Welcome to

**CS 3516:**

*Computer Networks*

Prof. Yanhua Li

Time: 9:00am –9:50am M, T, R, and F
Location: Fuller 320
Fall 2016 A-term
Road map

• 1. Class Staff
• 2. Class Information
• 3. Class Composition
• 4. Official Communications
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Who am I?

Yanhua Li, PhD
Assistant Professor
Computer Science & Data Science

PhD, Computer Science, U of Minnesota, 2013
PhD, Electrical Engineering, BUPT, 2009

Research Interests: Wireless networking, Network Measurement, Big data analytics, Smart City

Industrial Experience: Bell-Labs, Microsoft Research, HUAWEI research Labs
Guest Instructor

- **Prof. Bob Kinicki**
  - two lectures on 08/26 and 08/39
  - packet switching, circuit switching, and socket programming
  - [http://web.cs.wpi.edu/~rek/](http://web.cs.wpi.edu/~rek/)

- **Prof. Boris Iskra**
  - Office: FL140
  - Email: iskrab@science.oregonstate.edu
  - Office hour: Mondays 1-3PM; Others by appointments
Teaching Assistants

- **TA**: John Boaz Lee
- **Email**: jtlee at wpi.edu
- **Office Hours**: 1PM – 3PM on Thursdays and Fridays

- **TA**: Dongsheng Wang
- **Email**: dwang3 at wpi.edu
- **Office Hours**: 1PM - 3PM on Tuesdays and Wednesdays

- TA offices at Sub-basement in Fuller Labs
- (Please take your WPI ID card to open the lab door!)
Class Etiquette

State your name every time you:
  • ask a question OR
  • answer a question OR
  • make a comment
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Class Information

- **Class Website:**
  - http://users.wpi.edu/~yli15/courses/CS3516Fall16A/

- **Announcement Page**
  - Check myWPI announcement web page periodically

- **Class Mailing List for announcements, Q&As, discussions, etc.**
  - cs3516-ta@cs.wpi.edu (reaches instructor and TAs)
  - cs3516-all@cs.wpi.edu (reaches students and class staff above)
Textbook


http://kuroseross.com/
Why learn about computer networks?

• More and more applications need connectivity
  – Social Media, Internet of Things,

• More and more are connected devices
  – Connected Vehicles, Smart Devices

• You may know how to use them, but do you understand them?

• A basic understanding of networking is fundamental for building next-generation systems

• This is what the world is heading!!!!
Course Objectives

• UNDERSTAND HOW THE INTERNET WORKS
  – Building a broad understanding of the principal protocols used in computer networks such as HTTP, DNS, TCP, IP, etc.
  – Expose standard network terminology
  – Programming:
    • TCP/IP network socket programming
Course Progression

• Week 1-2: Overview
• Week 2-4: Application Layer Protocols
  – P2P, HTTP, SMTP, DNS
• Week 4-5: Transport Layer Protocols
  – UDP and TCP
• Week 6: IP, Routing Protocols
• Week 7: Link Layer Protocols
• Week 8: Wireless & Data Center Networking
• Slides for the lecture will be posted on the website
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Course Composition

• Lectures
• Quizzes
• Programming Projects
• Labs
• Exams
1. Lectures

- **Sampling** of important concepts / topics will be covered in class

- The topics to be covered can be found on the *reading list* on the *course website*.

- Students are expected to have read the sections to be discussed in a class

- **BUY/RENT/BORROW** the textbook

- A class is to be interactive experience
2. Quizzes

• **11 Quizzes**
  – the quiz with the lowest score will be dropped

• First Quiz: **Tuesday (Aug 30th)**

• 2 - 3 Short Questions

• First 12-15 minutes of a class

• On quiz days, if you come late to class you will have less time to finish the quiz

• If you show up after 15 minutes --- you get a **ZERO** in the quiz.

• Quiz topics will be announced a day before the quiz (by email)
3. Course Projects

• **3 Programming Projects** in the class
  
  – Projects designed to give you a deeper understanding of various aspects of networking

• Students **need very good C/C++ and systems programming** background

• Code must run on CCC machines

• A willingness to request help when needed

• **All projects are to be done INDIVIDUALLY**
4. Class Labs

• 3 lab assignments

• Hands-on experience with protocols learned in class

• Based on using the Wireshark packet sniffer
  – Will require everyone to download and install Wireshark (http://wireshark.org)

• All Labs are to be done INDIVIDUALLY
5. Exams

• 1 mid-term and 1 final exam in the class

• Will include all the topics covered until that point in class

  – May include topics in the reading list but not necessarily covered in class

• The exam will be held in class, closed book (1 page 2 sided A4 cheat-sheet okay)
Workload and Grading

- Workload
  - 30% - 10 Quizzes
  - 30% - 3 Projects
  - 15% - Mid-Term Exam
  - 15% - Final Exam
  - 10% - 3 Lab assignments

EVERYTHING HAS TO BE DONE INDIVIDUALLY
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Official Communication

• Official course communication
  – Class discussion,
  – class hand-outs,
  – emails to the student's WPI email account,
  – myWPI discussion board, and the course Web pages

• All emails: subject line starting with [CS3516].

• Response Time: up to 24 hours.

  (Emails sent on a Friday may be answered by the following Monday.)
Course Management System

- We will use myWPI for the course.
  - https://my.wpi.edu/

- Will be used for:
  - Project & Lab submissions
  - Viewing feedback on submissions
    - Hard copies graded by TAs,
    - Scores are updated myWPI system
  - Viewing grades

- If you have questions, please email me or the TAs and we can assist you
Late Submissions

• Projects and Labs are due online at **11:59pm** on the due date, unless otherwise noted.

• Late assignments of projects and labs will be accepted up to one day (24 hours, with the weekend counting as one day) late.

• **Any late assignment will be penalized 10%** of total assignment value.

• Makeup for *exams, projects and labs* will be allowed only in extenuating circumstances at the discretion of the instructor.
Academic Honesty

– The WPI Academic Honesty Policy
  • [http://www.wpi.edu/offices/policies/policy.html](http://www.wpi.edu/offices/policies/policy.html)
  • describes types of academic dishonesty and requirements in documentation.

– In the case of academic dishonesty,
  • Report the incident to the *Dean of Student Affairs*.
  • **Penalty:** an *NR grade*. 
Questions?