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Fall 2010

CEG 436/636-01: Mobile Computing

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CEG 436/636 Mobile Computing

4 Credits

Syllabus

Time/Place: Lecture: 6:05 pm - 7:20 pm, M/W, Joshi Research Ctr 193

Instructor: Dr. Yong Pei, 489 Joshi Research Center
Tel. 937-775-5111, Email: yong.pei@wright.edu
Office Hours: 2:30 - 4:30 pm, Friday

Prerequisites: CEG402/602 (or equivalent) and Java programming

Textbooks: N/A

Lecture slides and reading materials will be posted through WebCT.

References:

1. Yu-Kwong Kwok and Vincent Lau, "Wireless Internet and Mobile Computing", Wiley Interscience, ISBN 978-0471-67968-4.
2. T.S. Rappaport, "Wireless Communications: Principle and Practice", 2nd Edition, Prentice Hall, 2002.
3. S. Keshav, "An Engineering Approach to Computer Networking: ATM networks, the Internet, and the Telephone Network", Addison-Wesley, 1997.
4. P. Nicopolitidis, *et al.* "Wireless Networks", Wiley, 2003.

Course Webpage: Through WebCT

Course Objective:

Increasingly, people, computers and microelectronic devices are being linked together to bring to life the communications mantra: anybody, anything, anytime, anywhere. This junior/senior/graduate course provides an in-depth study of networking protocol and system design in the area of wireless networking and mobile computing. It will help engineering and computer science students establish a solid foundation in concepts, architecture, design, and performance evaluation of mobile computing principle, protocols and applications. It will also introduce students to a few hot topics in wireless networking and mobile computing research such as mobile IP, wireless TCP, 802.11, agent techniques, etc. The course material also consists of selected technical papers published in major networking conferences and journals, which will be posted on the web.

Topical Outline

- Mobile Computing Fundamentals
 - Models of mobile and distributed computing systems
 - Mobile platforms and OS supports
 - *Distributed File System
 - Mobile software designs (Android/iPhone/Blackberry platforms)
 - Mobile Networking Protocols
 - Overview of Wireless & Mobile Networks
 - Design Principles and Philosophy
 - Mobility Support - Mobile IP and Mobile TCPs
 - Ad hoc routing
 - Topical Studies
 - Energy-aware hardware software co-design
 - Sensor Web
 - Pervasive Computing
 - Analytical Tools and Performance Evaluation
- * if time allowed

Grading:

Homework = 10%

Pilot Projects = 20%

Midterm Exam = 20%;

Final Exam = 30%;

Open Design Course Project = 20%.