CS 536 Data Communication and Computer Networks Fall 2002

- **Instructor :** Prof. Kihong Park
- **Class :** TTh 1:30–2:45pm (POTR 262)
- **E-mail :** `park@cs.purdue.edu`
- **Tel. :** (765) 494–7821 (CS 220)
- **Office Hours :** TTh 3–4pm and by appointment

- **Course Homepage :**
  `http://www.cs.purdue.edu/~park/cs536.html`

- **Teaching Assistant :** Tiberiu Stef
- **E-mail :** tstef@cs.purdue.edu
- **Tel. :** (765) 494–7840 (CS 266)

- **Office Hours :** W 3:30-4:30pm, F 2:30-4:30pm

- **Course Content :** Graduate-level introductory course to computer networks and data communication
  - Theory (40%)
  - Practice (60%)

- **Prerequisites :**
  - Operating systems
  - Solid background in C and UNIX (experience with projects and low-level programming)
  - Sound undergraduate-level mathematical preparation (calculus, probability and statistics, differential equations)

- **Text Book :**
  - Required: *Computer Networks: A Systems Approach.* Peterson & Davie. Morgan Kaufmann Publ., latest edition.
  - Papers and other reference material will be provided by web or hardcopy.

- **Grading Policy :**
  - Homework assignments (40 %); bi-weekly
  - Midterm (30 %)
  - Final (30 %)
  - `http://www.cs.purdue.edu/~park/cs536.html`
- **Academic Honesty :**
  - Initial discussion on homework assignments is fine
  - Collaboration is not allowed
  - Academic dishonesty is a serious matter and dealt with in accordance with University policy

- **Computing Requirements :**
  - Internet access: `ssh` and WWW
  - Purdue computer account: Xinu Lab
  - `xinu1.cs.purdue.edu`, `xinu2.cs.purdue.edu`, ...
  - `xinuserver.cs.purdue.edu`
  - Candace Walters (`clw@cs.purdue.edu`, 494–9206)

- **Computing Platform :**
  - x86-based PCs, UNIX (Solaris)
  - 100Mbps Ethernet
  - TCP/IP network programming (e.g., client/server, routers)
  - ATM network ($\sim$2.4Gps switch, 155Mbps interfaces)
  - IP-over-SONET backbone (Internet2/Abilene)

Outline

- Introduction (3 lectures)
- Fundamentals of information transmission and coding (3 lectures)
- Direct link communication I: wired media (3 lectures)
- Direct link communication II: wireless media (2 lectures)
- End-to-end communication: packet switching and circuit switching (1 lecture)

- Internetworking with TCP/IP: structure (1 lecture)
- Socket programming and network communication (2 lectures)
- ——*Midterm*——
- Internetworking with TCP/IP: functionality (2 lectures)
- Congestion control (3 lectures)
- Routing (2 lectures)

- Network traffic: data and multimedia payloads (1 lecture)
- Multimedia communication and QoS (2 lectures)
- Transparent network services: DNS, HTTP, web server design, caching and CDNs (2 lectures)
- Network security: confidentiality, authentication, denial-of-service attack (1 lecture)
- ——*Final*——

Questions?

- Tel.: (765) 494–7821
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