

Syllabus

Instructor

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Co-Instructor

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Date & Time & Place

Thursdays 7:20pm–10:00pm, Engineering Building 1108

Course Web Page

The course web page will contain the latest schedule updates, announcements, handouts, etc. The web page is accessible via <http://ece.gmu.edu/~jkaps/courses/ece699>

About Ubiquitous Computing

Ubiquitous (aka pervasive) computing is an emerging concept of how people may use computing support in the future: no longer interacting with one computer at a time, but rather interacting with a dynamic set of networked computers, often invisible and embodied in everyday objects in the environment. This course introduces ubiquitous computing concepts and technology through guided readings and hands-on project experience. It offers an overview of how ubiquitous computing builds on distributed systems and mobile computing. Specifically, the following topics will be covered:

Definition and scope of ubiquitous computing, architectures for ubiquitous computing, applications and devices such as wireless sensor networks and radio frequency identification devices, low power hardware design for ubiquitous computing, power management and power sources, security requirements, social aspects of ubiquitous computing incl. privacy concerns, interactions between humans and (ubiquitous) computers, deployment and evaluation of solutions, sensing and actuation, awareness and perception.

Textbooks

- (Recommended) *Advances in Ubiquitous Computing: Future Paradigms and Directions* by Mostefaoui, Maamar, Giaglis. IGI Publishing, 2008, ISBN 9781599048406.
- Additional papers will be made available at the schedule page.

Office Hours

Please check the class web page for the current office hour schedule. You should feel free to approach Dr. Kaps and Dr. Sousa at any time if you need help in addition to the scheduled sessions. The best way to contact us is via email.

Reading Summaries

There will be weekly reading assignments. Each student should summarize the article in no more than 200 words each and send the summary to me in e-mail as plain text (no attachments, no HTML) the day before class. The summary should explain the main points of each article such as new ideas, results, methods, visions, etc. However, you should not just copy the abstract or the conclusions. You are also encouraged to submit a list of questions as we will discuss the articles in the following class.

Class Presentations

Students should present at least two papers during the semester. The best two presentations will be factored into the final grade. Full credit will be given to presentations that crisply hit the main ideas of the paper and that compare those with relevant points in other papers on the topic.

Examination

There will be one midterm exam during the course.

- **Midterm Exam:** October 28th

Project

An important part of this course is the semester project. Students will be working in groups of at least two people. The project topic will be chosen by the students with help and guidance by the instructors. Hardware, software and combined projects are possible. The project topics can be chosen from all areas connected to Ubiquitous computing and should emphasize the basic principles taught in class. The projects should result in a presentation with demonstration and a research poster.

- **Project Checkpoint:** November 4th
- **Presentation:** December 9th

Grading

The following weight distribution will be used to calculate the final grade:

- 15% Class Participation / Reading Summaries
- 15% Class Presentations
- 20% Midterm Examination
- 50% Project

Honor Code

George Mason's policy concerning student conduct applies. Nevertheless, students are encouraged to discuss the topics covered in class as well as solutions to the group projects. The emphasis of this course is on group learning.

Students with Disabilities

If you are a student with a disability and you need academic accommodations, please let the instructor know and contact the Disability Resource Center (DRC) at 993-2474. All academic accommodations must be arranged through the DRC.