

# CSE 514: Computer Networks

**Instructor:** Guohong Cao

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**Office Hours:** TR 3:00 - 4:15 PM

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**Office Hours:** MW 11:30 – 12.30

**Textbook:** *Computer Networks: A Top-Down Approach Featuring the Internet*, Fifth Edition, J. Kurose and K. Ross.

*Computer Networks: A System Approach*, Fifth Edition, L. Patterson and B. Davies.

We also read papers that will be posted on the class web page.

**References:** *UNIX Network Programming*, W. Richard Stevens, Prentice Hall.

**Class time, Place:** T R 1:00 - 2:15PM, Hosler 218A

**Class Web page:** <http://www.cse.psu.edu/~gcao/teach/514>

## Course Grading:

- Homework/paper review: 10%
- Midterm: 30%
- Projects: 20%
- Final: 37%
- Class Participation: 3%

**Policies:** Assignments and labs are due at the start of class on the date specified. They will be accepted after the due date until the start of the next class period with a 20% penalty. No submission will be accepted after this time (i.e., one class after the due date).

## Course Outline:

1. Computer Networks and the Internet
  - Internet, network structure, protocol stack
2. Application Layer
  - HTTP, DNS, socket programming, P2P
3. Transport Layer
  - UDP, TCP, sliding window, congestion control
4. Network Layer and Routing
  - Routing principles, IP, IPv6, BGP, multicast
5. Wireless and Mobile Networks
  - Dealing with mobility, Wireless Ad Hoc Networks, Data dissemination in MANET.
6. Multimedia Networking
  - Scheduling, RSVP, differentiated service