COMP 5360, Wireless and Mobile Networks

Credit hours: 3 lecture
Contact hours: 3 lecture

Catalog Description: Mobile IP, wireless routing, location management, ad-hoc wireless networks, wireless TCP personal communication systems, and GSM.

Prerequisites: COMP 4320 or departmental approval
Corequisites: None

Required Course (WIRS) Selected Elective Course (CSCI, SWEN)

Instructor or Course Coordinator: Dr. Alvin Lim

Required Textbook

Reference Materials
Selected current conference and journal articles

Course Outcomes
The student will be able to
• develop advanced network building skills.
• understand performance issues in advanced wireless and mobile networks.
• understand issues related to supporting mobile distributed applications.

Topics Covered
• Introduction to wireless and mobile networks (1 hours)
• Applications (2 hours)
  o Issues, problems, types and characteristics
  o Mobile wireless applications and fundamental issues
  o Performance requirements
• Wireless network technology (1 hours)
• Global System for Mobile Communication (GSM) (2 hours)
• Wireless media access control protocols; Wireless LAN (5 hours)
  o TDMA, PRMA, CDMA, etc.
• Routing in wireless networks (5 hours)
• Location management (2 hours)
• Transport protocols in mobile environments (5 hours)
  o I-TCP, snooping protocols, etc.
  o Multicast transport services
• Services in wireless networks (5 hours)
  o Quality of service
  o Delays, error and packet loss
Error control schemes
- Mobile distributed application support (5 hours)
  - Operating system support
  - Mobile middleware and object architecture
  - Mobile transaction
  - Remote execution and mobile RPC
  - Cache strategies for wireless networks
- Wireless ATM (4 hours)
- Wireless multimedia communication (2 hours)
- Performance Issues (4 hours)
- Exams (2 hours)

Course Requirements
- Homework assignments (40%)
- Exams (60%)

Syllabus prepared: Spring 2016