

CS 441 – Fall 2011
MOBILE and WIRELESS COMPUTING
Department of Computer Science



SYLLABUS

Course Organization:

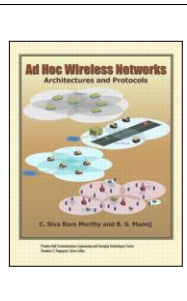
Instructor: Dr. Kemal Akkaya
Office: FANER 2138
Office Phone: 453-6054
E-Mail Address: kemal@cs.siu.edu
Office Hours: M: 12:30-2pm: R: 11-12:30pm

TA: Mr. Steven Aldridge
Office: FANER 3131
Office Phone: 455-6037
E-Mail Address: steven88@siu.edu
Office Hours: M: 2-3pm, W: 12-2pm

Textbook:

Required Textbook:
None

Reference Textbook:
Ad Hoc Wireless
Networks by Murthy
and Manoj, 1st Ed.,
Prentice Hall, 2004.



Grading:

Group project	20%
Midterm Exam	15%
Final Exam	25%
Quizzes	5%
Labs	10%
Assignments	10%
Presentation	15%

Course Web Site: The lectures, HWs, quizzes and other announcements will be made available through the Blackboard (mycourses.siu.edu) as well as at: <http://www.cs.siu.edu/~cs441> The lecture notes will be both in ppt and pdf format. They will be available before the class. There will also be a Gradebook on Blackboard where you can learn your grades of exams, quizzes and HWs. It is your responsibility to check the announcements on the web site frequently to follow what is new about the course.

Assignments: Some assignments will be given about the protocols we will cover. These will typically be simple questions that will require you to do some research on the net or some computational problems. In addition, paper summaries will also be given as assignments.

Project: There will be a group (2-3 people) project related to the implementation or simulation of some protocols we will see in the lecture. You can also propose your own project. Start thinking about your project groups now. Undergrad and grad student projects will be different.

Presentation: Each student will write a report and present a topic which was not covered in the class. I will provide you a list of possible topics to search for. You are expected to write a short report on the topic you selected.

Hands-on Labs: There will be three labs to practice with sensors (Motes) coming from Crossbow. Each lab will be held in Hands-on lab in the department of Computer Science. 2 (or 3) students will work with the motes to get the described application run and make a demo to the instructor. For each application detailed descriptions will be provided before the labs.

Quizzes: There can be unexpected quizzes in the class regarding the topics covered in the previous classes. This requires you to be prepared on what have been discussed in the previous lectures.

Late Assignments/Project: All assignments and projects are due by the end of class on the date established by the Instructor or the TA as the due date. Your grade is based on timely work accomplished during the semester. Late assignments are not acceptable for points.

Exam Policy: The exams will be closed-book and closed-notes. The final exam will be comprehensive. No makeup exams will be given.

Academic Integrity: By enrolling in this course, each student assumes the responsibilities of an active participant in SIU's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. If we catch anyone cheating, we will take the maximum action possible against them, including reporting the matter to the appropriate university authorities. Please cooperate by doing your own work and not seeking inappropriate help from your classmates. You may, of course, discuss HWs and assignments amongst yourselves, as long as that discussion does not lead to a exchange of solutions.

Emergency Procedures: SIUC is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on BERT's website at www.bert.siu.edu, Department of Safety's website www.dps.siu.edu (disaster drop down) and in Emergency Response Guideline pamphlet. Know how to respond to each type of emergency. Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.

Course Schedule

Week	Tentative Topics	Assignment/Exam
1	Wireless Network Challenges Networking Basics, Protocol Layering	
2	Summary of Physical Layer Concepts Summary of Link Layer Concepts Summary of Network Layer Concepts	Networking Assignment
3	Radio Basics, Antennas, Spread Spectrum	Project Assignment
4	Mobile Ad hoc Networks (MANETs) MAC Protocols for MANETs (MACA, MACAW, IEEE 802.11)	Paper Reading Assignment
5	Wireless Sensor Networks (WSNs), Applications	Midterm Exam
6	Lab-1: TinyOs Installation	Group Work
7	MAC Protocols for WSNs (Energy awareness, S-MAC)	Paper Reading Assignment
8	Mobile IP	
9	Routing Protocols for MANETs (DSR, DSDV, AODV, ZRP)	
10	Lab-2: Motes Hardware, Sample Application - Blink Data Aggregation in WSNs	Group Work
11	Routing Protocols for WSNs-I (Data Centric Routing)	Paper Reading Assignment
12	Routing Protocols for WSNs-II (Hierarchical & Location-based) Lab-3: Surge Routing Application	Group Work
13	Student Presentations-I	
14	Student Presentations-II	