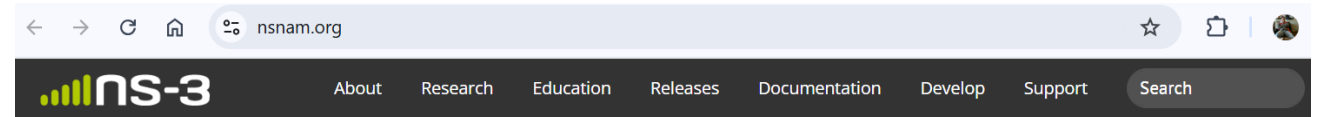
- *Programming examples*
- *Wireshark labs*



A screenshot of the Wireshark website. The browser address bar shows 'wireshark.org'. The website has a dark blue header with the Wireshark logo and navigation links: Download, Shop, Learn, About, Blog, Get Help, Develop, and Members. A 'Donate' button is in the top right. Below the header, the main content area features the text 'The world's most popular network protocol analyzer' and a 'Download' button. To the right is a 'Wireshark 4.0 Overview' graphic with a shark fin icon. Below this, there are sections for 'Python 3 Socket P', 'Wireshark Labs', 'Interactive Exercises', 'Interactive Animations', 'VideoNotes', and 'Miscellaneous Labs'. The footer includes logos for Platinum Member 'endace', Gold Members 'Google' and 'PROFI TAP', and the tagline 'DEEP NETWORK OBSERVABILITY'.

Resources

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



ns-3 Network Simulator

ns-3 is a discrete-event network simulator for Internet systems, targeted primarily for research and educational use. ns-3 is free, open-source software, licensed under the GNU GPLv2 license, and maintained by a worldwide community.

[Download](#)[Docs](#)[App Store](#)

Recent News [\(Older\)](#)

Oct 15, 2024

ns-3 GSoC program concludes

Our three 2024 Google Summer of Code students have successfully completed their programs and posted final reports, linked from our [wiki](#)

[Read more »](#)

Oct 9, 2024

ns-3.43 released

The ns-3.43 release [has been published](#). This release is mainly a maintenance release but contains many small improvements and bug fixes listed in the release notes. This release is due to [twenty-eight contributors](#), including

Announcements



Join us from August 19-21, 2025 for the [International Conference on ns-3 \(ICNS3\)](#) (formerly the Workshop on ns-3) in the Kansai region of Japan.

- [Call for Papers](#)



ns-3 is participating in the 2025 Google Summer of Code program.

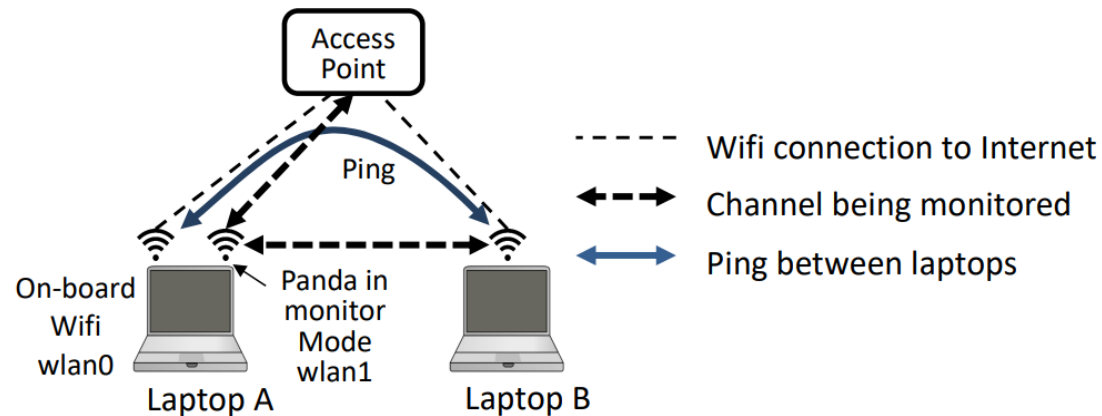
[Find out more](#)

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.

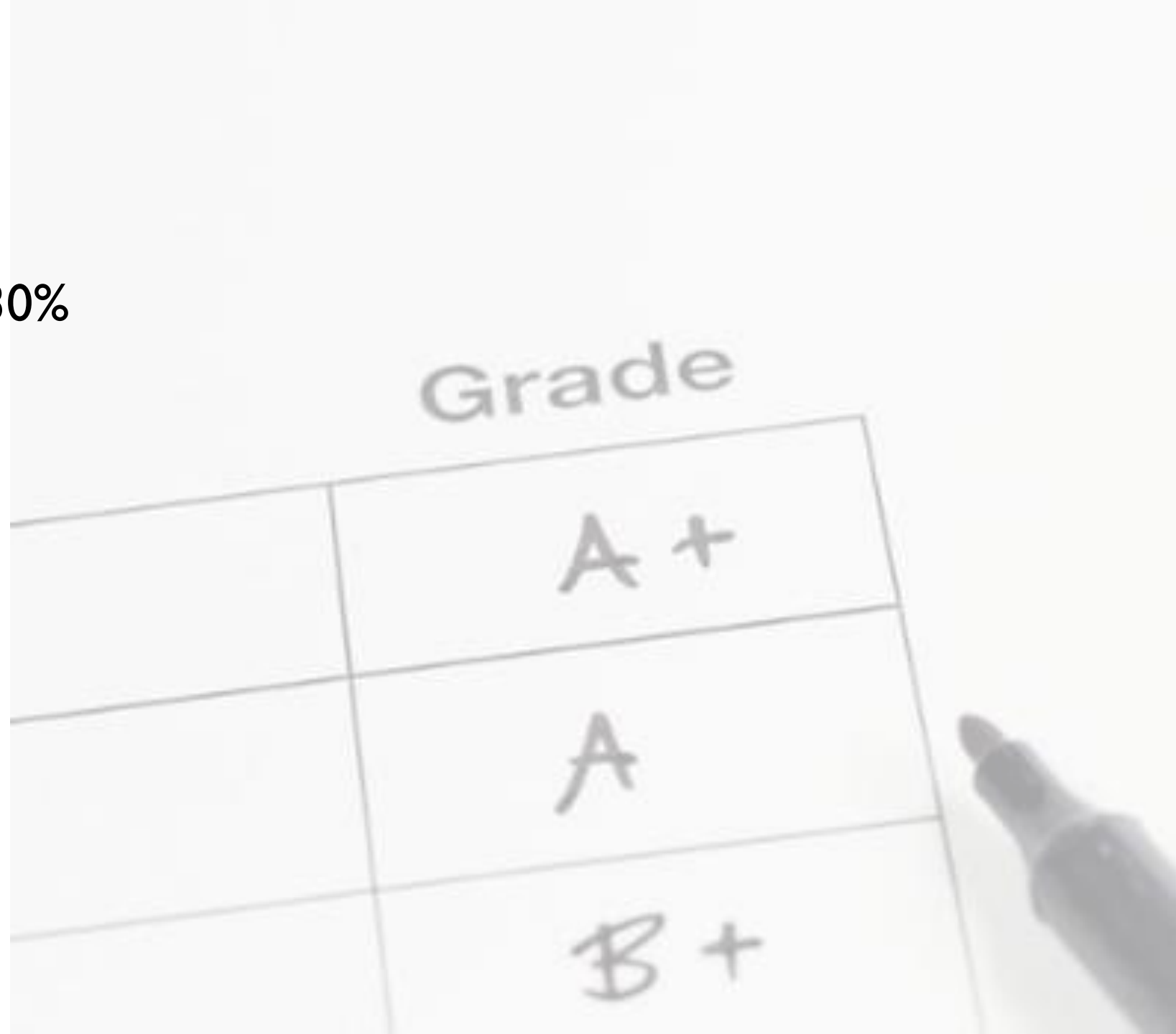
Example Projects



- **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?