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Fall 2006

CEG 499/699: Mobile Computing

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CEG 499/699 Mobile Computing

4 Credits

Syllabus

Time/Place: Lecture: 8:00 – 9:15 PM, M. & W., 154 Russ Engineering Center

Instructor: Dr. Yong Pei, 340 Russ Engineering Center
Tel. 937-775-5111, Email: yong.pei@wright.edu
Office Hours: 2:00-4:00pm, Tu.

Prerequisites: CEG402/602 (or equivalent)

Textbooks:

Recommended:

D. Agrawal and Q. Zeng, "Introduction to Wireless and Mobile Systems", 2nd Edition, Thomson, ISBN 0-534-493033.

Lecture slides will be posted through WebCT.

References:

1. T.S. Rappaport, "Wireless Communications: Principle and Practice", 2nd Edition, Prentice Hall, 2002.
2. S. Keshav, "An Engineering Approach to Computer Networking: ATM networks, the Internet, and the Telephone Network", Addison-Wesley, 1997.
3. 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 selected technical papers published on major networking conferences and journals, which will be posted on the web.

Topical Outline

- Networking Fundamentals
 - Fundamental Design Issues
 - Design Principles and Philosophy
 - Overview of Wireless & Mobile Networks
- Wireless Networking Protocols
 - MAC Protocols
 - Packet Scheduling
 - Mobility Support - Mobile IP
 - Ad hoc routing
 - Wireless TCP
- Topical Studies
 - Energy-efficient Design
 - Sensor Networks
 - Pervasive Computing
 - Analytical Tools and Performance Evaluation

Grading: (Tentative)

Homework = 20%

Midterm Exam = 30%;

Final Exam = 30%;

Project/Term Paper = 20%.