Introduction to Next-Generation Wireless Networks

❑ Instructor
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❑ Teaching Time & Classroom
   ❖ Monday 10:20 a.m. ~ 12:10 p.m. (國際大樓IB-512)
   ❖ Thursday 11:20 a.m. ~ 12:10 p.m. (研揚大樓TR-412-2)

❑ TA
   ❖ To be determined

Introduction to Next-Generation Wireless Networks

❑ **Grading**

❖ Midterm Exam   35%

❖ Final Exam   35%

❖ Term Project   30%

❑ **Reference Textbooks**

❖ Jim Kurose, Keith Ross, *"Computer Networking: A Top Down Approach,"* Pearson.

❖ Behrouz A. Forouzan, *"Data Communications and Networking,"* McGraw-Hill Education.

Course Outline

❑ Introduction
  ❖ Get "Feel" and Terminology

❑ Application Layer
  ❖ Principles of Network Applications
  ❖ The Web and HTTP
  ❖ Peer-to-Peer Applications
  ❖ Video Streaming and Content Distribution Networks
  ❖ Socket Programming

Course Outline

❑ Transport Layer
  ❖ Connectionless Transport: UDP
  ❖ Principles of Reliable Data Transfer
  ❖ Connection-Oriented Transport: TCP

❑ Network Layer
  ❖ Data Plane
    • The Internet Protocol
    • Generalized Forwarding and SDN
  ❖ Control Plane
    • Routing Algorithms
    • The SDN Control Plane

Course Outline

❑ Wireless and Mobile Networks
  ❖ Wireless Links and Network Characteristics
  ❖ WiFi: 802.11 Wireless LANs
  ❖ Cellular Internet Access

❑ Security in Computer Networks
  ❖ Principles of Cryptography

❑ Multimedia Networking
  ❖ Multimedia Networking Applications
  ❖ Voice-over-IP