CS 6603 – Advanced Topics in Wireless Networks  
(Formerly CS 465) 
Spring 2015

Instructor:
Dr. Abusayeed Saifullah  
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Class Meeting:
Tuesdays and Thursdays 02:00pm - 03:15pm 
Location: CS 202

Office Hour:
By appointment only. 335 Computer Science Building

Course Description:
This is an advanced wireless networking class for graduate students with sufficient background in computer networks. The objective of the course is to make students familiar with recent advances in wireless networking. Each student will be required to complete a semester-long individual research project related to the theme of this course. Any topic in the wireless networking field can be chosen upon approval from the instructor. This is not a group project. At the end of the semester, each student will present his/her work in class and turn in a full-length conference or journal-style paper describing the project. Topics to be covered in this course will include:

1. Wireless fundamentals: modulation techniques, interferences, capture effects, introduction to existing wireless technologies and applications
2. Infrastructure and ad hoc networks
3. Routing in ad hoc networks
4. Wireless sensor networks: MAC protocols, link scheduling, energy optimization, topology control, structural health monitoring, wireless health, application allocation, real-time wireless, sensor-actuator network and wireless control
5. Industrial wireless network: WirelessHART
6. Whitespace networking

Prerequisite:
A "C" or better grade in CS 4600/5600 or equivalent or the permission of the instructor is the prerequisite for this course. The instructor also assumes that the students have sufficient background in algorithms and data structures.

Coursework and Weight:
Class attendance: 5%
Presentation: 25%
Survey (complementary to the project) + Project proposal: 25%
Research project: 45%

Score Distribution (on a Scale of 100) for Letter Grades:
A: 85-100
B: 75-84
C: 55-74
F: 0-54

Lecture Schedule and Due Dates
• Jan 20 - Mar 2: lectures (tentative)
  – Wireless fundamentals
  – Wireless standards
  – Wireless ad hoc networks
  – Wireless sensor networks
  – Real-time wireless networks
• Mar 3 – Mar 19: student presentation
• Mar 19 Thurs: Survey (printed) due in class (3-4 pages excluding ref. IEEE style)
• Mar 20 – Apr 20: lecture (tentative)
  – Data center network
  – White space network
  – Wireless link layer
• Apr 21– May 07: project presentation (include survey results)
• May 07 Thurs: Project paper (printed) due in class (6-10 pages IEEE style)

Academic Dishonesty: http://registrar.mst.edu/academicregs/index.html
Cheating and plagiarism in the course works (homework, exam, project) are strictly prohibited. Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism or sabotage. A description of the process for dealing with issues related to academic dishonesty, is available on-line at http://ugs.mst.edu

Academic Alert System: http://academicalert.mst.edu
The instructor will utilize the online Academic Alert System. The purpose of the Alert System is to improve the overall academic success of students by improving communication among students, instructors and advisors; reducing the time required for students to be informed of their academic status; and informing students of actions necessary by them in order to meet the academic requirements in their courses.

Disability Support Services: http://dss.mst.edu
Any student inquiring about academic accommodations because of a disability should contact Disability Support Services so that appropriate and reasonable accommodative services can be determined and recommended. Disability Support Services is located in 204 Norwood Hall. Their phone number is 341-4211 and their email is dss@mst.edu