

*SPRING 2015*

## ***LMC 6314: Design of Networked Media***

Office: TSRB 316A

Office Hours: Friday 10:00AM–12:00PM and by appointment.

Email: ledantec@gatech.edu

Class Meetings: Monday/Wednesday, 3:35-4:55PM

Location: TSRB 323

### ***COURSE DESCRIPTION***

Mobile technologies—from mobile phones to tablet computers, to netbooks and laptops—are changing where and how people interact with digital media and with each other. This graduate seminar will focus on the cultural and social impact of mobile technologies, taking a global view of where and how these technologies are being adopted and adapted to solve local problems. Through a combination of reading, design assignments, and a semester-long project, we will examine the broad field of mobile computing and probe issues of access, adoption, identity, privacy, and participation in different cultural and social contexts. The readings will draw on a diverse body of literature, including perspectives from anthropology, sociology, design studies, human-computer interaction, as well as accounts of mobile technology from news and other popular media. The design assignments will be structured around exploring the limits and opportunities for mobile interactions and will challenge you to consider different modes and different cultural (global) settings of mobile technology use.

### ***LEARNING OBJECTIVES***

After taking this course you should:

- Have a more comprehensive understanding of the technologies and interaction techniques available and appropriate for mobile application design.
- Be able to use the theories and works presented in this course to frame and support discussion and critique of mobile technologies.

This class is intended to provide both hands-on experience designing different aspects of mobile interaction along with theoretical and critical perspectives that will help you reflect on the kinds of trade-offs that may be confronted during design. This should include issues of participation, privacy, and identity, among others. The design assignments and semester project are intended to expose different parts of the mobile infrastructure so that each may be interrogated as sites for design and critique.

### **M.S. Objectives**

- Demonstrate knowledge, comprehension, and application of the tools and formal design elements of digital media design.
- Ability to explain, give examples of, and defend one's use of formal digital media design terminology
- Can design and create digital artifacts that create the experience of agency for the interactor.
- Demonstrate use of digital media to create prototypes

### **Ph.D. Objectives**

- Students can identify, analyze, and effectively write about a domain within the field digital media and identify areas for original contribution as well as methods to pursue these contributions.
- Students can formulate original interpretations and design original prototypes that reflect an understanding of the humanistic context of digital media.
- Apply theoretical concepts to specific digital media works

- Identify and define a suitable research problem in digital media design and apply appropriate disciplinary or interdisciplinary research methods to address it.
- Demonstrate ability to conduct original research in support of designing new genres and forms of digital media

### ***GRADING***

The total grade for the class will be based upon the following factors and weights:

Participation: 10%

Written Responses: 10%

Design Assignments: 30% (10% each)

Semester Project: 50% (10% for each milestone + 50% process book)

### ***PARTICIPATION & ATTENDANCE***

Class attendance and participation is mandatory. Participation in class discussion is imperative because it allows you to explore the readings and themes collaboratively, and in the process, discover meanings and issues that you probably would not discover on your own. Participation in class also challenges you to continuously question, refine and articulate your own ideas and interpretations.

In addition, much of this class is based in discussion of the readings and constructive critique of the design assignments and class project, all of which require full participation and cannot be replicated outside of class.

Missing more than 2 classes will result in a loss of 1 letter grade.

### ***READINGS & TEXTS***

There are no books required for this class, all readings will either be accessible via T-Square or online.

### ***WRITTEN RESPONSES & DISCUSSION***

Each week you will write a short (approx. 500 words) response to the week's reading assignments. These are due midnight before the class where we discuss the reading. Each written response will develop an argument about the readings—you may choose to focus on one article or connect several (including from previous weeks)—but the key here is that you are developing an argument about the topic and not simply reporting on the content.

You will use the blog feature in the class's T-Square site. You are strongly encouraged to read your classmate's responses prior to coming to class to help set the context for discussion.

Each week two of you will be responsible for leading discussion. The schedule for discussion leaders will be set in the first day of class.

### ***DESIGN ASSIGNMENTS***

Each design assignment will follow the same general pattern. The first deliverable will include 5-7 prototype sketches. These will be presented in-class for critique and discussion and handed in. The second (revision) part of each assignment will have you focus your attention on one or two of your prototypes where you will more fully develop the ideas, taking into account feedback from the critique.

In the first part of each assignment I will be looking for breadth: you will need to quickly present several different ideas that approach the theme from different angles, that play off different constraints, and that challenge and interrogate our notions of mobility with respect to the theme.

In the second part of each assignment, I will be looking for depth: you will need to thoroughly expanded the initial ideas, developing a plausible scenario more completely, providing more depth to the experience and to what the system or application or device would look

like.

These are meant to be prototypes, not working systems, so the kinds of deliverables I expect are sketches of application screens, system diagrams, or storyboards. As you select the one or two ideas to further develop, the fidelity should go up—more detail in the mockups, more complete narrative arcs in storyboards, etc.

Each assignment will be centered around a particular theme that should be used as a launching point for the prototypes:

1. Location: Place/space, environment, boundaries, context.
2. Participation: Who uses/does not use the technology, consequences of use.
3. Identity: Notions of self, privacy, safety.

## ***SEMESTER PROJECT***

You will need to form small groups of two to three to complete the semester project. This project is open ended and will give you an opportunity to examine the convergence of mobility and technology in more depth.

The semester long project will have four primary milestones:

1. Project proposal: Each group will present their proposal to the class for discussion and critique. They will also turn-in a 2-5 page proposal document describing the project.

Your group will need to propose a domain in which to explore mobile technology—e.g., mobile games, health and wellness, social computing, ICTD, community action, etc. You may propose a mobile service, an application, or a new kind of device. Your proposal will also need to include details about how you plan to research your potential users and context—providing a plan for how will you document your process and gain the insight needed to appropriately articulate your system/application/artifact design through the subsequent project milestones.

2. Milestone 1: Each group will present more detail on their project context and 2-3 prototypes of their system/application for critique and discussion.

For the first milestone you will deliver documents demonstrating how you investigated your target users and context. This may include photos and video from observation, field notes, or other ethnographic materials; if you are working with a context or problem space that is not immediately accessible, you will need to include a literature review. You will also develop prototypes of your service/application/device. Each prototype should demonstrate a key usage scenario and include enough detail to communicate how the people will experience your technology and should be clearly motivated by the fieldwork/literature review.

3. Milestone 2: Each group will present/demo their system/application prototype for additional critique and discussion.

This milestone will have your group focus on one of your prototypes, developing it further and more completely. You should add detail to both the design of the technology as well as to the social setting in which the technology will be used. While still a prototype, I expect to see more fidelity in the execution and depth of scenarios/cases covered.

4. Final presentation, poster, and process book: Each group will give a 20 minute presentation on their project (time may be adjusted according to class size and scheduling). I expect each group to have addressed any feedback provided at milestone 2 and to have taken their design further; the prototypes should be 'demoable'.

Each group will also produce a poster for their project. We will hold a dedicated critique session for posters and the expectation is these posters will be presented at the end-of-term demo day.

Finally, each group will hand in a final process book for the project that should provide clear and thoughtful documentation and reflection on how the design progressed through each of the milestones: what constraints informed early prototypes; what were the key choices that occurred as designs were developed or discarded; descriptions and documentation of how the context was investigated; a description of the key use scenarios (there will be more than one).

This project is designed to give you an opportunity to develop your practical and theoretical understanding of mobile technology and digital media. I do not expect every project to center around mobile phones or tablet computing—in fact, I encourage you to think about

new forms of technology or to interrogate mobile technologies that exist outside the canon of mainstream use.

For those of you interested, there are a number of opportunities to turn your projects into papers and/or posters at academic conferences. I will share deadlines as they become known.

### **CLASS RESOURCES**

This class is meant to help you explore different aspects of mobile systems (applications, architectures, services, interactions, etc.). As such, there is no strict technical requirement for how you develop and implement your semester project. To that end, there are a number of resources you might find useful depending on your technical background and interest:

Prototyping Tools:

- Templates for static mobile UI layout and paper prototyping  
<http://www.smashingmagazine.com/2010/08/27/free-wireframing-kits-ui-design-kits-pdfs-and-resources/>
- For Prototyping (different degrees of knowledge required)  
<http://prototypesapp.com/>
- Adobe Fireworks has mobile plug-ins, below is an example  
<http://unitid.nl/2009/04/prototyping-for-the-iphone-using-fireworks-cs3/>
- HTML 5 platform for mobile application development  
<http://www.phonegap.com/>
- Cross-platform development tool (iOS and Android)  
<http://www.anscamobile.com/corona/>
- Wireframing Tools (various platforms)  
<https://gomockingbird.com/>  
<https://pidoco.com/en>  
<http://blog.justinmind.com/wireframe-interactive-iphone-apps-iphone-library/>
- Flowella (Nokia platform)  
<http://www.tardigrada.hr/blog/2010/07/flowella-rapid-prototyping-tool-for-mobile-designers/>
- iOS Dev center  
<http://developer.apple.com/devcenter/ios/index.action>
- Android App Inventor  
<http://appinventor.googlelabs.com/about/>
- Android prototyping Tools  
<http://speckyboy.com/2010/05/10/android-app-developers-gui-kits-icons-fonts-and-tools/>

### **COURSE SCHEDULE**

What follows is an outline for the course. As the course progresses, we may adjust dates and materials; however, unless specifically stated in class, you should assume this schedule is current and accurate.

Week 1	January 5	First day of class.  Administrivia  Design Assignment 1 (Location) out.
	January 7	Reading: Papane, V. Design for the Real World. 1971. Chapters 7 and 12.

Week 2	January 12	Reading:  Harrison, S.R. and Dourish, P. Re-place-ing space. Proceedings of the 1996 ACM conference on Computer supported cooperative work, ACM Press (1996), 67–76.  Paulos, E. and Goodman, E. The familiar stranger: anxiety, comfort, and play in public places. CHI '04: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ACM (2004), 223–230.  Chalmers, M., Dieberger, A., Höök, K., and Rudström, Å. Social Navigation and Seamful Design. Cognitive Studies: Bulletin of the Japanese Cognitive Science Society 11, 3 (2004), 171.
	January 14	Design Assignment 1 (Location) due. In-class critique.
	January 19	No class, MLK day.
Week 3	January 21	Design Assignment 1 (Location) part 2 due. In-class critique.  Design Assignment 2 (Participation) out.
	January 26	Reading:  Brewer, J. and Dourish, P. Storied spaces: Cultural accounts of mobility, technology, and environmental knowing. International Journal of Human-Computer Studies 66, 12 (2008), 963–976.  Shklovski, I., Vertesi, J., Troshynski, E., and Dourish, P. The commodification of location: dynamics of power in location-based systems. Ubicomp '09: Proceedings of the 11th international conference on Ubiquitous computing, ACM (2009), 11–20.  Troshynski, E., Lee, C., and Dourish, P. Accountabilities of presence. CHI '08: Proceeding of the twenty-sixth annual SIGCHI conference on Human factors in computing systems, ACM Press (2008), 487.
Week 4	January 28	Reading:  Björgvinsson, E., Ehn, P., and Hillgren, P.-A. Participatory design and “democratizing innovation.” PDC '10: Proceedings of the 11th Biennial Participatory Design Conference, ACM (2010), 41–50.  Friedman, B. and Kahn, P.H., Jr. Human Values, Ethics, and Design. In The human-computer interaction handbook: fundamentals, evolving technologies and emerging applications. Mahwah, NJ, USA, 2003, 1177–1201.  Sengers, P., Boehner, K., David, S., and Jofish' Kaye, J. Reflective design. CC '05: Proceedings of the 4th decennial conference on Critical computing: between sense and sensibility, ACM (2005), 49.
	February 2	Reading:  Verbeek, P.-P. Moralizing Technology. University of Chicago Press, 2011. Chapters 2, 3, 5.
Week 5	February 4	Semester Project proposal presentations.

Week 6	February 9	Interactivity. No Class.
	February 11	Design Assignment 2 (Participation) due. In-class critique.
Week 7	February 16	Reading:  Cohen, K.R. Who We Talk About When We Talk About Users. EPIC '05: Ethnographic Praxis in Industry Conference Proceedings, (2005), 9–30.  Irani, L., Vertesi, J., Dourish, P., Philip, K., and Grinter, R.E. Postcolonial computing: a lens on design and development. Proceedings of the 28th international conference on Human factors in computing systems, (2010).  Taylor, A. Out there. Proceedings of the 2011 annual conference on Human factors in computing systems, ACM (2011), 685–694.
	February 18	Design Assignment 2 (Participation) revision due. In-class critique.  Design Assignment 3 (Identity) out.
Week 8	February 23	Reading:  Bernstein, M.S., Monroy-Hernández, A., Harry, D., André, P., Panovich, K., and Vargas, G.G. 4chan and/b: An Analysis of Anonymity and Ephemerality in a Large Online Community. Proceedings of the Fifth International AAAI Conference on Weblogs and Social Media, (2011), 50–57.  Joinson, A. and Paine, C.B. Self-Disclosure, Privacy and the Internet. In A. Joinson, K.Y.A. McKenna, T. Postmes and U.-D. Reips, eds., Oxford Handbook of Internet Psychology. Oxford University Press, 2007, 237–252.  Kang, R., Brown, S., and Kiesler, S. Why do people seek anonymity on the internet?: informing policy and design. CHI '13: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ACM Request Permissions (2013), 2657.
	February 25	Project work day.
Week 9	March 2	Reading: Grinter, R.E., Palen, L., and Eldridge, M. Chatting with teenagers. ACM Trans. Comput.-Hum. Interact. 13, 4 (2006), 423–447.  Srivastava, L. Mobile phones and the evolution of social behaviour. Behaviour & Information Technology 24, 2 (2005), 111.
	March 4	Semester Project milestone 1 presentations.
Week 10	March 9	Reading:  Bylund, M., Höök, K., and Pommeranz, A. Pieces of identity. Proceedings of the 5th Nordic conference on Human-computer interaction: building bridges, (2008), 427–430.

Hall, S. Who needs 'identity'? In Questions of Cultural Identity. Sage, London, 1996, 1–17.

Palen, L. and Dourish, P. Unpacking “privacy” for a networked world. CHI '03: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ACM Request Permissions (2003), 129.

	March 11	Design Assignment 3 (Identity) due. In-class critique.
Week 11	March 16	Spring Break. No Class.
	March 18	
Week 12	March 23	Reading: Assigned from group projects.
	March 25	Design Assignment 3 (Identity) revision due. In-class critique.
Week 13	March 30	Reading: Assigned from group projects.
	April 1	Semester Project milestone 2 presentations.
Week 14	April 6	Poster Critique.
	April 8	Project Work Day. Out on travel.
Week 15	April 13	Poster Critique. Present posters and demos at the Digital Media & GVU Demo Day. Final date TBD, will adjust as needed.
	April 15	Project work day.
Week 16	April 20	Final presentations.
	April 22	Final presentations.
Week 17	April 27	Finals Week. No class

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***INFORMATION FOR STUDENTS WITH DISABILITIES***

Please notify the instructor if you have any disabilities with which you need special assistance or consideration. The campus disability assistance program can be contacted through **ADAPTS**.

***HONOR CODE STATEMENT***

Students are expected to adhere to the **Georgia Tech Honor Code**.