

ECE 5564: Wearable and Ubiquitous Computing Spring 2005

Instructor: Dr. Tom Martin
Office: Torgersen 2040-D
Phone: 231-1739
email : tlmartin@vt.edu

Course URL: http://www.ece.vt.edu/~tlmartin/ece5564_wearable/

Prerequisites: ECE 4534 or ECE 4550

Office Hours: Tuesday, Thursday, 11:00-12:00 p.m., or by appointment (call or send e-mail).

Meeting Time: Tuesday, Thursday, 9:30-10:45 a.m., Randolph 318

Textbook: None. Reading assignments will be available on-line from the course URL.

Grading Policy:

Design projects:	40%
Research report:	25%
Exam:	20%
Homework/summaries/in-class assignments/class participation:	15%

Final grades will be determined on a 70-80-90 scale.

All work must be submitted at the beginning of class on the day it is due unless stated otherwise. Work that is submitted late will be penalized 30% for the first day late, and 10% per day thereafter. Reading summaries that are turned in late will not be accepted. In-class assignments cannot be made-up. No make-up exam will be given unless you make arrangements with me at least 48 hours in advance. If I do have to create a make-up exam, it may be much harder than the original.

All requests for a re-grade must be submitted in writing within a week of the assignment being returned. No assignment will be re-graded after one week. Please let me know immediately if I have added up your score incorrectly. The lowest homework/summary grade will be dropped when calculating your final grade.

Reading summaries: Summaries of the upcoming week's reading assignment will be due at 5 p.m. on Monday. They should be submitted via e-mail as plain ASCII text. No attachments or HTML please. Summaries should briefly explain the main points of each article in no more than 200 words per article. You are also encouraged to include a list of any questions that arose in your mind while reading the articles. This class is intended to be very conversational; you should be prepared to talk about the papers.

Course Description: Issues in the design and use of wearable and ubiquitous computing systems. Topics covered include current research issues in system-level low power design, input/output devices, location and context-awareness, and networking. Students are expected to design, implement, and evaluate a wearable/ubiquitous computing-related device or application.

Because there is no single text that adequately covers the material for the course, the lectures for the course will be taken from the recent research and technical literature. Attending the lectures is very important. I will not be taking attendance, but if you miss a lecture it is your responsibility to obtain the material from a classmate.

Having successfully completed this course, the student will be able to:

- describe and discuss design constraints unique to wearable and ubiquitous computing platforms and applications,
- design, develop and evaluate a wearable computing application,
- use hardware and software development tools, and
- have gained team design and work experience.

Tentative Schedule of Course Topics

<u>Week</u>	<u>Topic</u>
1-2	Overview of wearable and ubiquitous computing
3-5	Low power hardware issues
5-7	Low power software issues
8	Hardware case studies
9-10	Input/Output devices
11-12	Location and context-awareness
13-14	Application case studies
15	Project presentations

Important dates (tentative):

Week of March 1: Exam

I reserve the right to change the above schedule based upon the needs of the course. Since this is the second offering of the course, there will be some occasional rough spots. The schedule will in all likelihood change several times during the semester. Changes will be announced via e-mail and the course web page.

Honor code policy

The academic conduct policy is fully spelled out in the Student Handbook, and I expect each student to adhere to it. Discussing the assignments with other students is encouraged, as that is one of the best ways to learn the material. But the work submitted should be your own. Copying another person's work and turning it in as your own is not permitted. Unauthorized copying of copyrighted software and the removal of manuals from the laboratory are also honor code violations. Misuse of laboratory computers, including the deliberate introduction of viruses also constitutes an Honor code violation. All observed honor code violations must be reported to the Honor System. I will be happy to discuss honor system questions with you.

Auditing

Auditing this course is discouraged. Students auditing the course must obtain all required permissions to do so. To receive a satisfactory audit, the student's overall grade must be at least a B.