Instructor Information

Background

• Dr. James P.G. Sterbenz
  - current positions
    • Associate Professor, KU Lawrence, US
    • Visiting Professor of Computing, Lancaster University, UK
  - past research and management positions
    • UMass, BBN Technologies, GTE Laboratories, IBM Research
  - academic background
    • D.Sc, Washington University in St. Louis, 1991
  - research interests
    • survivable and resilient networking
    • autonomic, programmable, and active networks
    • mobile wireless networking
    • high-speed networking
Instructor Information

Office Hours

- Thu. 17:00 – 19:00
- 125U Regents Center
- Or by appointment
  - email or call to arrange in advance
  - call before dropping in unless already on campus
  - Thu: typically on Edwards campus in afternoon
  - MTWF: typically in Lawrence if not travelling
    - 209 Nichols research office
    - 3036 Eaton: teaching office
Instructor Information

Contact

• **Contact information**
  - **email:** jpgs@eecs.ku.edu *only*
    - begin subject with “EECS663 ”
    - email to other addresses will be *ignored*
    - email generally checked daily
    - email is *unreliable*; retry if no reply within 48 hours
  - email with *meaningful* subject lines
    - bad
      Subject: Hi!
      Subject: regarding class
    - good
      Subject: EECS663 - need help IPv4 TOS field
Instructor Information

Contact

• Contact information
  – phone
    • Edwards office: +1 913 897 8538
    • Lawrence Nichols office: +1 785 865 7890
    • Lawrence Eaton office: +1 785 864 8846
    • only if urgent: +1 508 944 3067
  – web
    • http://www.ittc.ku.edu/~jgps
Student Information

- Brief Introductions
  - around the room
- Photos to help me learn your names
- Roster information
  - full name
  - nickname
  - email for class information list
  - phone (day, other) will only be used for urgent matters
  - degree (MS, PhD), option if MS (course, project, thesis)
Course Information

Correspondence

• Course information and notes
  – [www.ittc.ku.edu/~jpgs/courses/eecs663](http://www.ittc.ku.edu/~jpgs/courses/eecs663)
    • notes for each lecture will be posted in PDF
  – check this *regularly* for updates
    • readings and homework assignments in schedule table
    • “last updated on bottom of page”

• Class email list
  – check email regularly
  – check email every afternoon before class

• Telephone
  – I’ll only phone you if urgent
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Course Information

Course Description

Comprehensive in-depth introduction to communication networks with emphasis on the Internet and various access networks, but also covering the PSTN (public switched telephone network – wired and wireless) mobile ad hoc networks, and SCADA (supervisory control and data acquisition) networks. Extensive examples of protocols and algorithms will be presented at all levels, including: client/server and peer-to-peer applications; transport protocols, the end-to-end arguments, and end-to-end congestion control; network architecture, forwarding, routing, signalling, addressing, and traffic management, quality of service, queuing (basic M/M/1 and Little's law); LAN architecture, link protocols and MAC algorithms; physical media characteristics and coding; network security and information assurance; network management.

Prereq: basic knowledge of Internet, computer systems, programming
Course Information

High-Level Schedule

• Thu. 19:10 – 22:00
  – 254 Regnier – Edwards Campus

• 26 Jan. – 18 May
  – three sectional exams plus final

• Cancellation due to weather
  – official closings unlikely
    • follow media announcements
  – if I can’t make it from Lawrence
    • email to you by 16:00
    • phone message with Edwards reception +1 913 897 8400
Course Information

Reading

• Reading to be done *before* corresponding class
  - you will not do well if you slack on the reading
  - you are responsible for *all* required reading
    • may be on exams even if not covered in lecture!
    • contributes to your class participation grade

• Textbooks
  - Kurose & Ross, *Computer Networking: A Top-Down Approach Featuring the Internet*
  - Sterbenz & Touch, *High-Speed Networking: A Systematic Approach to High-Bandwidth Low-Latency Communication*
  - occasional additional readings on class web page
  - supplementary texts on web page
    • many on reserve
Course Information

Grades

• Grades modified curve grouped by mode
  - based only on merit
  - not based on employer reimbursement or immigration status
  - qualitative meaning
    A: exceptional exam results and outstanding term paper
    B: mastery of material and solid term paper
    C: slacking but know basic material and marginal paper
    D: very poor performance on exams or paper
    F: nonperformance on exams or paper
      academic misconduct
Course Information
Grade Contribution

• Grade relative contribution
  – 45% section exams
    • three at 15% each
    • third will be first half of final exam
  – 15% comprehensive portion of final exam
  – 20% term paper
    • extra credit possible
  – 10% homework
  – 10%: class participation
Course Information

Exams

- **Section exams: 15% each**
  - tentative schedule
    - exam 1 on 2 Mar.
    - exam 2 on 27 Apr. (I expect to be out of the country)
    - exam 3 on 18 May (first half of final exam period)

- **Final exam: 15%**
  - comprehensive covering entire course
  - synthesis of multiple sections
  - second half of final exam period

- **Closed book**
  - no PDAs or programmable calculators
Course Information

Homework

- Homework assigned approximately weekly
  - you *must* solve the problems individually
    - you may discuss problems and solution strategies
  - due 23:59 midnight date in schedule table (generally Mon.)
    - late homework generally not accepted
    - submit by email
      - Subject: line *must* begin with EECS663 homework
      - inline *plain text*; not as an attachment unless instructed
    - credit based on
      - credible submission
      - *small* random sample will be graded
  - all solutions will be posted to web page
    - do not share with others!
Course Information

Term Paper

• Purpose and scope
  - research area of networking beyond class coverage
    • technical in nature
    • beyond description of single topic
      - comparison, history, future prospects, etc.
    • may involve simulation or implementation
  - gain technical writing and presentation experience
  - may lead to MS thesis or PhD dissertation

• Schedule
  - class discussion 16 Feb.
  - proposal due 22 Feb.
  - presentations 11 May
  - paper due 12 May
Course Information
Sources of Literature

- The Library
  - big building with books and paper journals: use it!

- The Web
  - source for journal papers
    - ACM Digital Library, IEEE (subscription through library)
    - individual and project Web pages
  - source for information on research projects
  - source for other information
    - non-refereed reports and information
    - compare to a street corner bulletin board: use with care
    - use very judiciously
      - reports with many URL refs unlikely to receive acceptable grade
Course Information

Class Participation

• 10% of grade is based on class participation
• Interactive class is better for all of us
  – questions, comments, arguments
  – blurt it out; don’t wait
    • don’t need to raise hand
• Reading before class will result in cluefull contribution
Course Information

Etiquette

• Try to be on time
  – consistent late arrivals are disruptive

• No audible mobile phone or pagers
  – if it doesn’t vibrate, turn it off!

• University does not tolerate class disruption
Academic Integrity and Plagiarism

Reading the Riot Act

• Apologies to those that already know this

• Opportunity to learn for those who:
  – are inexperienced in writing
  – come from an environment or culture of tolerance

• Warning of the consequences
  – ignorance will not be an excuse
  – ask me if you have any question about this

• Applies to
  – copying homework
  – cheating on exams
  – plagiarism on term paper and presentation
Academic Integrity and Plagiarism
Referencing and Citations

• All sources must be properly referenced and cited
  - authors, “paper name”, journal, date, publisher, page–range
  - also URL if from obscure source (e.g. university tech reports)
  - see course Web page or for examples

  James P.G. Sterbenz, Rajesh Krishnan, et al.,
  “Survivable Mobile Wireless Networks: Issues, Challenges, and Research Directions”,
  Proceedings of the ACM Wireless Security Workshop (WiSE) 2002 at MobiCom,

• Cite whenever
  - work is related or ideas are used
  - text is quoted or paraphrased
  - diagrams are reproduced or incorporated (even if redrawn)
Academic Integrity and Plagiarism

Quoting and Paraphrasing

- Quoting text or paraphrasing
  - “quotation marks” for sentence or less
  - blockquote for multiple sentences

- Beware of read-then-write in two windows
  - take intermediate notes from which you write

- Quoting is *rarely* needed
  - example: quoting or paraphrasing definition or principle

- Sequence of quotes *doesn’t* show understanding
  - not a shortcut to English writing skills
    - better to be in your *own* imperfect English
    - unlikely to receive acceptable grade
Academic Integrity and Plagiarism
Detection and Sanctions

• Plagiarism is remarkably easy for me to detect
  – inconsistent writing styles and language use
  – technical depth beyond the supposed author
  – inconsistent terminology

• Tools: Web makes both plagiarism & detection easier
  • google on suspicious phrases
  • turnitin automates and correlates searches; goes beyond Web

• Plagiarism will result in F for course
  – and possible further sanctions
  – it is highly unlikely that you will get away with it!
    • but students still try every semester; you have been warned
Course Outline

Top Down Approach

• Introduction: preliminaries, network overview
• Applications: client/server and peer-to-peer
• Transport layer and end-to-end communication
• Network layer: routing, forwarding, signalling, etc.
• Link layer and LANs
• Physical layer
• Wireless and mobile networks, MAC
• Multimedia and session control
• Security and survivability
• Network management
Communication Networks

Relationship to Curriculum

• Tentative networking curriculum
  - currently under revision at Edwards and in Lawrence

• EECS663 is feeder course to
  - EECS745: high-speed networking
  - EECS8XX: mobile and wireless networking
  - EECS888: routing and network administration