CSE 489/589
Modern Networking Concepts

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Today's Agenda

- A brief overview of the course
  - Introduction of the Basic Information
  - Prerequisites
  - Grading Policies
  - Administrative aspects

Course Instructor

- Instructor: Chunming Qiao (Professor), Yaxiong Xie, (Assistant Professor)
- Class Piazza:
  - Link: https://piazza.com/buffalo/spring2026/cse589
  - Access Code: **sksy0wgy0n9**
  - You should find it under the Announcements tab in UBLearns Brightspace.
- Email (First contact Instructors on Piazza): qiao@buffalo.edu yaxiongx@buffalo.edu
- Office: Davis Hall 312 for Prof. Qiao, Davis Hall 321 for Porf. Xie
- Office hours:

Grading: Academic Honesty

- **Zero tolerance** on cheating/plagiarism:
  - Must fully understand the Academic Integrity (AI) policy
  - Fail the course on any homework assignment/lab, project, or exam even for first attempt, & report to the department.
  - May result in having a note on your transcript or expulsion
- Group study/discussion is encouraged, but the submission must be your own work (except when teaming is explicitly allowed e.g, for a group project).
- Students who share their work with others are as guilty as those receiving the material.

Important URLs

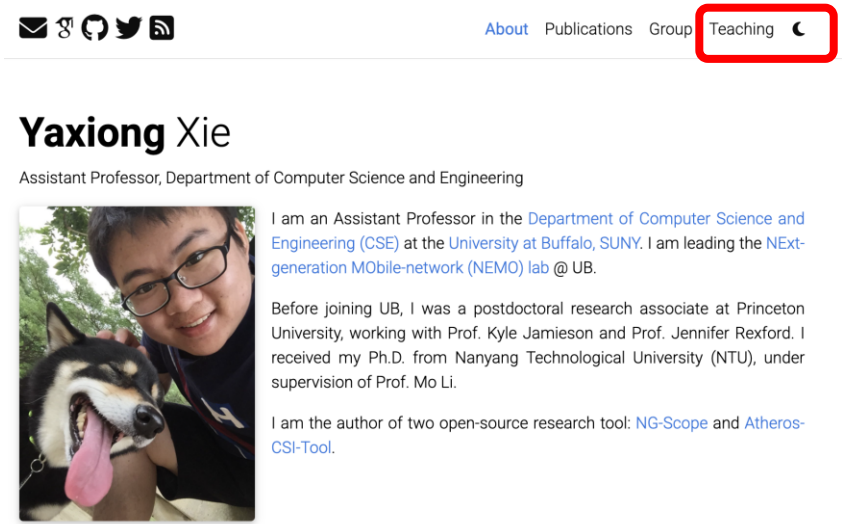
- Use the class Piazza for questions regarding almost anything, including announcement, homework, lab and project assignments:

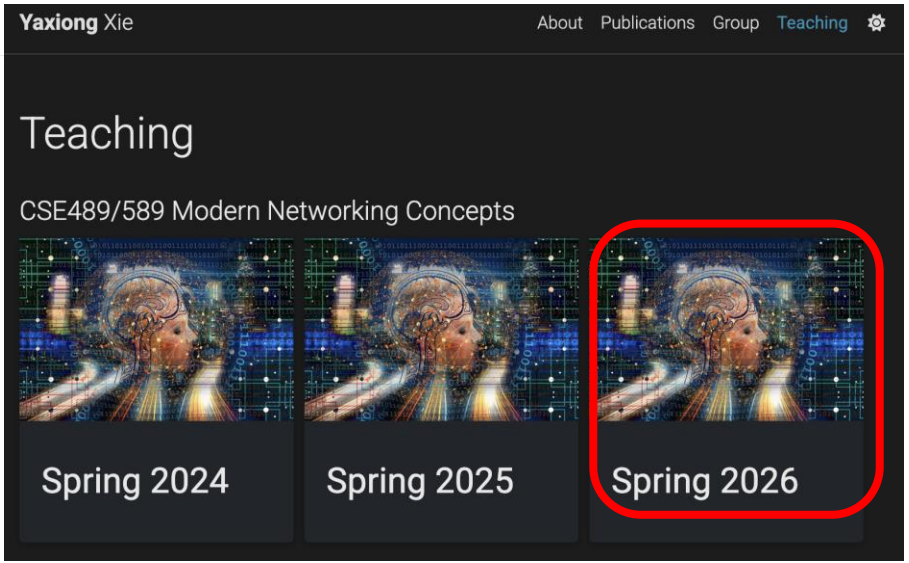
  https://piazza.com/buffalo/spring2026/cse589

  - Make sure you receive email notifications for every new post/comment
  - Post in the right category
  - Mark a questions as "Resolved" when it is resolved
- Course content such as lecture slides can be found on course website
  - https://xieyaxiongfly.github.io/CSE589_UB_SP26/

Course Website

- Course content such as lecture slides can be found on course website
  - https://xieyaxiongfly.github.io/CSE_589_Spring_25/ How to find it?





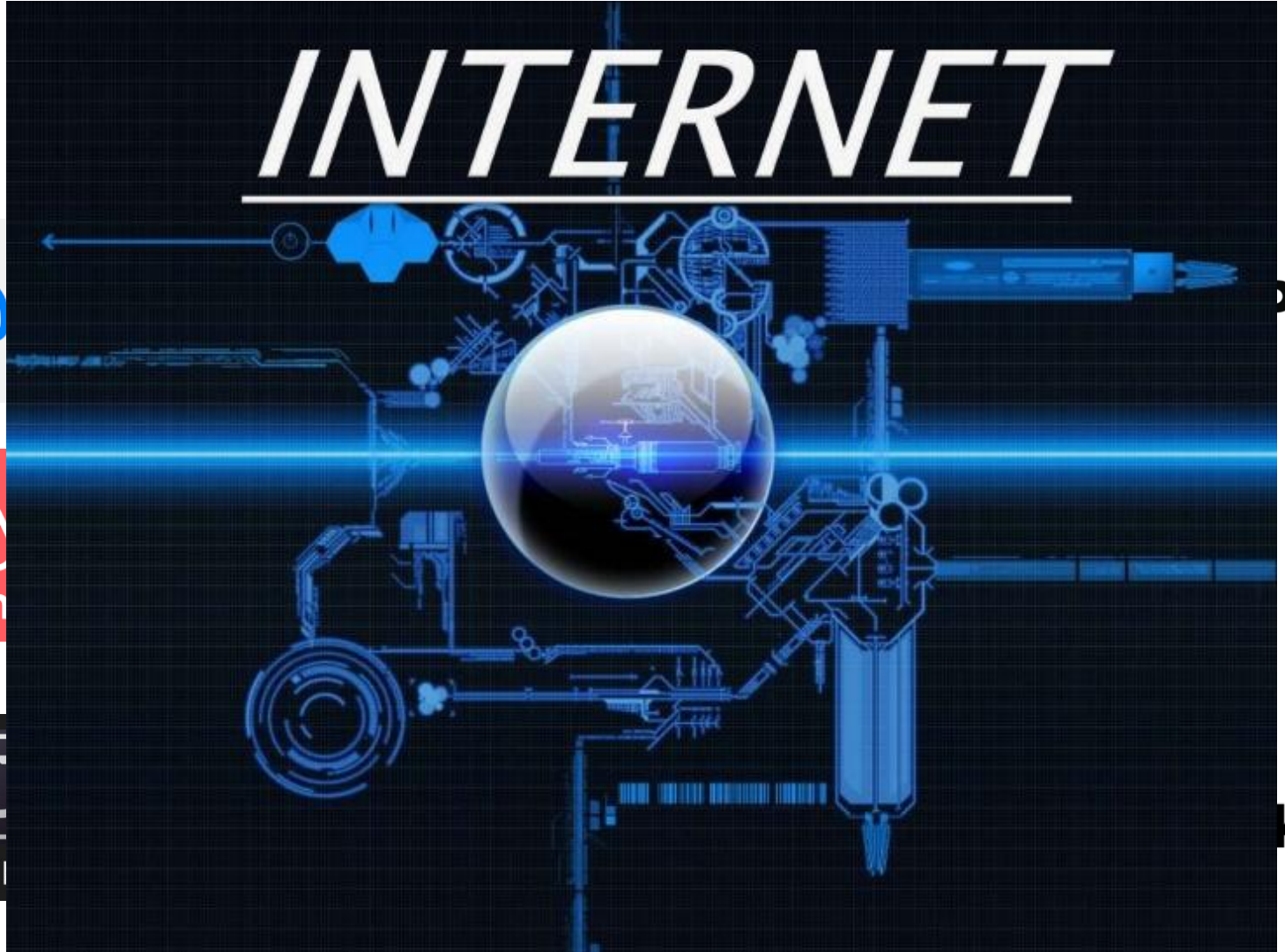
Prerequisites

- Elementary calculus and probability
- Elementary computer architecture, operating system, data structures and algorithms
- Basic Communication Theory (helpful)
- **Strong C / C++ programming skills** in Unix/Linux
  - You need to be proficient in order to do the project assignments!
  - No other programming language will be allowed!
  - No other OS will be allowed!

What is the course about?

MTU P2P 10BaseT WAN IMAP TDM
TDM ACM PCM NIC
TCP DES EIA ARP
ESP QoS
MTU FDDI DHCP
RTP MAN
HTTP MANET EGP PDU
RFC IP
ICMP RPF T3 WAP DCE
PIM HTTP
ABR ATM MAC OSPF MOSPF RSVP IGMP CGI
CDMA DSL IPv6 CIDR
SMTP UDP NAP FDM
PSTN LAN VBR
IRSG BGP CRC
IGMP PPP NAT CSMA/CD XNS
MIB ISP RIP COPS
TLI SNMP L2CAP SLIP
SVC DNS OC12
CBT DDN NIS SONET
BNC ARQ 10Base3
AUI RTSP

What is the course about?


INTERNET

What you'd achieve from this course

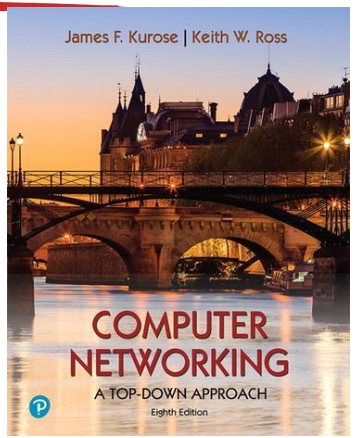
- Learn the fundamentals of Internet and general computer networking concepts
  - The technologies that make networking possible.
  - Software architectures integrating the technologies to build a computer network, the Internet in particular.
  - Network programming.
  - Shortcomings and challenges of current Internet architecture (technologically, politically).
- Have fun!

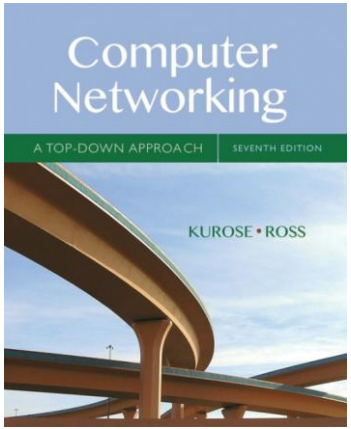
What you will not learn from this course

- A lot!!!
- Why?
  - There are many things we don't know
  - The field is enormous
  - Technologies evolve super-fast

Course Material

- Textbook
  - James F. F. Kurose and Keith W. Ross, "***Computer Networking: A Top-Down Approach***", 8th edition, 2020
  - https://gaia.cs.umass.edu/kurose_ross/index.php
- Recommended reference
  - James F. F. Kurose and Keith W. Ross, "***Computer Networking: A Top-Down Approach***", 7th edition, 2017
  - W. Richard Stevens, "**UNIX Network Programming : *Networking APIs : Sockets and XTI : Volume 1, Second Edition***", Prentice Hall.
- Other references (including slides)
  - Piazza and UB Learns





Lectures

- Will follow the textbook
  - Read relevant chapters before and after lectures
  - Preview the slides (available most of the time before each class)
- Lectures will be recorded and available at UBLearns (I hope)

Grading: Academic Honesty

- **Zero tolerance** on cheating/plagiarism:
  - Must fully understand the Academic Integrity (AI) policy
  - Fail the course on any homework assignment/lab, project, or exam even for first attempt, & report to the department.
  - May result in having a note on your transcript or expulsion

- Group study/discussion is encouraged, but the submission must be your own work (except when teaming is explicitly allowed e.g, for a group project).

- Students who share their work with others are as guilty as those receiving the material.

Grading Policy

- Homework
- Programming Assignments (PAs)
- Mid term and Final

Homework and Wireshark Labs

- 4 Homework
- All done individually
- Counts 10% towards the final grade.
- Submitted electronically, late submissions for up to 7 days are accepted
  - With a fixed daily penalty of 10 out of 100 points
  - Latest submission (7 days late) will receive at most 30 points even if it's all correct; 0 points if more than 7 days late;

Programming Assignments (Projects)

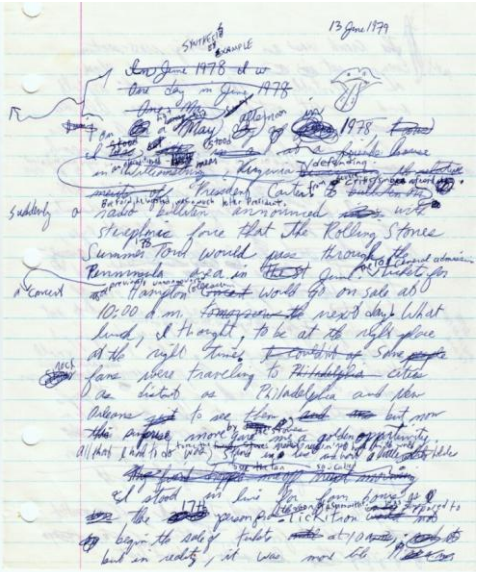
- Programming Assignments
  - 50%
  - The details of the PA will be released soon.
- Projects can be done in a group of 2 students, (or individually).
- Late submissions will receive penalties.

More on Grading Policy (Tentative)

- Mid-term Exam (20%)
  - March 10th
- Final Exam (20%)
  - TBD
- No make up exam will be given without a valid excuse

No handwritten work

- All assignments and exams must be typed.
- Handwritten work is not allowed.



Grade Expectation

- On the curve
- Just for reference:
  - **A**: top 15-20%
  - **A-**: next 10-15%
  - **B+, B, B-**: next 25-40%
  - **C+,C,C-**: next 10-20%
  - **D and below**: you don't want to know
- We reserve the right to assign grades based on the overall performance.

No lame excuses, please!!!

- I have to go home early, Can I take the exam on May 1st?
- I had a fight with my girlfriend/boyfriend.
- I've studied very hard, I understood the stuff very well, but I got a C- please consider giving an A-.
- I will graduate this semester and won't be able to graduate unless I get at least a B+.

Academic Honesty

Important Enough to be Repeated

- **Zero tolerance** on cheating/plagiarism:
  - Fail the course on any homework assignment/lab, project, or exam even for first attempt, & report to the department
  - Consult the University Code of Conduct for details on other consequences of academic misconduct
- Group study/discussion is encouraged, but the submission must be your own work, or in the case of a team programming project, your teammate's work.
- Team members are equally responsible for any AI violation! (don't let your teammate violate AI policy)
- For individual assignments, students who share their work are equally responsible for AI violation as those receiving the material.

More on Academic Honesty

- Homework
  - No collaboration across teams!
  - Use of reference material is allowed as long as you explicitly state the reference
    - Exception: hw/lab solutions from past years or Internet
- Course Projects:
  - Discussion of ideas is welcome but **no sharing of code!**
  - Use of code found online is not allowed even you explicitly state the reference
  - We will use **MOSS** to detect cheating.
- No lame excuses!
  - I did not know/I was not sure/I forgot

Use of AI Tools

- **No use of AI Tools for any submissions**
  - AI Tools like ChatGPT, Google Gemini, Claude, etc. are not allowed.
- They can be used to understand the concepts and for clarifications.
- Use of AI Tools for the submissions in any class work
  - Homeworks/Programming Assignments

will not be acceptable.

How to do well?

- Preview the textbook, attend lectures and review notes
- Start early on homework/labs/programming assignments
- Do homework, labs and projects yourself
- Use Piazza often and effectively
- Ask TAs questions during office hours

Where Do I Ask Questions About

- Lectures
  - Piazza
  - Instructors (office hours, email)
- Homework and Labs
  - Piazza
  - TAs (office hours, email)
  - Instructor (office hours, email)
- Programming Assignments
  - Piazza
  - Graders (office hours, email)
  - TAs (office hours, email)

Questions?